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 the HEIs administration have 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 experience a change in the context of increasing competition for public funds because of pressure from the community to enhance quality of education.

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

1. 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) that adopted by the developed and developing countries. Next, the paper focuses on the negotiation funding system and the various components and techniques of Performance Based Funding (PBF) mechanisms.

2. Funding System

A funding system can be defined as a source of money that 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 the HEIs administration have 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 act of providing resources for examples federal government setting aside money to build a new sport centre or a university setting aside 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 for new types of audit
system, evaluation and reporting of financial system transparent and disclose the results and performance of public sector organization (Pollitt, 2004). Improvements in public funding system involve a shift from provision of incremental development of public budgets to performance criteria and have been interpreted as an effort on the component of the public funding to use more systematic and position 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 differentiate 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 have diverging impact, but it seem contributed to advantage and disadvantage to the policy makers who are liberated to choose not only the basis of funding but additionally unwanted effect as well (Frølich et al., 2010).

2.1 Negotiation Funding System

Negotiation funding system is one of the most common methods used. It also the first step for many other alternative dispute resolution procedures. Successful negotiations usually result in some sort of exchange or gain advantages in outcomes of collective advantages. Exchanges may be significant examples 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 typically are 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

<table>
<thead>
<tr>
<th>Line-item Budgets</th>
<th>Block Grants</th>
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</thead>
<tbody>
<tr>
<td>Provide a fairly rigid restriction on how HEIs can spend money they receive from the government or other public funds.</td>
<td>Give institutions more flexibility and autonomy compare to line-items to determine how public funds are spent.</td>
</tr>
<tr>
<td>Little dispute among departments within the organizations</td>
<td>Non-discretionary budget allocation to specific school determined by formula based on objective parameters such as number of students, type of institutions, etc.</td>
</tr>
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</table>
2.2 Performance Based Funding (PBF)

Evolution of allocation funds mechanisms for public expenditure and investment in a number of countries, from the traditional type of negotiations funding between the government and HEIs to increasingly 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 output or activities result been 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 sufficient and able 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 United Kingdom (UK), Australia and Denmark governments allocate public funds for higher education based on performance evaluations, normally have specified indicators (Burke, 2002; Herbst, 2007; Liefner, 2003).

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

To establish a funding and budgeting system that transparent using PBF mechanism, 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 country use the statistics of graduates, the amount of research grant funds, and research and journals publications, as type of performance indicators (Cuenin,
The majority HEIs worldwide have already adopted PBF mechanisms that rely on performance indicators (Jongbloed & Vossensteyn, 2001).

Table 2: Performance Indicators from Previous Studies

<table>
<thead>
<tr>
<th>No</th>
<th>Author(s) and (year)</th>
<th>Research Title</th>
<th>Performance Indicators (PIs)</th>
</tr>
</thead>
</table>
| 1. | Doug and Gomes (2007) | Performance Indicators and University Distance Education Providers | • 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 | • 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 | • 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.) |
Kaufman (1988) disagree that performance indicators must correlated to specific measurement of processes or activities because like a connection which is necessary to decide whether a process or activities is perform efficiently. Performance indicators (PIs) are so dependent variables and can be different based on the comprehensive purpose they are intended to provide.

2.3 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 experience a change in the context of increasing competition for public funds because of pressure from the community to enhance quality of education (Estermann et al., 2013). Government and HEIs, through 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 for instance, precedent allocation hence there are two types of negotiations funding method exist which are line-item budgeting and block grant (Melinio & Mezouaghi, 2010).

The beginning of each funds negotiation process is when the HEIs submitted proposal to the government based on the provisions of the activities of their institutions (Jongbloed, 2001). Usually negotiations development funds request continues between governments official 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).

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 government or policy makers under threat of funds reduction consequently, it is difficult to interpret whether there is or not political elements that does not fit with the internal governance and development of HEIs (Zusman, 2005).

The advantages of negotiations funding mechanism, the methods is relatively simple, lack of ambiguity and can easily control expenditure based on a comparison to previous years in spite of widely used, however it still have limitations and creates problem to HEIs one of which is line-item budget do not provide information on the financial flow used and does not provide information efficiency and effectivenes of program (WorldBank, 1998). On the other hand, the extent to which HEIs capability to allocate funds according to the needs of the importance of their activities or 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 fund for HEIs for the reason that there is no system in place that ensure the courses of HEIs offer meet the needs of the local labour market therefore restructuring fund distribution method through performance management emphasizing (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)

2.4 Review of Performance Based Funding (PBF) Mechanisms

PBF mechanism or some of scholars namely the 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 country 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 increase efficiency in various areas of student performance (Lucas & Spitler, 1999).

PBF authorized for the allocation of a public funding to 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). From prior research and studies illustrate that when an organization or institutions does not achieve a 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 did not implement the PBF all over the whole organization (Dinesh & Palmer, 1998). As well as, the size of the HE sector matters for the development and implementation of PBF systems (Barr, 2004).

PBF involving public funds and goods to provides 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 to ensure the money invested in the appointed of development of public HE sector are used efficiently and effectively to enhance countries productivity, improve the competitiveness of human resources and creating a knowledge society (Auranen & Nieminen, 2010).

The relationship between PBF and public fund tied directly and tight at the same time to the performance of HEIs on one or more performance indicators that have been set (Thorn et al., 2004). In spite of that, PBF increase the differentiation in HE sector (Lewis, 2009). Salmi and Hauptman (2006b) state provisions and allocations based on PBF mechanism is different compare to the mechanisms or approach adopted previously because most of other
mechanisms tend to use performance indicators that reflect public objectives rather than HEIs needs. They include incentives HEIs improvement.

PBF aims to support initiatives that could promote the excellence in teaching and research. For instance in New Zealand rewards for excellence in research activities at national and international level to create incentives for to focus their 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 enhancing and measuring performance and for generally, access to high quality information that could enhance student’s ability to make decisions about appropriate courses of study (Johnes & Taylor, 1990).

Allocation of funds between HEIs department (faculties, departments, research teams) on the basic of performance provide 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 budget allocated based on project that justified.

2.4.1 Components of PBF

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

i. Performance contracts
Performance contracts are viewed as a technique to ensure that the service provider is responsible for results service. In the agreement of performance contracts regardless with a private or nonprofits institutions clearly defined and specify what type and level of performance supposed to be achieved. In the PBF mechanism, the funding was not based on history trends activities but rather on 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 to achieve optimum performance while the penalty 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 asides depends on the part of funding that have been separated or reserved for special purpose or extra of performance (Odden & Clune, 1995; Rosenthal et al., 2005). The set aside funding is specified usually between government and HEIs negotiation method (Ahmad, 2013). According to Salmi and Hauptman (2006a) in their research regarding innovation of HEIs funding, the country 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 a method which refers to performance historical trends and the HEIs that shows a good performance in the past will be chosen to obtain the funds. In particular, increased competition develop stress towards increased size, economies of scale, professional management, institutions sophistication, and the ability to access funds to perform (Thomas, 2007). Mok (2003) stated that Hong Kong used competitive funding for
the intention is to improve the education quality services and encourage responsibility in administration of public funds.

**iv. Payment by Result (PbR)**

Payment by results is 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.

**2.5. The Advantages and Disadvantages of PBF**

PBF become 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 quality of teaching, learning and research. For instance, the rewards for research activities at national and level of excellence create incentives for New Zealand higher education organization to concentrate their research in the area of excellence given that culture of high quality research support and enhance teaching and learning environment, particularly in postgraduate level (Thrupp, 2010). Table below indicated the summary of advantages and disadvantages of PBF system.

**Table 4: The Advantages and Disadvantages of PBF System**

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>• Performance orientation and establishing performance incentives.</td>
<td>• Limited resources and fund cause restricted opportunities for HEIs to grow and develop.</td>
</tr>
<tr>
<td>• Improve planning and provide guidance for HEIs to steer the institutions value chain process.</td>
<td>• Increase the administrative workload and bureaucracy.</td>
</tr>
<tr>
<td>• Resources and fund used flexibly.</td>
<td>• Problems of measurability and comparison.</td>
</tr>
<tr>
<td>• Improvements and changes in the distribution of resources allocation based on historical information or data.</td>
<td>• Reduced flexibility for allocation of funds make it difficult for development because scare of budgetary basic.</td>
</tr>
<tr>
<td>• Pressure towards change and identification of potential incentives for rationalization and economy</td>
<td>• Lack of coordination and cooperation between HEIs due to the competition.</td>
</tr>
<tr>
<td>• Increase transparency and understanding of Fund allocation system.</td>
<td>• Potentially neglecting research but emphasized on teaching.</td>
</tr>
<tr>
<td>• Increase competition between HEIs.</td>
<td>• Mistreatment to small HEIs.</td>
</tr>
</tbody>
</table>
| • Encourage cooperation between HEIS and industry, business and other institutions. | • Measure performance based on the indicators/ratio :-
  • Incomplete picture of performance.                                      |
Advantages | Disadvantages
---|---
• Increased autonomy. | • Loss of autonomy through increased dependence from internal principals or sponsors (third parties).
• Improved liquidity, viability and cost consciousness. | • Too constricted strategic profiles and areas

3. Conclusion

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

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