



Research Article

Analysis of the Higher Education Funding Systems

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Abstract

This paper presents general aspects of funding system at higher education sector. Funding is not simply a mechanism to allocate funds to finance HEIs but an instrument for the government or public authorities to ensure that the HEIs administration has the same goals with them, other than that the funding adopted by the government to influence the behaviours of agents. In response to the development of society and economy, the pattern of distribution of public funds in the education sector particularly HE, experiences a change in the context of increasing competition for public funds because of pressure from the community to enhance the quality of education.

Keywords: Funding, higher education institutions, performance-based funding

Introduction

This paper presents a literature review of scholarly discussing the general aspects of funding

system and higher education sector. After that, discusses the funding systems in Higher Education Institutions (HEIs) adopted by the developed and developing countries. Next, the paper focuses on the negotiation funding system at higher education system and the various components and techniques of Performance Based Funding (PBF) mechanisms.

Funding System

A funding system can be defined as a source of money allocated to a specific

purpose (Dawkins, 1987). Funding is not simply a mechanism to allocate funds to finance HEIs but an instrument for the government or public authorities to ensure that the HEIs administration has the same goals with them, other than that the funding adopted by the government to influence the behaviours of agents or HEIs (Johnstone et al., 1998).

A fund can be recognized as an act of providing resources, for examples federal government setting money to build a new sport centre or a university setting money to award a scholarship. Most Western countries such as Belgium, Canada, France and even the European Commission shows that there is an increasing interest in new types of audit system, evaluation and reporting of financial system transparent

and disclose the results and performance of public sector organization on the quality of reformation of the public management (Pollitt, 2004). Improvements in the public funding system involve a shift from provision of incremental development of public budgets to performance criteria, and have been interpreted as an effort of the component of the public funding to use more systematic and position the funding system to control the activities of organizational performance and to improve the efficiency and quality of public sector (Taylor, 2003).

There are significant differences in the funding system for Higher Education (HE) and the different mechanisms used in the distribution of government allocations. Salmi and Hauptman (2006a) presented a typology of funding system that differentiates the funding either through negotiated formula, demand-side vouchers, performance-based funding, funding for specific purposes and/or combined funding for teaching and research, block grant funding and project funding. The method of funding systems implemented has a diverging impact, but it seems to contribute to advantage and disadvantage of the features of funding system which influence the higher education institution to the policy makers who are liberated to choose not only the basis of funding but

additionally the unwanted effect as well (Frølich et al., 2010).

Negotiation Funding System

Negotiation funding system is one of the most common methods used. It is also the first step for many other alternative dispute resolution procedures. Successful negotiations usually result in some sort of exchange or gain advantages in the outcomes of collective advantages. Exchanges may be significant examples like money, time commitments or specific behaviours or intangible ways such as an agreement to change the attitudes or expectations, or apology (Pruitt & Carnevale, 1993). In the education sectors traditional fund distribution technique, the provision of funding is determined by a negotiation involving the government and HEIs, through input criteria and historical trends as reference (Ahmad et al., 2012a; Salmi & Hauptman, 2011; Strehl et al., 2007). HEIs and systems in most countries are typically funded through negotiated budgets or funding formulas that focus on inputs or the number of students enrolled. According to Salmi & Hauptman (2011), the amount of funding determined through the negotiation process, conventionally predicted on historical trends and typically distributed to HEIs in *Line-item budgets* or *Block Grants*.

Table 1: Type of Negotiation Funds: Line-Item Budgets and Block Grants

Line-item Budgets	Block Grants
Provide a fairly rigid restriction on how HEIs can spend the money they receive from the government or other public funds.	Give institutions more flexibility and autonomy compared to line- items to determine how public funds are spent.
Little dispute among departments within the organizations	Non-discretionary budget allocation to specific school determined by formula based on objective parameters such as number of students, type of institutions, etc.

Line-item Budgets	Block Grants
Funding is allocated based on past expenditures that can also save time and effort in determining the budget analysis	Flexibility: elimination of line-item budgeting, direct linkage with program budgeting.

The negotiation fund allocated has been criticized as a non-transparent system and fund passed on interest should be changed to the fund mechanism that more transparent (which encouraged the participation from the students to the higher education institution that leads to the contribution of funding system in HE) and guarantee the quality of performance as the public wanted in higher education (Archer et al., 2005). Likewise, Schwarzenberger (2008) also highlighted that the results of negotiations would typically be uncertain because the process somewhat lacked transparency, leaving room of to questions about the government's decision, funding mechanisms based on more performances criteria that would also promote an increase of efficiency and would give some degree of intelligibility and confident. The bureaucratic involve at some stage in negotiation process provides no reason for efficiency, entrenches conservatism, makes it extremely difficult to rapidly adjust the allocation of resources to meet changing requirements, and inhibits HEIs from adapting to the demand for relevant quality (Albrecht & Ziderman, 1992b).

Performance Based Funding (PBF)

The evolution of allocation funds mechanisms for public expenditure and investment in a number of countries, have been through the positively changed. The funding system of HE had switched it pattern from the traditional type of negotiations funding (takes part on behalf of the government and HEIs) to positively increased (into sophisticated) funding mechanisms to protect the distribution results from excessive political pressure and encourage desired behaviours HEIs. Performance based funding (PBF) is a mechanism in which the output or activities result are used to evaluate the

quality and effectiveness of institution amongst public HEIs (Burke, 2002) . This mechanism resulted from the multiple stresses that HEIs and government have to endure to ensure their budgets' capacity to provide a high quality education for future generations. PBF is mainly applied in the healthcare and higher education sectors (Curristine, 2005).

For several countries such as the United Kingdom (UK), Australia and Denmark governments allocate public funds for higher education based on performance evaluations, and normally have specified indicators (Burke, 2002; Herbst, 2007; Liefner, 2003).

Consequently, the PBF mechanism has been created to deal with more than just the problem of limited funding; it is also designed in an attempt to form a culture of assessment and institutional improvement in HEIs around the world

To establish a transparent funding and budgeting system using PBF mechanism, the government must identify performance indicators of HEIs (Schiller & Liefner, 2007). Performance indicators in PBF mechanism vary according to the appropriateness of a country's higher education system, in fact not limited to student achievement, performance assessments, student attendance, graduation rates, certificates conferred or course completion. Several countries use the statistics of graduates, the amount of research grant funds, and research and journals publications, as types of performance indicators (Cuenin, 1987; Guthrie & Neumann, 2007). The majority of HEIs worldwide have already adopted PBF mechanisms that rely on performance indicators (Jongbloed & Vossensteyn, 2001).

Table 2: Performance Indicators from Previous Studies

No	Author (s) and (year)	Research Title	Performance Indicators (PIs)
1.	Doug and Gomes (2007)	Performance Indicators and University Distance Education Providers	<ul style="list-style-type: none"> • Student participation/access indicator • Completion/Retention • Transfer Student Performance • Financial Indicators • Space Utilization • Student Satisfaction • Employment Indicator • Research Indicators
2	Higher Education in the UK (2013)	Performance Indicators in Higher Education in the UK	<ul style="list-style-type: none"> • widening participation indicators • non-continuation rates (including projected outcomes) • module completion rates • research output • employment of graduates
3	Thomas (2011)	Performance-based Funding: A Re-Emerging Strategy in Public Higher Education Financing	<ul style="list-style-type: none"> • General outcome indicators (graduation rates, • Certificates conferred, etc.) • Subgroup outcome indicators (Pell Grant recipients, non-traditional students, etc.) • High-need subject outcome indicators (STEM fields, nursing, etc.) • Progress indicators (course completion, transfer, credit milestones, etc.)
4	David Battersby, (2009)	An Indicator Framework for Higher Education Performance Funding	<ul style="list-style-type: none"> • Student participation and inclusion • Student experience • Student attainment • Quality of learning outcomes
5	(Key National Education Indicators: Workshop Summary, 2012)	Key National Education Indicators: Workshop Summary	<ul style="list-style-type: none"> • Graduation and Retention Rates • Transfer Rates • Educational Progress Rates

No	Author (s) and (year)	Research Title	Performance Indicators (PIs)
			<ul style="list-style-type: none"> • Preparation for Careers and Job Placement • Research and Development Activity • Individual outcomes • Learning outcomes
6	Martin, Michaela, Claude Sauvageot, and Bertrand Tchatchoua (2011)	Constructing an indicator system or scorecard for higher education A practical guide	<ul style="list-style-type: none"> • Costs Indicators • Staff Indicators • Activities Indicators • Results Indicators

Kaufman (1988) disagrees with the fact that performance indicators must correlate with specific measurements of processes or activities like a connection which is necessary to decide whether a process or activity is performed efficiently . Performance indicators (PIs) are so dependent variables and can be different based on the comprehensive purpose they are intended to provide.

Summary of the Pros and Cons of Negotiations Funding Method

In response to the development of society and economy, the pattern of distribution of public funds in the education sector particularly HE experiences a change in the context of increasing competition for public funds because of the pressure from the community to enhance the quality of education (Estermann et al., 2013). Governments and HEIs, through the traditional financing methods of the

negotiation process will determine the amount of public funds allocated to each institution based on the input criteria and historical trends (Salmi & Hauptman, 2006b). Direct negotiations between governments and HEIs, basically based on historical data such as, precedent allocation are of two types; line-item budgeting and block grant (Melonio & Mezouaghi, 2010).

The beginning of each funds negotiation process is when the HEIs submit proposal to the government based on the provisions of the activities of their institutions (Jongbloed, 2001). Usually, negotiations development funds request continues negotiation process between governments officials entrusted with HEIs leaders' takes place in private or invisible to the public (Zusman, 2005). There are three (3) traditional financing mechanisms in HEIs which are negotiated budget, formula funding, and categorical funds (Salmi & Hauptman, 2006b).

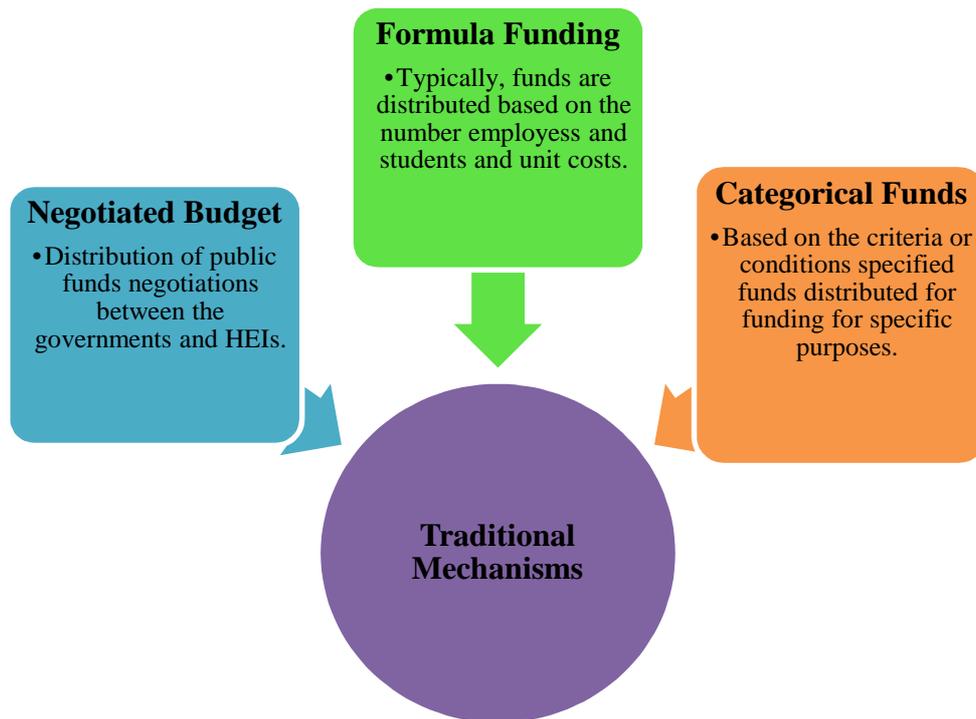


Figure 1: Type of Traditional Funding Mechanisms

Barr (2004) pointed out that, the key in the process of negotiating allocation of funds is the political skills of negotiators, furthermore in official documents, extensive compromise and agreement between the parties involved are generally not written clearly (Zusman, 2005). Therefore, when HEIs “voluntarily” accept and follow everything that is required by the government or policy makers under the threat of funds reduction consequently, it is difficult to interpret whether there are or not political elements that do not fit with the internal governance and development of HEIs (Zusman, 2005).

The advantages of negotiations funding mechanism, the method is relatively simple, lack of ambiguity and can easily control expenditure based on a comparison to previous years in spite of widely used of the funding in various activities and expenditure of the sectors (for instance by the company, HE and others), however it still has limitations and creates problems to

HEIs one of which is line-item budget that does not provide information on the financial flow used and does not provide information efficiency and effectiveness of program (WorldBank, 1998). On the other hand, the funding system had increase the capabilities of HEIs’ to allocate the funds according to the foremost needs of the university’s activities and programs (Salmi & Hauptman, 2006b). Based on Word Bank (1998), line-item budget only takes in account the short-term and therefore will lead to long-term failure.

Negotiation mechanism has not been an effective mechanism for allocating funds for HEIs for the reason that there is no system in place that ensures the academic courses of HEIs offer to the public had meet the needs of the local labour market and skills required to secure the jobs nowadays. Therefore, the restructuring fund distribution method through emphasizing performance management (Albrecht & Ziderman, 1992a).

Table 3: Comparison Between Traditional and PBF Mechanism

Traditional	PBF
Allocation of public funds is negotiated between the government and HEIs.	The government made a deal with regulatory HEIs to establish joint based on performance objectives.
Categories of institutions specified as qualified for funding for particular purpose includes facilities, equipment, activities and programs.	HEIs are competing with each other on the basis of peer-reviewed project proposals against a set of objectives by government.
Funding formula based on the number of employees or the number of students enrolled.	Funding formula based on the output performance indicators (e.g. : Number of student graduates per years, ranking between HEIs)

Review of Performance Based Funding (PBF) Mechanisms

PBF mechanism or some other prominent scholars namely this types of mechanism as, performance-based budgeting (PBB) and performance-based school funding (PBSF) grew in attractiveness in the United States (US) at some point in the late 1990s as US government looked to financial fund for the limited resources they had to finish off (King & Mathers, 1997; Young, 2003). A lot of countries used PBF as a technique to reward HEIs or in abroad organizations for their capability to produce the desired educational outcome and result as well as increasing efficiency in various areas of student performance (Lucas & Spitler, 1999).

PBF authorized the allocation of a public funding amongst HEIs that demonstrated particular standards indicators performance. Changes brought about by the educational reforms towards increased accountability provide the impetus to numerous countries implementation of PBF mechanism (Zarkesh & Beas, 2004). Prior research and studies illustrate that when an organization or institutions does not achieve an optimum performance with a PBF mechanism, it is frequently due to the actuality that the mechanism did not compatible with the organization or the organization is not implement the PBF all

over the whole organization (Dinesh & Palmer, 1998). The size of the HE sector matters as well for the development and implementation of PBF systems (Barr, 2004).

PBF involves public funds and goods to provide an output oriented system that is seen by policy makers as a way to increase efficiency and improve public accountability, apart from the reduction of dependence on a system based on input (Estermann, et al., 2013). It is important that countries which have limited funding resources have to ensure that, the money have been invested in the appointed of development public HE sector are used efficiently and effectively to enhance countries productivity, improve the competitiveness of human resources and create a knowledge society (Auranen & Nieminen, 2010).

The relationship between PBF and public fund is tied directly and tightly to the performance of HEIs on one or more performance indicators that have been set (Thorn et al., 2004). In spite of that, PBF increases the differentiation in HE sector (Lewis, 2009). Salmi and Hauptman (2006b) state that provisions and allocations based on PBF mechanism are different compared to the mechanisms or approaches adopted previously because most of other mechanisms tend to use

performance indicators that reflect public objectives rather than HEIs needs. They include incentives of HEIs improvement.

PBF aims to support initiatives that could promote the excellence in teaching and research. For instance, New Zealand rewards for excellence in research activities at the national and international level by creating incentives for focusing research in the area of excellence (Roberts, 2006). Under PBF mechanism system, qualitative and quantitative performance indicators used to measure the quality of research or teaching HEIs with the intention to enhance and measure performance and, generally, have access to high quality information that could enhance the student's ability to make decisions about the appropriate courses of study (Johnes & Taylor, 1990).

The allocation of funds between HEIs department (faculties, departments, research teams) on the basis of performance provides increasing of productivity and eventually their overall output performances (Koelman & Venniker, 2001). In the meantime, the HEIs will work according to the Key Performance Indicators target and the budget allocated based on project that justified its outcome (which it will contribute to the positive performance of HEIs).

Components of PBF

In the practice of PBF mechanisms, there are four components of PBF as described below:

i. Performance contracts

Performance contracts are viewed as a technique to ensure that the service provider is responsible for results service (which aimed to improve the performance if HEI to its agreed benchmark and goals between state and education institution). In the agreement of performance contracts regardless of private or nonprofits institutions clearly define and specify what type and level of performance are supposed to be achieved. In the PBF

mechanism, the funding was not based on history trends activities but rather on the guarantee of prospect and future performance, and there were no penalties if performance objectives were not accomplished however all depends on the agreements concluded collectively (Edlin & Schwartz, 2003). Incentives should be provided to enable the institution achieve optimum performance while the penalty is charged for the institutions that fail to meet the objectives, all of this should be clearly stated in the contract for performance (Salmi & Hauptman, 2006a).

ii. Performance Set Aside

The meaning of performance set aside depends on the part of funding that has been separated or reserved for special purpose or extra of performance that leads to the productivity of the educational institutions (Odden & Clune, 1995; Rosenthal et al., 2005). The set aside funding is specified usually between the government and HEIs negotiation method (Ahmad, 2013). According to Salmi and Hauptman (2006a) in their research regarding the innovation of HEIs funding, the countries that used performance set aside in their fund allocation are South Africa and US. This may be a "bonus" fund or a separate portion of a fixed fund allocation (Harnisch, 2011). HEIs compete in order to obtain funds from this set aside account.

iii. Competitive funding

Competitive funding is a method which refers to performance historical trends and the HEI that shows a good performance in the past will be chosen to obtain the funds. In particular, increased competition develops stress towards increased size, economies of scale, professional management, institutions sophistication, and the ability to access funds to perform strategic choice and competitive action for the educational learning (Thomas, 2007). Mok (2003) stated that Hong Kong used competitive funding for the intention to improve the education quality services and encourage responsibility in the administration of public funds.

iv. Payment by Result (PbR)

Payment by results is a category of public fund method where funds are dependent on the result performance. "Open public services: white paper By Great Britain: Cabinet Office: (2011) stated that, PbR is being dynamically suggested by numerous governments for more effective implementation a way to achieve increased value for money by aligning incentives to essential result". PbR also can be review as a payment in which performer fund depend on how well achieved targeted performance.

The Advantages and Disadvantages of PBF

PBF became known as a system of funding to modify, complement or replace other

funding mechanisms to encourage and respond to policy concerns more effectively. PBF aims to support initiatives that serve to encourage the quality of teaching, learning and research. For instance, the rewards for research activities of excellence at the national and international levels create incentives for New Zealand higher education organization to concentrate their research in the area of excellence given that the culture of high quality research supports and enhances teaching and learning environment, particularly in postgraduate level (Thrupp, 2010). The table below indicates the summary of advantages and disadvantages of PBF system.

Table 4: The Advantages and Disadvantages of PBF System

Advantages	Disadvantages
<ul style="list-style-type: none"> Performance orientation and establishing performance incentives. 	<ul style="list-style-type: none"> Limited resources and fund cause restricted opportunities for HEIs to grow and develop.
<ul style="list-style-type: none"> Improves planning and provides guidance for HEIs to steer the institutions' value chain process. 	<ul style="list-style-type: none"> Increases the administrative workload and bureaucracy.
<ul style="list-style-type: none"> Resources and fund used flexibly. 	<ul style="list-style-type: none"> Problems of measurability and comparison.
<ul style="list-style-type: none"> Improvements and changes in the distribution of resources allocation based on historical information or data. 	<ul style="list-style-type: none"> Reduced flexibility for allocation of funds makes it difficult for development because of the scare of budgetary basic.
<ul style="list-style-type: none"> Pressure towards change and identification of potential incentives for rationalization and economy 	<ul style="list-style-type: none"> Lack of coordination and cooperation between HEIs due to the competition.
<ul style="list-style-type: none"> Increase transparency and understanding of Fund allocation system. 	<ul style="list-style-type: none"> Potentially neglecting research but emphasized on teaching and learning environment in the HEIs.
<ul style="list-style-type: none"> Increase competition between HEIs. 	<ul style="list-style-type: none"> Mistreatment of small HEIs.
<ul style="list-style-type: none"> Encourage cooperation between HEIs and industry, business and other institutions. 	<ul style="list-style-type: none"> Measures performance based on the indicators/ratio :- <ul style="list-style-type: none"> Incomplete picture of performance. Loss of direction.
<ul style="list-style-type: none"> Increased autonomy. 	<ul style="list-style-type: none"> Loss of autonomy through increased dependence from internal principals or sponsors

Advantages	Disadvantages
<ul style="list-style-type: none"> Improved liquidity, viability and cost consciousness. 	(third parties) . <ul style="list-style-type: none"> Too constricted strategic profiles and areas

Conclusion

Commitment from HEIs and combination participation from all committees include staff and academia of HEIs that are also vital so as to ensure a successful development and implementation process for PBF systems (Battersby, 2009).

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