

## Performance Based Funding Mechanisms: The Applicability Study in the Context of Malaysian Public Universities

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**Abstract:** This research aims to investigate the applicability of Performance Based Funding (PBF) mechanisms for Malaysian public universities. The implementation of PBF mechanisms has recently become a hot topic in the education sector worldwide which also fetches high rise of interest for researchers and policymakers to work on it. However, there are almost none of the studies have discussed about the applicability of PBF in Malaysia. This study aims to investigate the applicability of PBF mechanisms in the Malaysian context through Malaysian public universities perspective. In this study, the applicability of PBF mechanisms will be discussed in the context of agency theory. Agency theory has been clarified to use for studying the reactions of public universities to funding reform.

**Key words:** Performance based funding, higher education, funding, studying, applicability

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### INTRODUCTION

Performance Based Funding (PBF) is a system based on allocating a portion of education budgets relative to specific performance measures like course completion, credit attainment and degree completion, instead of allocating funding according to enrolment entirely. PBF can be divided into performance contract, performance set aside, competitive funds and payment for results (Ahmad and Farley, 2014). Although, PBF becomes very prevalent and has been implemented in developed countries since decades ago, there is limited study on the implementation of PBF mechanisms in developing countries. Furthermore, the wide degree of different types of PBF model applied in others countries implies that Malaysia shall have own PBF model which is applicable to Malaysia's political, economic and higher education system (Schiller and Liefner, 2007; Ahmad and Farley, 2014).

This research aims to investigate the applicability of PBF mechanisms for Malaysian public universities as described in National Higher Education Action Plan 2007-2010, Tenth Malaysian Plan, 2011-2015, Eleventh Malaysian Plan 2016-2020 and Malaysian Education Blueprint 2015-2025 (Higher Education) and recommended by World Bank/EPU, MoHE, EPU, EPU and MoE. Agency theory is applied in this research as a conceptual framework to describe and clarify the relationship between "principal" and "agents" where

government is the principal and public universities are the agents. Agency theory illustrates the complex relationships emerging between parties which assume principals and agents perform realistically and uses implementing plan that has been agreed to exploit mutual profit. This research may contribute to the knowledge and benefits of applicability of PBF mechanisms towards Malaysian public universities.

**Literature review:** The higher education in Malaysia started to form with the establishment of Universiti Malaya in 1962 (Ahmad and Farley, 2014) and until today, Malaysia has expanded to around 20 public universities. The operation of the public universities is mainly dependent on the funding given from the government which is similar as in other countries (Ahmad and Farley, 2013). There is almost 90% of the funding in public universities are funded by the government while only 10% is generated from the student's tuition fees (Lee, 2000; Ahmad *et al.*, 2013).

The current competitive environment has showed that traditional mode of funding is inappropriately corresponding to the rapid growth of higher education which therefore an improved financing model is recommended by World Bank/EPU. Since 2007, the extensive reformation of higher education system has prompted the introduction of PBF mechanisms to seek a better funding mechanism in Malaysian public universities. The issues of PBF mechanisms has been

introduced and highlighted in the National Higher Education Action Plan 2007-2010, Tenth Malaysian Plan, 2011-2015, Eleventh Malaysian Plan 2016-2020 and Malaysian Education Blueprint 2015-2025 (Higher Education).

Ahmad and Farley (2013) reported that the implementation of PBF could help government to save up to 30% of the operating budget of public universities. Meanwhile, Jongbloed and Vossensteyn (2001) stated that market oriented mechanisms which using production, efficiency and performance indicators measured techniques have obtained a high relationship with the appropriate method of financing in the higher education industry.

Referring to Tenth Malaysian Plan (2011-2015), Malaysia intends to implement PBF for public universities based on two main component namely fixed and variable. The fixed components are made up of salary of faculties' members and cost of utilities whereas the variables components are made up of intellectual development in R&D and student co-curricular activities. Nevertheless, only variable components are linked to the Rating System for Malaysian Higher Education Institutions (SETARA) (Ahmad and Farley, 2013). On top of these, the block grants given to universities will be reduced and the portion will be replaced by the PBF as shown in Fig. 1.

PBF is recently emerged as a popular funding approach. PBF is a policy solution answering for highly transparency and accountability of public funds (Friedel *et al.*, 2013). The funding allocated via the PBF mechanisms is based on the universities' performance in the previous period and the formula to calculate the amount of funding is dependent on the performance indicators such as the numbers of student graduated (Orr, 2005). The used of PBF mechanisms is targeted to bring a great impact to universities in the form of finance method, increase the awareness of institution in the government preferences and their own performance as well as increase competition between the institutions.

The implementation of PBF mechanisms has recently become a hot topic in the education sector worldwide which also fetches high rise of interest for researchers and policymakers to work on it. However, there are almost none of the studies have discussed about the applicability of PBF in Malaysia. This study aims to investigate the applicability of PBF mechanisms in the Malaysian context through Malaysian public universities perspective.

**Problem statement:** The cost in managing higher education has increased dramatically lately. Doubtless, public universities hold the responsibilities to maximise

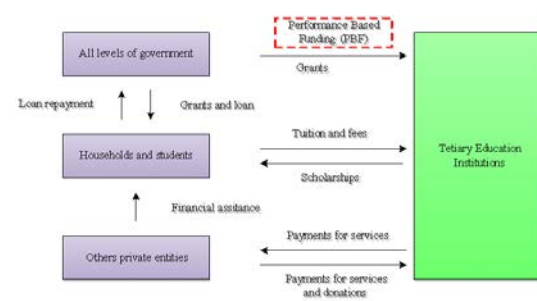


Fig. 1: Funding resources flows to and from tertiary education institutions

the institution performance as well as the value for the money. Figure 2 shows the Universitas 21 (U21) report for the Ranking of National Higher Education System among 50 countries in year 2014 based on the four main areas of resources, environment, connectivity and output according to their higher education system. Malaysia's higher education was found to be ranked at 28th out of the 50th countries. Nevertheless, the institution output was only ranked at 44th despite the resources committed by the government was ranked at 12th. These result revealed that the performance of Malaysian higher education is out of proportion with the money invested.

Other than that, a report published by World Bank/EPU has identified that the traditional method of funding is no longer fit into the current competitive environment. The traditional funding method has been pointed out that it does not show significant links between the amount of funding given to universities and universities' performance. In others words, the funding does not allocate in accordance with the universities actual performances. Following that, it ended up with a less competitive phenomenon among the universities (Liefner, 2003).

In order to stimulate Malaysian public universities to be more competitive and meanwhile to increase the accountability and transparency in spending public funds, the implementation of PBF has been recommended by the World Bank/EPU. Furthermore, PBF is also highlighted in the Malaysian government policy along with the autonomy that would give to the eligible universities. The autonomy is given in four designated areas namely, financial and wealth creation, governance institutions, human resources and academic management and admission of students (Ahmad *et al.*, 2013).

PBF shows a high evaluation especially in developed country. Although, there is a lot of empirical evidence that shows the successfulness of implementing PBF in developed countries, the previous research available for

Rank out of 50 countries					
	1	2	3	4	
	RESOURCES	ENVIRONMENT	CONNECTIVITY	OUTPUT	OVERALL
	<b>Malaysia</b>	<b>12</b>	<b>26</b>	<b>35</b>	<b>44</b>
					<b>28</b>
Asian Neighbours	Singapore	9	11	5	19
	Thailand	47	30	30	47
	Indonesia	50	37	25	50
	Hong Kong	19	4	7	23
	South Korea	18	39	32	18
Global Benchmarks	USA	4	3	15	1
	UK	21	16	3	2
	Australia	16	8	8	6
	<b>Average</b>	score of the four categories			
	<b>TYPE OF METRICS USED</b>	Government expenditure, investments, R&D	Qualitative assessment of policy and regulatory environment	<ul style="list-style-type: none"> <li>Collaboration globally and with industry</li> <li>International student enrolment</li> </ul>	<ul style="list-style-type: none"> <li>Research output</li> <li>Institution rankings</li> <li>Enrolment</li> <li>Employability</li> </ul>

U21 Report: "28<sup>th</sup> Rank is expected for Malaysia's income level".

Examples for benchmarking

Fig. 2: Annual report by universitas 21 (U21)

implementing of PBF in developing countries is scarce. On top of that, the studies discussed about the applicability of PBF mechanisms in developing countries are also found to be limited.

Kaullychurn found that there are altogether four vital component which consist of government policy and outcome, level of understanding in PBF, government objective and drivers of PBF have been identified could contribute to the applicability of PBF mechanisms in a country. Simultaneously, the critical elements which consist of purpose, performance indicators, success criteria, indicator weights, allocation methods and funding levels are also important to the establishment of PBF as reported by Serban.

Besides, Ahmad *et al.* (2012) suggested that the crucial keys to success a PBF mechanism are to keep the PBF simple, interact with stakeholders to develop understanding, leave space for error, learn from those who have already implemented the system and construct specify own methods. The success of a PBF mechanism is also dependent on the support and commitment from all the university communities and stakeholders prior to the implementation.

This study attempts to investigate the applicability of PBF mechanisms in Malaysian public universities according to Malaysia's political, economic and education system. The results of this study are expected to give an understanding on the applicability of PBF mechanisms in Malaysia higher education system.

**The conceptual framework:** A conceptual framework has been developed to study the applicability of PBF mechanisms in Malaysian public universities following the findings of Kaullychurn (Fig. 3).

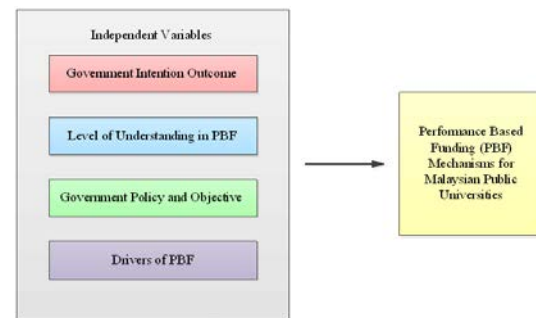


Fig. 3: Conceptual framework of the study

A conceptual framework has been developed to study the applicability of PBF mechanisms in Malaysian public universities following the findings of Kaullychurn. Four independent variables namely government policy and outcome, level of understanding in PBF, government objective and drivers of PBF are considered to be the underlying conditions that affect the applicability of PBF mechanisms for Malaysian public universities.

## MATERIALS AND METHODS

In this study, the applicability of PBF mechanisms will be discussed in the context of agency theory. Agency theory has been clarified to use for studying the reactions of public universities to funding reform (Schiller and Liefner, 2007), the relationship between the principal (government) and agent (universities) and the problems come across in the terminology of goal conflicts and information asymmetries (Ahmad *et al.*, 2012b). Furthermore, Kivisto (2005) has also emphasised that the agency theory can be used to examine the economics

characteristics of universities which respect to the behavioural implications for government governance and funding mechanisms.

Agency theory or also known as principal-agent problem or agency dilemma (Ross, 1973; Schulze *et al.*, 2003; Thomas and Worrall, 1990) is an agreement interaction between a principal and an agent. The agent is the representative to work on behalf of principal (Ahmad *et al.*, 2013; Kivisto, 2005; Lane, 2011; Saylor, 2005; Van Slyke, 2007). The “principal” in this research is Malaysian government while Malaysian public universities act as “agent”. However, information asymmetries and goal conflicts usually arise when the principal and agent have different points of view and goals and also the agents have better information about their capacity and activities than the principal (Kivisto, 2008). Hence, in order to improve the accountability and transparency in managing public funds and meanwhile to reduce the agency problems, principal is recommended to implement PBF mechanisms as an outcome based contract to track the universities’ performance as well as to develop a series of monitoring or controlling approach (Auranen and Nieminen, 2010; Ahmad *et al.*, 2012a).

Although a proper control model can affect the relationship between the principal and the agents in conjunction with the universities’ working performance (Yu and To, 2011), the implementation of monitoring systems is essential to supervise the universities’ administration and operation which to make sure that the universities always parallel with the government agenda (Alexander, 2000; Ahmad *et al.*, 2012). Apart from monitoring and controlling method, the government could establish an incentive system for example a performance based initiatives to enhance the university’s motivation and to reduce the conflicts of interest (Ahmad *et al.*, 2013).

**Research questions:** The lack of research and information for the applicability of PBF mechanisms in developing countries, especially Malaysia has emerged the needs to conduct a comprehensive study which belongs in the context of Malaysian higher education. With the aim to accomplish the objectives, the following research questions are designed:

- What are the government intention outcomes on the implementation of PBF mechanism at Malaysian public universities?
- What are the levels of understanding in the PBF mechanism across the Malaysian public universities?

- Does government policy and objective support the implementation of PBF mechanism at Malaysian public universities?
- What are the desirability drivers in the implementation of PBF mechanism at Malaysian public universities?
- Does the results for RQs 1-4 vary across the Malaysian public universities sectors (RAUs, FUs and CUs)?

**Research objectives:** Based on the research problems highlighted, five primary research objectives were formulated as follow:

- To determine the government intention outcomes on the implementation of PBF mechanism at Malaysian public universities
- To investigate the levels of understanding in the PBF mechanism across the Malaysian public universities
- To analyse whether the government policy and objective support the implementation of PBF mechanism at Malaysian public universities
- To analyse the desirability drivers in the implementation of PBF mechanism at Malaysian public universities
- To examine the differences results outline in ROs 1-4 across the different types of Malaysian public universities sectors (RAUs, FUs and CUs)

**Research scope:** The scope of this study is only focused on public universities in Malaysia. Referring to MoHE, Malaysian public universities have been categorised into three groups since 2007. Currently, there are around twenty public universities in Malaysia while five of them have been classified as research/apex universities, four of them have been classified as Comprehensive Universities and the rest are classified as Focused Universities. As a result, each of the categories has its own exclusive focus/niche area and with different characteristics as presented in Table 1.

All of the Malaysian public universities have their own KPIs and are constantly monitored by MoHE through MyRA. Non-research universities (FUs and CUs) have to work hard to enable them obtains the status of RU. The assessment instruments for RU status are made through an on-line system. The categorisations of Malaysian public universities are now used as a platform to determine the funding that best fits their core functions. Due to the privilege and prestige attached to an RU-status university, HEIs compete to gain accreditation as an RU (Ahmad *et al.*, 2012).

Table 1: The categorisation of public universities in Malaysia

Research/Apex universities	Characteristics
Universiti Malaya (UM)	Field of study: Focus is on research
Universiti Sains Malaysia (USM)	Competitive entries
Universiti Kebangsaan Malaysia (UKM)	Quality lecturers
Universiti Putra Malaysia (UPM)	Ratio of undergraduates to postgraduates is 50:50
Universiti Teknologi Malaysia (UTM)	
<b>Comprehensive Universities</b>	
Universiti Teknologi MARA (UiTM)	Various fields of study
Universiti Islam Antarabangsa Malaysia (UIA)	Competitive entries
Universiti Malaysia Sabah (UMS)	Quality lecturers
Universiti Malaysia Sarawak (UNIMAS)	Ratio of undergraduates to postgraduates is 70:30
<b>Focused universities</b>	
Universiti Utara Malaysia (UUM)	Fields of study: Focus is on study
Universiti Pendidikan Sultan Idris (UPSI)	Competitive entries
Universiti Tun Hussein Onn Malaysia (UTHM)	Quality lecturers
Universiti Teknikal Malaysia Melaka (UTeM)	Ratio of undergraduates to postgraduates is 70:30
Universiti Malaysia Perlis (UniMAP)	
Universiti Malaysia Terengganu (UMT)	
Universiti Malaysia Pahang (UMP)	
Universiti Sains Islam Malaysia (USIM)	
Universiti Sultan Zainal Abidin (UniSZA)	
Universiti Malaysia Kelantan (UMK)	
Universiti Pertahanan Nasional Malaysia (UPNM)	
MoE	

## RESULTS AND DISCUSSION

**Research significance:** The main purpose of this study is to investigate the applicability of PBF mechanisms at Malaysian public universities. By filling up the research gap, it is expected that this study can serve and provide Malaysian government with a valuable understanding regarding public universities' views on the implementation of PBF in Malaysian public universities. This study is the first attempt to assess the applicability of the implementation of PBF at Malaysian public universities which may serve as a reference or guideline to the Federal Government in developing PBF and applying in the context of Malaysian higher education funding policy. Besides, this study also can be referred by other countries, especially developing countries.

Secondly, this research rises up the point of view of the public universities towards the applicability of PBF in Malaysian public universities and it develops as a channel for the public universities to express their perception on this new funding mechanism. Furthermore, research of PBF may possibly be a guideline for institutions to improve the allocation of their limited fund toward the completion of government interest and improve the performance due to the increasing competitiveness among the universities. Consequently, this research can increase the awareness and enhance the level of understanding towards the PBF mechanisms among Malaysian public universities.

Finally, apart from the applicability of the PBF mechanisms, agency theory is another highlight in this study. Agency theory is being adopted in this study due to it may not only consider as the added value of the previous research but also as a contributor to the academic knowledge. The findings of this research will contribute to knowledge related to the reactions of public universities to funding reform (Schiller and Liefner, 2007), the relationship between the principal (Malaysian government) and agents (public funded universities) and the problems come across in the terminology of goal conflicts and information asymmetries (Ahmad *et al.*, 2012). In short, this theory could act as a valuable tool in higher education research particularly in examining and developing an understanding of the relationship between the government and public funded universities as well as explain the role of funding in the relationship (Ahmad and Farley, 2013).

## CONCLUSION

This study discussed the overview of the study that on the applicability of PBF mechanisms implementation at Malaysian public universities. Overall, this study provided an overall guidance to the pattern and direction of the study. Studies and research will be geared towards the attainment of the objectives using the framework and the rules mentioned and discussed in this study. The research will help in certain aspect, especially as a reference in helping policymakers to make a better policy, drive Malaysia towards a higher quality of education and adaption in competitive environment.

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