

Challenges of Financing Public Universities and Effects On Quality of Higher Education. A Critical Review

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Abstract- Financing public universities is crucial for survival, attaining the stated objectives and the smooth management of university operations. However, public universities have undergone reduced state funding, resulting to negative impact on the part of students and as well as the quality of higher education. This concept paper starts with a review of the variables of financing public universities and quality of higher education, followed by theoretical framework. The ensuing sections discusses relationships between financing public universities and quality of education concepts, followed by summary of literature review and research gaps. The paper ends with a conceptual model and hypothesis generation.

Index Terms- Public Universities, Financing Public Universities, Quality of Higher Education and Funding

I. INTRODUCTION

Public universities contribute to the enhancement of in-depth knowledge, skills and innovation through education, training and research. These institutions are formed by states to enhance literacy as the fundamental objective and also enable trickle down of knowledge to the society (Holmes & Mayhew, 2016). The escalating demand for higher education is necessitated by the need to master skills, innovation and also by the rise of a society hinged on academic credentials. However, the socio-economic advantages from public universities are related with availability of state financial support, hence financing public universities is of great importance (Hanushek, 2016).

Over the years, public university education has registered increased demand notwithstanding inadequate fund appropriations by the state to finance teaching costs and aid keep low tuition fee levels (Rosinger et al., 2022). Financing public universities is crucial for survival, attaining the stated objectives and the smooth management of university operations (Leon & Cock, 2016). However, public universities have undergone reduced state funding, resulting to negative impact on the part of learners and as well as the quality of higher learning (Smith, 2014).

This paper starts with a review of the variables of financing public universities and quality of higher education, followed by

theoretical framework. The ensuing sections discusses relationship between financing public universities and quality of education concepts, followed by summary of literature review and research gaps. The paper ends with a conceptual model and hypothesis generation.

Public Universities

Public universities are higher learning institutions which are owned and financed by the state. The universities are regulated by state's directives (Huq & Huque, 2014). University education demand has grown and the access has been increasing every time students complete their secondary or equivalent education levels (Mange, Onyango & Waweru, 2019). The demand for new knowledge and skills compels for higher learning and training which exerts pressure to already inadequate university chances and facilities. Thus, public university financing has become of great importance in the improvement of university education in both developed nations as well as the emerging economies (Mange, Onyango & Waweru, 2019). Tang and Zairi (1998) argued that public universities fundamental roles are teaching, research and scholarship while Johnes and Taylor (1990) posited that universities offer in-depth knowledge, educate learners, pursue academic improvement as well as complement the national development agenda.

Sijde, Popma and Tushune (2012) suggested that institutions of higher learning main objectives are teaching, learning, research, consultancy and service to the society. So as to attain the objectives, institutions of higher learning need to face challenges coming from university physical resources, employees, students, financing, academic courses as well as society relations (Campbell, 1974). Public universities are characterized by provision of quality education and efficient resource utilization (Chacha, 2002). Universities in emerging economies have gone through challenging period of increased number of students putting pressure on university finances resulting to deterioration of university infrastructure as well as education quality (Chacha, 2005).

Financing Public Universities

Higher education and training is a costly venture which needs huge investment. Financing public universities is a vital

component for attainment of learning goals (Kim, Horta, & Jung, 2017; Siddiqui, 2012). Public universities are the responsibility of the governments, hence get funded by the states (Smith, 2014). The state funds allocated to the universities assist in teaching, learning, consultancy as well as research. As financing of public universities decline, the universities struggle in matching their funding expectations. Budgetary shortfalls have been a challenge for many governments in funding public universities (Edirisooriya, 2003).

Salmi and Hauptman (2006) argued that financing public universities could be obtained either directly or indirectly. The direct funding are from state funding such as formula funding performance contracts, competitive grants, while the indirect finding are from learners' tuition fees, scholarships, philanthropic funding, donations and research and consultancy while OECD (2020) indicated that public universities get revenue from numerous sources such as, state financing, students' fees, research grants, knowledge transfer comprising consultancy services, intellectual property, trading for instance, getting funds from leasing conference facilities and from investments as adaptive response to the fluctuating state financing.

Funding in learning institutions is subjected to government education policies and practices. States decides the extent to which public universities are financed and how allocations are disbursed (Smith, 2014). Huge chunks of funding are appropriated to cover for remunerations and the rest for operations as well as development projects. The pressure for university learning has been increasing against situation of declining financing appropriations to public universities by the states (Gudo, 2016). Financing helps public universities strive to attain accessibility as well as quality education.

Quality of Higher Education

Cheng and Tam (1997) described quality of higher education as a process comprising inputs, procedures along with outputs of learning approach offering services to satisfy all education actors by matching their expectations. The quality of education can be operationalized by quantitative and qualitative approaches. Quantitative method comprises an open system (Dare, 2005). The quantitative indicators of education quality are finance, staff, learning facilities and instructional content. The qualitative measurement is through evaluation of education service quality via service quality models such as SERVQUAL, ISO 9000 and Total Quality Management (TQM) (Parasuraman, Zeithmal & Berry, 1985; Kelso, 2008).

The service quality models describe perceived quality as global assessment of service superiority. Expectations are referred as desires of customers' beliefs towards the services offered (Parasuraman, Zeithmal & Berry, 1985). There are five service quality dimensions namely, tangibles comprising personnel, equipment and physical facilities; reliability comprising the capability to perform the service dependably; Assurance is described as staff courtesy and trustworthiness; empathy is personalized customers' attention while responsiveness is the willingness to offer prompt services (Parasuraman, Zeithmal & Berry, 1985).

According to South Carolina's Commission on University Education (2002) quality of university learning is operationalized by mission focus described as the funds expenditures to attain the mission, curricula offered and strategic plan adopted to attain the mission. The quality of faculty includes; academic credentials of teaching staff, performance appraisal of faculty, compensation, and community participation. The instructional quality indicator is described as class sizes, credit hours taught, accreditation of academic courses, and focus on quality teacher education. Institutional cooperation and partnerships which encompasses sharing equipment, programs, technology with the community and private sector. In addition, Commission on Higher Education (2002) indicated that administrative efficiency indicator comprises administrative cost ratios, best management practices usage and administrative overhead. The entry requirements indicators entails cut-off points and regular student enrollment. The graduate achievement comprises graduation and employment rates, employer feedback on graduates. Lastly is the research financing described by the number of research grants and funding support for academic reforms.

Theoretical framework

Systems Theory

The systems theory as advocated by Bertalanffy (1972) is described as integrated systems in relations to administration of organizations. A system is an assemblage of elements brought together to achieve a function. The systems theory is appropriate for this study because public universities are systems and are also referred to as social organizations with inputs namely learners, employees, finances as well as physical resources. The output comprises learners' research results, consultancy and community services. Public universities get feedback from the state, community and technologies (Bertalanffy, 1972).

Capital Structure Theory

The theory of capital structure as advocated by Miller and Modigliani (1958) describes how organizations receives their funds for their functioning. Funding is a vital component in public universities specifically in capital sourcing decisions (Handoo & Sharma, 2014). The theory is appropriate to this study since it aids to assess how higher learning institutions structure capital as well as how financing is done in order to enhance performance. To achieve financial stability, public universities should have varied revenue structure as well as pick out a reputable donor funding for research as well as innovation and other operations of the learning institutions (Estermann & Pruvot, 2011).

Revenue Theory of Costs

Revenue theory states that total expenditure of university learning is regulated not by technical demands of offering learning services, or through unreal attainment of needs but, instead by the financial access for learning that could be appropriated for each learner (Bowen, 1980). This theory is appropriate for this study because public universities being non-profit generating entities do not need to strive to reduce cost for survival. In addition, it is expected to that the public universities could adjust to appropriated finances in a way that when the money is increased, expenses goes up and when funds are reduced, expenses and unit cost are also reduced (Bowen, 1980).

II. EMPIRICAL LITERATURE REVIEW

Financing Public Universities and Quality of Higher Education

The increase of public universities has enhanced university education access although there are concerns it has led to deterioration of quality of higher education (Mayunga, Stefan & Christoph, 2009) in addition Kiamba (2004) and Sihanya (2009) noted that increased student enrolment in public universities has devastating impact on quality of education. Financing approaches such as fundraising serve as an option to mobilize resources so that universities can achieve its objectives (Smith 2014). Gudo et al. (2011) indicated that higher learning institutions in developing economies have shortage of physical resources to provide learning services to the learners. To enroll an increased number of student population in public universities need heavy investment in teaching, learning and research resources which are expected to contribute on enhancing the quality of education.

Payne (2001) in the study of the influence of state financing of university research and development on private donations noted that there is a positive relationship between public and private donations for research in higher institutions of learning and a negative relationship for no-research learning institutions. Husted and Kenney (2018) hypothesized that an increment of government's public university allocations have a positive impact on the number of academic research hence enhanced education quality. It is postulated that a positive relation exists between the remuneration of faculty top management and the learning quality. Reduced government appropriations directly affects quality of learning in higher education and lead to financial accounts constraints and need students' tuition to be increased or cut costs on expenditure to make amends (Husted & Kenney, 2018).

Although numerous empirical studies indicate a positive association between public university financing and the education quality (Husted & Kenney, 2018; Krueger, 2003; Woessmann, 2000) there are controversies surrounding financing public universities and the impact on education quality. The postulation that an increase in learning resources in relation to financing results to enhanced education quality is countered by studies which indicated an insignificant relationship between the two concepts (Hanushiek, 2003; Schultz, 1996; Smith, 1993). Smith (1993) noted that dependence on state financing leads to reduced lecturer quality ranking leading to lower learner outcomes.

Challenges of Financing Public Universities and Effects On Quality of Higher Education

Previously, the world over and specifically the emerging economies have experienced growth of globalization, persistent economic downturn coupled with structural adjustment programs, which target public universities. The universities' have been compelled to adjust to new approaches in teaching, research as well as learning hence posing challenges to faculties and eventually having effects in higher education quality.

Summary of Empirical Literature Review and Research Gaps

The causes of funding challenges which have affected public universities are namely, mass university education, the work-intensive attribute of university education coupled with an accumulation of budgetary needs, are the reasons of escalating expenditure in public universities. In addition, government allocations are dwindling, due to the fact that learning is termed as a discretionary expenditure in relation with other state operations such as healthcare and basic education, hence public university financing could vary (Smith, 2014). The scaling down of government appropriations in higher learning institutions have hugely affected the suaveness of the faculty hence affecting the quality of education acquired by learners. Bekir (2016) research findings in massification of university education in Turkey indicated that the broadened public university education with no students' tuition fees resulted to low quality education among students.

Sangiumvibool and Chonglertham (2016) argued that global financial institutions have pressurized governments to implement financing policies in public universities namely, performance-based budgeting, expenditure cuts as well as incentive financing to enhance profit-oriented academic research. The budgetary constraints which have taken toll on physical facilities and reduced teaching and learning resources in the time of increased students' population, have negatively affected learners and staff morale in attaining their objectives. University education stakeholders have shown great concern on the continued degradation of quality of higher education (Mange, Onyango & Waweru, 2019; Wanyama, Makatiani & Sifuna, 2021). However, if the students could finance their education, public universities could enroll students to programs which they never met the entry points, degrading the programs' education quality.

A good number of students look to university education achievement as an indicator of socio-economic status and the reduction of budgetary allocations for public universities pile pressure of fee payment by the learners hence some students end up dropping their studies. Again also, the impact of lesser budgetary allocations to higher education is questionable graduate quality (Gudo, 2016). It is advocated that states need to increase administrative capacity of public universities by enhancing and implementing policies to match the budgetary gaps needed by the higher learning institutes in order to have quality graduates (Gudo, 2016).

However, Volkwein (1987) noted that quality of higher education is challenging to operationalize, and that expenditure cuts should not lead to relative degradation of education quality. Volkwein (1987) argued that an increment of financial allocations make administrative costs go up indicating that reduced allocations could be counterbalanced by reducing administrative costs. In addition, universities who had undergone sharp reduction in government allocations improved efficiency more than the ones that received considerable reduction in financial allocations (Robst, 2001).

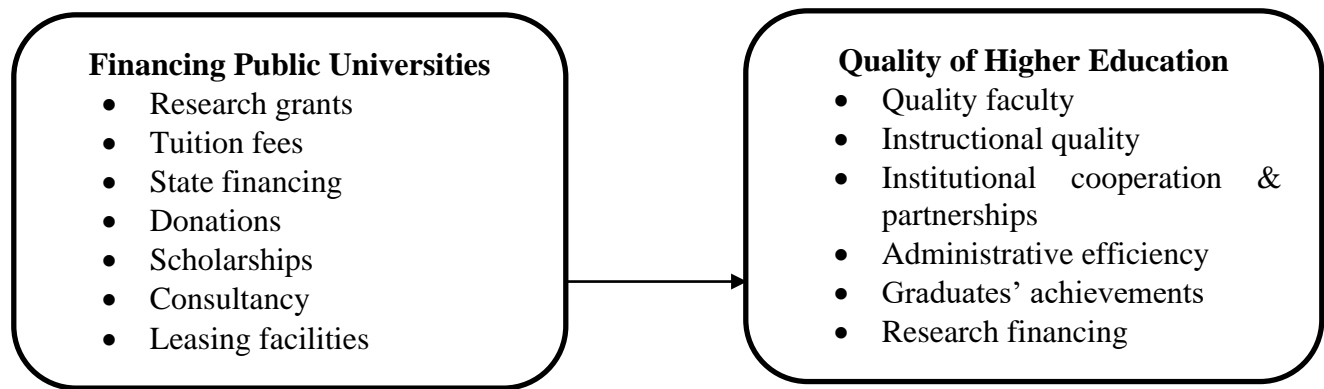
Table 2.1 Empirical Literature Review and Research Gaps Summary.

Year & journal	Author & title	Methodological gaps	Findings	Research gaps
2021: Journal of Research & Method in Education	Wanyama, Makatiani & Sifuna: Influence of Financing on learners' involvement in Science and Technology course in Public Universities, Kenya	Used descriptive survey design & interviewing and document analysis to collect data.	Financing need to be supported by well stipulated policies with focus on quality & quantity.	Limited scope The study never addressed all faculties and did not address challenges of financing
2019: Journal of African Interdisciplinary Studies.	Mange, D. M, I Dr. Onyango, G. A2 and Dr. Waweru, S. N.3 Management bottlenecks Facing Kenya's Public Universities and effects for the university Education Quality.	Descriptive survey research design and purposive sampling approach applied.	Inadequate financing negatively influenced learning & research leading to poor quality of education & poor research quality	The scope of the study was limited to three universities thus limiting study generalization
2018; Journal of Education Finance	Husted & Kenny: The impact of declined funding from Government on research in public Universities	Study used secondary data	State funding is directly associated with quality of research done by the faculty	Study limited to universities with focus on economics research only
2016: International Journal of Managerial Studies and Research	Gudo. C: Impact of Funding on Quality of University Education in Kenya	Used survey design in both public & private universities. Used secondary data.	State need to appropriate more funds to public universities to enhance quality of education	The study never considered the challenges of financing public universities
2014: Graduate Theses and Dissertations	Smith, E. (2014). Public Financing decision-Making for university learning in the course of Capital Campaigns.	Adopted a parallel mixed design Used mixed methods & triangulation approach	Decline in state funding have negatively impacted on universities, creating financial constraints to learners and the universities	The study never addressed the challenges and effects of financing in public institutions
2003:Brookings Institution Working Paper	Kane, Orszag, and Gunter (2003), Financing Restrictions at Public Universities: implications & Policy impacts	Used secondary data	The finance reduction negatively impacts on staff morale & quality education.	Limited scope of study due collection of data from research faculty & doctoral universities

Conceptual Framework

The conceptual framework outlines the relations between study concepts such as financing public universities and quality of higher education. The financing public universities is conceptualized as the independent variable and higher education quality is the dependent variable. The model depicts direct relationships between financing public universities and higher education quality. The financing public universities is conceptualized by quantitative and qualitative approaches. The quantitative indicators are namely, staff, learning facilities and instructional content while qualitative indicators are physical facilities, equipment, customized students' attention and offering prompt academic services. The higher education quality is measured by quality of faculty, instructional quality, institutional cooperation and partnerships, administrative efficiency, graduates' achievements and research financing.

Figure 2.1 Conceptual Model



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