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Research Article

Financial Sustainability In Higher Education Institutions: Accounting Perspective

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ABSTRACT

This paper aims to review the research literature on financial sustainability in higher education institutions (HEIs) from the perspective of accounting principles. A search of Google Scholar to select only the papers available in English yielded 16 papers for the review. Out of 16 papers reviewed, ten dealt with specific financial analyses to highlight the measurement of financial sustainability trends in some HEIs. The remaining six papers dealt with non-financial issues like social factors and conflict between academic and financial logic. The commonly used method for assessing the financial sustainability of HEIs was the estimation of financial ratios. ROA, debt-equity (debt management) ratio, and asset management ratio are some of these ratios. The use of different financial instruments to assess the status of financial sustainability leads to some uncertainty about which method should be used in which context. Further research is required to sort out this issue. Some methods of implementing strategies to ensure financial sustainability in HEIs were described in detail in two papers from Saudi Arabia. Some problems and challenges of implementing these strategies were also discussed in two papers from Italy. HEIs need to implement measures to ensure financial sustainability with continuous monitoring and improvement using appropriate financial ratios. This is necessary because of the reduced funding from public sources and increased demand for accountability and transparency from the HEIs. It also helps to remain competitive in the higher education market.

Keywords: Financial sustainability, higher education institutions, accounting perspective, review

Introduction

Financial sustainability in higher education institutions (HEIs) from an accounting perspective refers to the long-term ability of these institutions to maintain their financial health, fulfil their financial obligations, and support their academic missions effectively. This involves managing resources efficiently, generating revenue streams, controlling costs, and ensuring transparency and accountability in financial reporting. Sound financial management is crucial for the viability and success of higher education institutions in an increasingly complex and competitive environment.

In higher education institutions, financial sustainability is about increasing internally generated funds and ensuring regular income without compromising prospects. Accounting systems like accrual and cost accounting can help improve transparency and support financial sustainability. Sustainable accounting practices can help universities use relevant metrics like carbon emissions, water usage, and waste generation. Factors that directly impact economic sustainability in the case of higher education institutions include the number of enrolled students and research productivity. Financial sustainability and accountability are interdependent. To secure sufficient funding, the management must supply the required monetary data to fulfill its accountability role and justify its operations.

A good account of financial sustainability issues related to accounting in HEIs has been provided by Modugno and Di Carlo (2019). There are challenges and opportunities of accrual and cost accounting when using them to enhance HEIs' financial sustainability. These two accounting, along with budgeting, have spread in the HEIs of many countries. The introduction of these accounting types has not produced the desired effect in HEIs. The factors affecting the desired effects are some issues of transparency and ensuring financial

sustainability. Government fund transfers, organisational issues and cost accounting issues also affect the financial sustainability of HEIs.
This is a rich research area. Many research papers are available describing the situation in different universities around the world. This paper aims to undertake an exploratory review of the topic using published research literature.

Method

The purpose of this study is to conduct a review on the topic of financial sustainability in higher education institutions from an accounting perspective. This review aims to synthesise and analyse the existing literature on this topic to provide a comprehensive understanding of the current state of research. To conduct this review, 16 papers were shortlisted from Google Scholar based on their relevance to the topic and their quality of research. Inclusion criteria for the selected papers included being published in peer-reviewed journals, being written in English, and focusing on the topic of financial sustainability in higher education institutions. Exclusion criteria included non-relevant articles, editorials, and duplicate articles. These papers are described in the Results section. The broad trends of findings are discussed in the Discussion section before finally concluding the paper with salient points.
This review aims to provide a comprehensive understanding of the current research on financial sustainability in higher education institutions from an accounting perspective. The synthesis and analysis of the selected papers will contribute to the existing knowledge on this topic and identify areas for future research.

Results

Non-financial aspects
Based on the critical social theory and strong sustainability as the theoretical framework, an analysis of the constraining role of accounting in HEIs pursuing sustainability was done by Lange and Kerr (2013). The authors used a qualitative approach consisting of a literature review and anecdotal evidence. It was found that conventional accounting practices were restricted by positivism, managerialism and neo-classical economics. It created a mental barrier for accountants to recognise the social constructs of accounting reports and evaluation roles. The reward structure of universities, reporting methods, and curriculum focuses were not favourable in transforming accounting practices towards sustainability.
A model of sustainability accounting for an Indonesian university was proposed by Kurniawan (2020) based on the identification of social and environmental costs of the university's internal business activities, the process of identifying the sustainability performance of universities with the Graphical Assessment of Sustainability in Universities (GASU) and STARS systems and identifying financial and non-financial information from the university. The topic is sustainability accounting, but the model is that of sustainability reporting. The author seems confused between the terms “sustainable accounting” and “sustainability reporting”.
In the case of Malaysian public universities, in the context of budget cuts by the government, financial sustainability was implemented by managing the conflict between academic logic and financial logic to co-exist to ensure legitimacy and survival. By compartmentalising the functions of key divisions and through loose coupling, universities could support the dual logics (Mamat, et al., 2021).
A survey of 53 top management and experts from seven major public universities in Ghana was undertaken by Ayam (2021) to examine the depth of the relationship between the management factors (financing scheme, governance framework, cost management, accounting information system, and pricing approach) on financial sustainability. A significant relationship was observed between all the five factors and between these factors and the financial sustainability of the universities. Three of the five factors (governance framework, cost management and pricing approach) provided the best-fit equation for financial sustainability. The authors recommended government review and financing policy reforms, implementation of rigorous costing systems, ABC analysis, activity costing and pricing guidelines by the government to the universities, IT systems to support enterprise reporting, review of student loans and grants and GETFund policies. Further research by expansion to more universities with better research methods was recommended.
To evaluate the impact of the current methods used by the University of Zambia’s internal income-generating activities on the financial sustainability of the University, Kalomo and Chama-Chiliba (2022) used a mixed approach of surveys and interviews with 29 members of the staff of the university and secondary data on budgets, management accounts and audited financial reports. The authors observed that the institutional framework used by the universityuniversity for internal income generation was not sustainable and was inadequate to meet the current expenditure. The income generated internally was less than twice the amount spent by the university on expenditure. Staffing costs cannot be met through current internal income-generating activities. There were several gaps in the current internal income generation strategies. They included the failure to broaden the income base, lack of consensus on sharing ratios between the university

and staff on consultancy income, and lack of aligning the current strategy of internal income generation to the changes in the external business environment. Recommendations have been given to address these issues.

Financial analysis methods

In their 2019 study, Di Carlo, et al. explored the financial sustainability of 10 Italian universities, taking into consideration the impact of reduced public funding and increasing societal expectations for expanded and enhanced services. Recently, the Italian government has brought in a reform asking the Italian universities to shift to accrual accounting on the premise that this step will improve their financial sustainability. The writers devised specific methods to examine the financial approaches implemented by the 10 Italian universities in response to the changing competitive landscape. They constructed a framework utilising distinct financial indicators to evaluate the institutions' fiscal viability and analyse their financial tactics. The findings showed that there were significant variations between Italian universities along with many common features. These universities used different approaches to address the challenges. Based on the reform-driven need to adopt cost containment, outcome maximisation and accountability, these universities pursued three financial strategies to enhance sustainability. These strategies were domestic competition to increase student enrolment and research productivity, financial autonomy to seek alternate funding sources like research grants, market-oriented for-profit operations like research spin-off firms and contracts with corporations, and cost-reduction strategies without affecting volume or quality. The key aspects of the financial statements analysis of the ten universities by the authors were first tabulated against key users of each financial information. Some key financial ratios were also tabulated. The results of the analysis of the ten universities were tabulated finally.

The main accounting tool of sustainable financial accounting is accrual accounting. Gigli and Mariani (2018) found that Italian public universities struggled to transition from cash accounting to accrual accounting due to the lack of accrual accounting culture in these universities. The authors used a mixed approach of surveys, interviews and action research. The pre-reform (cash) accounting consisted of an input-based budget, budget for profit and loss, budget for investments, cash budget and other documents. Barriers to transformation to accrual accounting were confusers, frustraters and delayers of both institutional and organisational sources. Some universities attempted to change to a mixed accrual approach, but it led to new distorted accounting information.

In 2019, Almagtome, et al. conducted a study with the goal of examining how the financial sustainability and accountability function is affected by university autonomy. They also empirically evaluated the extent of the financial sustainability in public higher education institutions in Iraq. The authors used an exploratory approach consisting of semi-structured interviews and content analysis procedures. To explain the relationship between financial sustainability and accountability functions, the authors used a theoretical model. The model was based on five premises related to stakeholder pressure, the need for the right stakeholder attitudes, transparency in financial reporting for stakeholders' support for public funding, and the role of revenue stability on financial sustainability. Users of financial reports include the general public, legislative bodies, oversight organisations, investors and creditors, and researchers. According to FASB standards, public universities need to present balance sheets, income statements, statements of changes in resources and cash flow statements. The solvency ratio was estimated from the financial data of Kufa University from 2015 to 2017 to indicate financial sustainability. The financial sustainability index (FS Score) was estimated by dividing the total funding resources by current financial liabilities. Scores of less than 1 indicate poor financial sustainability. Therefore, for a reasonable financial sustainability, the index should be one or more. The higher the index value, the better the financial sustainability. For Kufa University, the FS scores were 0.79 for 2015, 0.94 for 2016 and 0.92 for 2017. Thus, all values were below 1, indicating poor financial sustainability. The forecasts showed that it cannot continue to be financially viable without support from the government. Its financial deficit was found to be due to a lack of financial and administrative authority. The results also showed interdependence between financial sustainability and accountability. Hence, to obtain adequate funds, the management must provide the required financial data for accountability and legitimise its activities.

In their study, Kharusi and Murthy (2017) justified their argument for equity funding rather than debt to survive and sustain funding to improve the quality of education by private universities. They used two examples of private universities in Oman. The authors estimated profitability analysis (net margin, ROA, ROE), liquidity analysis (current ratio, cash ratio, net working capital to total assets), long-term solvency analysis (total debt ratio, debt-equity ratio, equity multiplier, time interest earned ratio, debt service coverage ratio), and asset management analysis (net working capital turnover, fixed capital turnover, total assets turnover) for both cases. Results showed that Majan College was financially sustainable in the long run, and Dhofar University had long-term sustainability issues.

In Alshubiri's (2021) study, the concept of financial sustainability was evaluated by the amount of surplus income generated after covering operational costs. The focus was on the impact of financial sustainability indicators on higher education's ability to attract foreign direct investment (FDI) in 26 OECD countries. Three proxies were used to measure financial sustainability: current tertiary education expenditure (CE) for financial expenditures, university-life expectancy (ULE) for efficiency, and gross enrolment tertiary ratio (GETR) for endogenous growth. Data collected from World Development Indicators (WDI) from 2001 to

2015 was analysed using fixed effect (FE) and random effect (RE) estimations to address heterogeneity issues. Results were derived through financial models. The findings showed that for both RE and FE, a 1% increase in CE led to a 0.19% and 0.18% increase in FDI, respectively. This positive and significant impact became even stronger when controlling for endogeneity using GMM estimations, with FDI increasing by 0.22% for every 1% increase in CE. A negative and significant relationship was found between FDI and GETR in FE results, with a 0.0006% decrease in FDI for every 1% increase in GETR. This effect was even larger when using GMM estimations. There was no significant relationship between ULE and FDI, as all estimators showed a positive but insignificant relationship.

South African universities are faced with the challenge of managing the limited funds available to them, which is exacerbated by the call for free education. McLaren and Struwig (2019) explored the possibility of using five groups of ratios as independent variables, which were financial performance, liquidity, asset management, debt management and reserves as indicators for financial sustainability at South African universities. Four elements of financial sustainability, including strategy, operating sustainability, investment and risk management, were also used as dependent variables. Empirical testing of one South African university for eight years demonstrated the utility of these ratios to assess the financial sustainability of universities along with the four elements. Based on the analysis of data from 2010 to 2017, the authors proposed 11 ratios as indicators of the financial sustainability of universities. Financial performance ratios were included in three of the four elements of financial sustainability, which consist of strategy, operating sustainability, and investments. Reserve ratios were included in two of the four elements of financial sustainability. Risk management includes three groups of ratios, which are asset management ratios, debt management ratios and liquidity ratios. The ability of the university to recover student debt and cover different debts using its assets and ability to continue its business with additional funding in the next financial year gradually decreased over time. This can be seen as a warning sign on the financial sustainability of the university.

Resource dependency theory states that revenue diversification is a prudent strategy for non-profit organisations to mitigate their financial challenges. Jaafar, et al. (2023) examined the effect of revenue diversification on the financial sustainability of 20 Malaysian public universities using panel data for ten years (2008-2017). Revenue diversification was measured using the Hirschman-Herfindahl Index (HHI). The lower the HHI, the higher the revenue diversification. Financial sustainability was proxied by the Return on Assets (ROA) and Net Profit Margin. Revenue diversification enhances financial sustainability when ROA is used as a proxy. When net profit margin was used as an additional proxy, revenue diversification became non-significant. However, the relationship between revenue diversification and ROA was weak, as the Malaysian universities were in the initial stages of revenue diversification.

Drawing on social stratification theory, Baltaru, et al. (2022) argued that rankings aggravate, rather than alleviate, resource inequalities between elite and non-elite universities. The authors tested this argument by comparing the financial sustainability of elite and non-elite English universities and moderating the effect of rankings on universities' financial sustainability. The researchers utilised a nationwide longitudinal dataset covering 102 universities in England between 2008 and 2017 to gather annual organisational data. The net operating revenues to total income ratio, which represents the proportion of surplus or deficit after taxes to total income, was employed as the measured variable for financial sustainability. Ranking position was the most important predictor, operationalised based on the university rankings provided by the Complete University Guide. The indicator ranges from '1' (highest-ranked university) to '128' (lowest-ranked university). In the analyses, the scale was reversed so that one unit increase in rank can be interpreted intuitively as a higher rank. The elite status of universities was based on membership in the Russell Group. Financial sustainability was estimated using a formula consisting of the sum of the financial sustainability of the previous year (0 if not available), university rank, size, and incomes from fees, research and other sources, fixed effects of university and year and error term. These estimates showed a positive relationship between university rank and financial sustainability, and this relationship was stronger for non-elite groups. For elite universities, financial sustainability depended mainly on their research income. On average, for non-elite universities, one place in ranking increased the percentage ratio of surplus to total income by 3.6%, when previous levels of financial sustainability and size are controlled. This was explained by the income generated from different sources one year after the university had been ranked, notably fee income. While for non-elite universities, it was important to achieve a surplus each year, elite universities could rely on their prestige to maintain their financial well-being if a university expands to too large a size, financial sustainability declines in the case of elite universities. In 2010, all universities were financially more sustainable than in 2009, but by 2017, the financial sustainability of non-Russell Group universities declined, while that of elite universities was unaffected.

The financial sustainability planning of King Abdulaziz University was evaluated by Al-Filali, et al. (2023) using modified forms of three strategic planning tools: a strategy map (SM), the balanced scorecard (BSC), and a business-model-canvas (BMC). The authors also provided a roadmap of key milestones for financial sustainability at the university by identifying sources and indicators of the university's financial capacity. A series of diagrams and tables were given for each stage of the process. Four recommendations, consisting of investing in competent human resources, increasing financial assets, and utilising technical capabilities, were

also given. Further research to extend this approach to other contexts has been suggested. In a related paper, a novel strategy known as the Green Ocean Strategy for Financial Sustainability (GOSFS) was proposed by Al-Filali, et al. (2023). The authors provided a roadmap of 18 steps to implement this strategy in HEIs around three primary critical areas of resource development, good governance, and regulations and legislations consisting of 18 pillars. The model was tested at King Abdulaziz University of Saudi Arabia. A long-term target for 2045 and an overall target for 2025 were set. Four recommendations were given to effectively implement GOSFS to accelerate business growth and explore the options in the university investment ecosystem regarding whether to invest in highly qualified human capital, expand financial resources, or leverage technical resources. Future directions were also provided.

Discussion

Out of 16 papers reviewed, ten dealt with specific financial analyses to highlight the measurement of financial sustainability trends in some HEIs. The remaining six papers dealt with non-financial issues like social factors and conflict between academic and financial logic.

The papers dealing with specific financial analysis used financial ratios as the ideal tools to measure the status of financial sustainability and possible future trends. ROA, debt-equity (debt management) ratio, and asset management ratio are some of these ratios. The use of different financial instruments to assess the status of financial sustainability leads to some uncertainty about which method should be used in which context. It may be necessary to conduct a detailed systematic review of these methods and arrive at some possibilities. These possibilities can be compared in different contexts of HEIs in different countries to determine the best assessment tool.

The paper by Al-Filali, et al. (2023) outlined detailed procedures based on solid principles to implement financial sustainability using King Abdulaziz University, Saudi Arabia as a case study. The second paper dealt with a novel method called Green Ocean Strategy for Financial Sustainability. This is interesting. The term green was used for financial aspects related to environmental variables. The model can be tested to examine its validity in other contexts.

Various challenges and barriers related to financial sustainability accounting were identified and discussed in two papers (Di Carlo, et al., 2019; Modugno & Di Carlo, 2019). Addressing some of these barriers and challenges requires policy interventions from the government, and others require actions from the university.

Conclusion

The overall conclusion is that despite many challenges and barriers, HEIs need to implement measures to ensure financial sustainability with continuous monitoring and improvement using appropriate financial ratios. This is necessary because of the reduced funding from public sources, and increased demand for accountability and transparency from the HEIs. When many other universities implement financial sustainability accounting, if any particular HEI, does not implement it, it might lose a competitive advantage to attract increased student enrolment, research projects, consultancies and other revenue sources.

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