



## FEDERAL GOVERNMENT FUNDING REFORMS: ISSUES AND CHALLENGES FACING MALAYSIAN PUBLIC UNIVERSITIES

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### ABSTRACT

*The purpose of this paper is to explore the shift in funding reforms currently facing at Malaysian public universities focusing on issues and challenges experienced by the Focused Universities in particular. Previous research has shown that shifts in funding mechanisms to public universities are more likely to result in behavioural changes at such institutions. Under the National Higher Education Strategic Plan beyond 2020, the Federal Government has launched a strategic plan of government objectives for public universities in order for them to become more dynamic, competitive and productive. Public universities must follow these plans through closely coordinated actions aimed to achieve specific strategic outcomes in teaching and research. It is the most comprehensive plan launched to date, and intends to transform the Malaysian higher education system. It aims to help these institutions achieve world class standards and make Malaysia a hub for higher education in Southeast Asia. Indeed, the government has also introduced a system of categorisations of the Malaysian public universities including research university, comprehensive university, and focused university. These categories determine the area and level of fund allocation according to specialisation of the university and the extent of its operations. Moreover, this paper will discuss the strategies needed for the focused universities in order to enhance educational research and teaching to align with the Federal Government objectives.*

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**Keywords:** Funding, Strategic planning, Public universities, Focused university.

### INTRODUCTION

Governments in most developing countries provide strong funding capacities to their Higher Education Institutions (HEIs). However, Schiller and Liefner (2006) have argued that although similarities exist in the HEI funding of developed countries, universities in developing countries still experience extreme politicisation of their environments (Jongbloed, 2000b). For this reason,

there are different approaches to allocations of funding in developing countries. For example, some governments in developing countries use negotiation-based approaches, while others use performance-based approaches or formula-based allocations to determine funding allocations.

Schiller and Liefner (2006) point out that higher education funding reforms and their impacts on public universities are expected to change universities' behaviours. They found that Agency Theory can be used to study reactions to funding reform in developing countries where government is the principal and HEIs the agent. This theory is used to describe the motivation of agents to work to goals that are set by the principal. In the context of this theory, activities and risks in achievement need to be defined before the goals can be implemented to avoid risks of unsuccessful projects being relatively high. Following this model, less motivated agents must work harder to achieve high performances. This paper discussed the results obtained from the main thesis 'Impact of Government Funding Reforms on the Strategic Planning of Malaysian Public Universities' focuses on issues and challenges experienced by the Focused Universities (FUs) in particular. It also discusses two other types of Malaysian public universities, Research/Apex Universities (RAUs) and Comprehensive Universities (CUs).

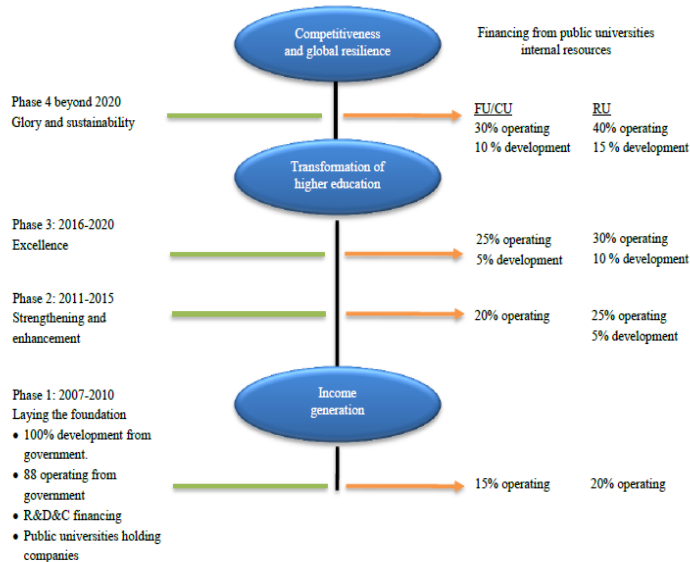
## LITERATURE REVIEW

Research into strategic planning in public universities has established that a strong strategic plan is required in order to compete in the global environment, particularly during government funding reforms (Rolfe, 2001; Strehl *et al.*, 2007a; Kettunen, 2008). Schiller and Liefner (2006) point out that funding reforms consist of government budget cuts, Performance Based Funding (PBF) and income diversification. Thus, in context of the Malaysian higher education system, the Federal Government has introduced and implemented funding reforms aimed at to increasing the accountability and transparency of managing public money.

In 2007 the Ministry of Higher Education (MoHE) announced two documents – the National Higher Education Strategic Plan beyond 2020 and National Higher Education Action Plan 2007-2010 (Ministry of Higher Education, 2007a; Ministry of Higher Education, 2007b). These blueprints focused on the intention of fostering the development of academic and institutional excellence in order to compete in the competitive global environment. Indeed, the strategic plans initiated by the Federal Government of Malaysia proposed new funding mechanisms that are applicable to all Malaysian public HEIs. However, this study will only focus on public universities in Malaysia. In agreement with Ahmad *et al.* (2008), this mechanism is expected to generate funds from different sources so that the academic quality in teaching, development, equity and efficiency of higher education, can be developed without relying solely on government funding in alignment with national strategy planning (Bank/EPU., 2007). The National Higher Education Strategic Plan beyond 2020 outlines the strategies needed for universities to subsidise their incomes from internal

resources (see Figure 1). Indeed, this strategy is expected to create strategic linkages that help the institutions to be more effective and efficient.

**Fig-1. Income Generation**



**Source:** Adopted from Ministry of Higher Education (2007a)

As well as introducing funding reform, the Federal Government has announced an initiative to implement PBF mechanisms under the Tenth Malaysian Plan, 2011-2015 (Economic Planning Unit, 2010a; Economic Planning Unit, 2010b). As stated in this document, implementation of the system will be based on two fixed and variable components. The fixed components (e.g. salary and cost of utilities) do not vary with performance, and the variable component (e.g. R&D, student co-curricular activities) is based on the Rating System for Malaysian Higher Education Institutions (SETARA). The purpose of this mechanism is to provide a more transparent funding system to improvement of the quality HEIs, with performance indicators used to measure performances. The Tenth document plan of the Federal Government clearly indicates that with PBF, overall government funding to universities will be reduced (Economic Planning Unit, 2010a).

In response to government strategies, HEIs need to implement their funding policies in alignment with government objectives. As Rowley, (Lujan *et al.*, 1997) suggested, universities need to transform themselves in order to meet the challenges presented by these policies by realigning their organisations with the environment, redesigning themselves to achieve new goals, redefining staff roles and responsibilities, and reengineering their organisational processes. However, such changes require reform before they can be successfully implemented. (Frølich and Klitkou, 2006) have suggested that in order to have positive changes there needs to be cohesion between the national

funding mechanisms and universities' responses. Consequently, the success of implementing new systems requires support from all university communities and stakeholders (Strehl *et al.*, 2007a).

### **Agency Theory**

The assumption that the relationship between the government and HEIs will change when shifts in funding mechanisms are introduced is based on Agency Theory, which has been successfully applied in the discipline of strategic management (Kim and Mahoney, 2005). Agency Theory is appropriate to study the control relationship between government (the Principal) and public universities (the Agents) when it contains the following three elements: (a) tasks which government delegates to a university; (b) resources which government allocates to a university for accomplishment of the tasks; and (c) government has an interest in governing the accomplishment of the tasks. In this context, the theory focuses on the central question of how the Principal can control the Agent in a context of information-asymmetry and goal conflict. Furthermore, Agency Theory needs more empirical research and testing in order to be a more reliable and useful tool in higher education research for analysing and developing an understanding of the relationship between the government and public funded universities (Kivistö, 2005). Therefore, based on previous research (Mace, 1995; Caraça *et al.*, 1998; Layzell, 1998; Liefner, 2003; Schiller and Liefner, 2006; Bonaccorsi and Daraio, 2007; Oyo *et al.*, 2008), a conceptual framework for studying the impact of changes in government funding to Malaysian public universities has been developed. Based on the previous studies that investigate the development, strategies, efficiency and productivity of European HEIs Slipersaeter, cited in (Bonaccorsi and Daraio, 2007), indicators for measuring outcomes are adopted in forming a model suited to study the impact of changes in government funding of Malaysian public universities.

In addition to the agency relationship, there are number of assumptions applicable, however Kivistö (2007) identified the most important assumptions are informational asymmetries and goal conflicts. Here, he defined these two assumptions as follows:

- *Informational asymmetries*

Agent possesses more or better information about the details of individual task assigned to him, his own action, abilities, and preferences compared to principal.

- *Goal conflicts*

As a situation where the principals and agent's desires and interests concerning certain ends are in conflict with each other and that, they would therefore prefer different course of action.

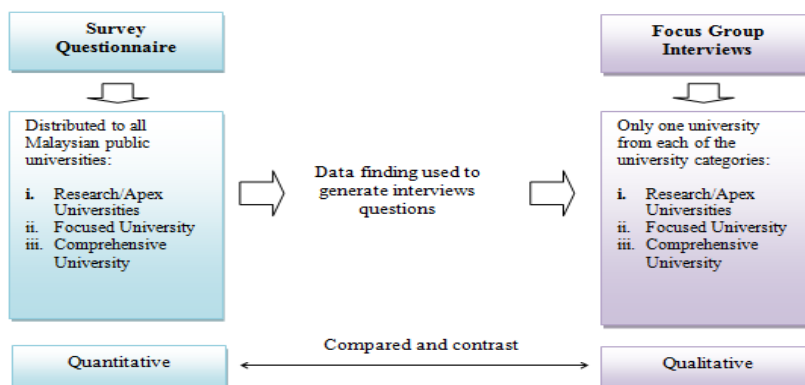
### **METHODOLOGY**

Accordingly, the results from the quantitative survey questionnaires and qualitative focus group interviews are discussed in the following section. Data gathered from the focus group interviews confirmed and enhanced the results obtained from the survey questionnaire. The combination of survey questionnaires and focus group interviews in this study also enabled the triangulation of

quantitative and qualitative data to validate the findings more rigorously. The discussion and conclusion will cover the analysis of the findings ranging from the similarities and differences in the results of the data from both methods as well as a comparison of the findings of the study as a whole with previous literatures to discover similarities or contradictions (Swales, 2004). The population of this study includes all of respondents from the twenty public universities in Malaysia and can be grouped into three categories, namely RAU, FU, and CU (see Figure 2). The targeted population includes only the universities' top management: Vice Chancellors/Rector, Deputy Vice Chancellors/Deputy Rectors, Deans, Directors of Strategic Planning or equivalent, and Heads of Bursar or equivalent. This information forms the basis for a comparative analysis to determine if differences exist in reactions to government funding changes. The second stage in the planning framework is to decide the rationale for choices made to employ a focus group methodology in this study. In order to obtain more in depth information on the impact of changes in government funding at Malaysian public universities, data that could not be gathered from the survey instrument was further investigated using focus group interviews. With these, perceptions of the implementation of new funding changes will be used to strengthen the findings obtained through analysis of the survey instrument. At this point, this method will help the researcher to illustrate the findings from different perspectives before making any comparison and contrast to address the objectives of the study (Morse and Niehaus, 2009).

Both nonparametric and parametric tests have been performed in this study. Both of the statistical tests have the advantages and disadvantages. Nonparametric statistics deal with data that where no assumption can be made about the probability distribution of the data and parametric statistics deal with normality as part of the important assumptions. Nonparametric test also suitable for small samples and unequal variances. However, Norman (2010) points out that the parametric statistics can be used with small sample sizes of unequal variance, and with non-normal distributions, with no fear of “coming to the wrong conclusion”. Nonparametric statistics are used in this study because of two main reasons. Firstly is to confirm the data obtained using parametric statistics, and secondly to apply a test that is robust with respect to the violation of the normality assumption.

Fig-2 Proposed Mixed Methods Research



Specifically, the nonparametric tests performed in this study are: (1) one sample Wilcoxon signed rank test; (2) Multi-sample Wilcoxon signed rank test; and (3) Kruskal-Wallis test. The parametric one sample t-test is used to compare with results from the one sample Wilcoxon signed rank test. Also, the parametric factorial ANOVA gives the results of multivariate analysis that cannot be performed by using the Kruskal-Wallis test. Parametric tests will increase the power of the tests if the normality assumption is true. All these tests are the most common statistical approaches used to evaluate group differences. The results from both parametric and nonparametric tests complete each other. As is common practice in such studies, the standard level of significance used in this study is at the level 0.05.

In addition, the focus group interviews were analysed based on the [Miles and Huberman \(1994\)](#) strategies include: data collection, data reduction, data display, and conclusion. The researcher conducted focus group interviews at four participating public universities. Two of Research/Apex University (RAU) status, and one of Comprehensive University (CU) status and one of Focused University (FU) status were chosen to create a diverse and representative sample of universities in Malaysia. In this study, the presentation of results from Apex university was combined together with the RU group known as Research/Apex Universities (RAUs) to protect the identity of Apex university. The findings reported are based on the four focus group interviews conducted known as Universities A, B, C and D.

## DISCUSSION

This section will discuss results and discussion obtained according to four sub-sections: (1) autonomy; (2) strategic planning; (3) teaching vs research; and (4) government objectives.

### Autonomy

Datuk Seri Mohamed Khaled Nordin announced that UTM as the first public university to be granted full autonomy by the MoHE ([Utusan Malaysia, 2012a](#)) followed by other four universities, namely, USM, UM, UKM and UPM ([Kulasagaran, 2012](#)). Results from interviews indicated that the government envisions this policy of funding changes as providing flexibility to the operation of public universities and improving their autonomy. The participants were also agreed that they have achieved a greater degree of autonomy, which has improved the day-to-day administration, decision-making process and university performance. However, a participant at University C (CU status) pointed out that there must be a right balance between autonomy and accountability. Indeed, participants in the interviews further confirmed that autonomy is required to increase the universities' performances. The participants were agreed that the autonomy which is planned to be implemented by the government should come with accountability and guidance in the form of policies to encourage academic excellence in Malaysian public universities. Therefore, the government decision to create more flexible regulation and rules supports the implementation of autonomy at the public universities.

The autonomy reforms should help to improve the higher education system in Malaysia particularly during the government funding changes. Kallison and Cohen (2009) recommendation on the autonomy reforms approaches might be consider in the guidelines include:

- i. Each individual university must set educational goals that reflect their vision and mission;
- ii. Accountability measures should be made available to public; and
- iii. Greater focus on performance with respect to government goals.

The government needs to pay more attention to the logistical difficulties that new university especially FUs are facing in implementing the government strategic plans. Moreover, it is advised that the government allocate more autonomy to all public universities so that they can better pursue the desired outcomes. Indeed, the autonomy implemented must be followed with the policies that guide the university to behave accordance to the government aspirations. The findings of this study can also be helpful for governments in other countries, especially developing countries, when they are deliberating about the appropriate design of university funding reform that best fit their political, economic and social environment.

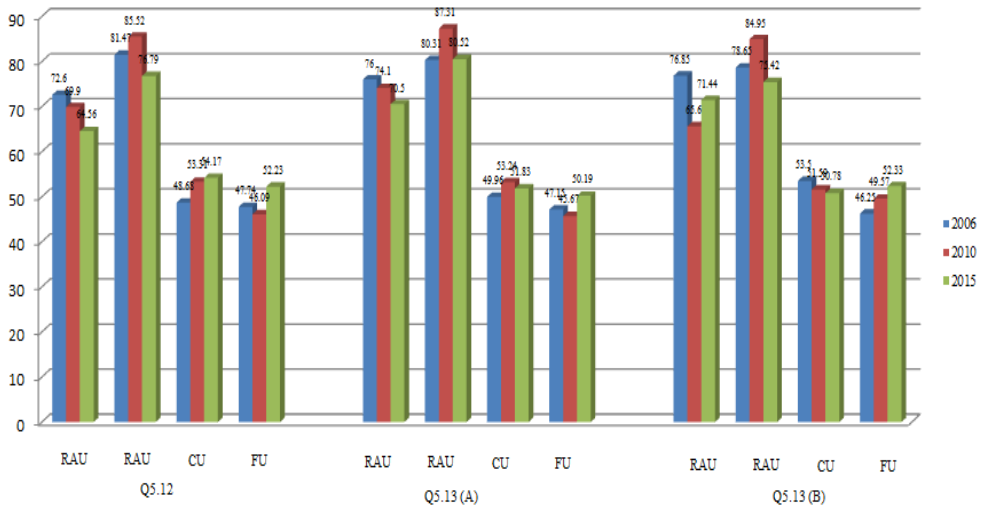
### **Strategic Planning**

Overall, the findings suggested that strategic planning in public universities are intended to align their individual agendas and activities with the government objectives. Here, communication between government and university has improved with the adoption of performance indicator, reporting, and auditing due to better monitoring of the universities' performances with these funding reforms and government strategic plans.

Results from the Kruskal-Wallis test provided evidence that there were statistical significant differences ( $p=0.000$ ) found on the ability of the Malaysian public universities to generate funding from internal resources. In addition to these results, the factorial ANOVA analysis also indicated a statistical significant difference. A post-hoc analysis was commenced to examine the differences according to university group. Based on the results, three items related to strategic planning were found to be significant according to university category from: 2006; 2010; and expected in 2015.

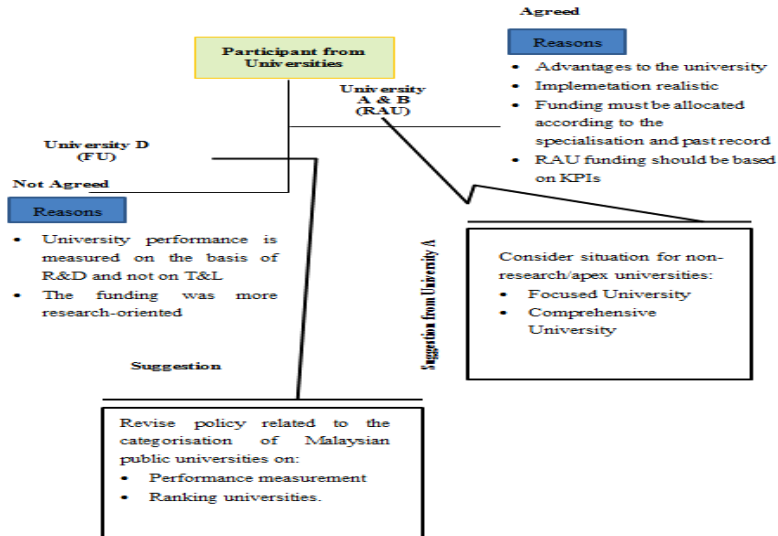
The RAU groups are able to utilise their internal operation and strengths to generate more income compared to FU and CU groups. Furthermore, most RAUs are already established universities compared to those from CUs and FUs. For example, most of the FU groups consist of College Universities that were promoted to full university status. As indicate in Figure 3, the RAU mean rank significantly highest compared to the teaching universities. These results indicated that the RAU will lead the ability to generate income compared to teaching universities.

Fig-3. Results of Kruskal-Wallis Mean Rank Test for Strategic Planning



In addition, the results from the Kruskal-Wallis test suggested that the mean rank for FU and CU groups in the ability to generate income has increased/expected to increase from 2006 up to 2015 (expected outcome) as shown in figure above.

Fig-4. Participants Perception on funding based on the Categorisation of Malaysian Public Universities



The present study has found that the categorisation of Malaysian public universities might be used by the Federal Government as a mechanism to allocate the funding sources that best fit according to the universities' core functions. These arguments are based on results obtained from focus group interviews. The RAUs have the advantage to diversify their funding sources from their core T&L and R&D activities to generate more income and this ability is limited for FUs and CUs. The basis of the FUs and CUs income is mainly come from government and student fees. However, the

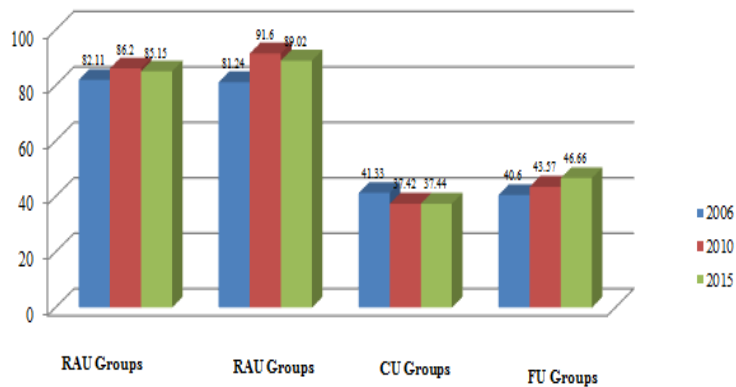


present results show that not all participants in the interviews were agreed with this statement (see Figure 4). This might result from the evaluation system of the universities' performances that currently applies to all types of universities. These factors are due to the fact that the FU and CU groups are still new and the government should have clear policy before wanting to implement this approach.

### Teaching Vs Research

In relation to R&D, findings from the survey questionnaire confirmed that the R&D activities were significantly different according to types of public universities. Results indicated that the RAU groups have contributed to important role in the R&D with the status given as shown in Figure 5 below. The results of Kruskal-Wallis test for R&D mean rank based on composite measure further confirmed the statement.

**Fig-5.** Results of Kruskal-Wallis Test for Research and Development (Mean Rank-Based on Composite Measure)



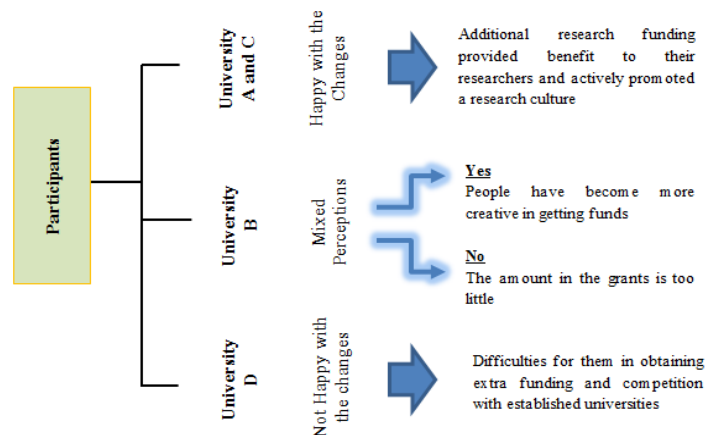
As mentioned before, the RAU status granted to the universities is based on their performances and is being audited on a yearly basis. With the status given, RAUs are granted additional incentives in the form of research funding. If the universities reach targeted KPIs, the RAU status will be continued or else withdrawn. Furthermore, results from focus group interviews further confirmed the findings. Participants from RAU groups stated that the categorisation of public universities has changed the university strategic direction with greater emphasis on R&D in their universities. It is interesting to note that, if not for the categorisation strategy the institutions would maintain the status quo and no transformation would take place in the participants' universities.

Next, this research has demonstrated the overall quality of R&D difference according to the university category. Results from the Kruskal-Wallis test suggested that at least there is one pair of university categories that have different average scores; and post-hoc test analysis undertaken from factorial ANOVA further confirmed that the differences were found to be statistically significant according to university group. Results show that the RAUs are expected to perform better compare

to FU and CU groups with the statistical data proving that there were significant differences between 2006, 2010 and expected in 2015. In addition, the statistical analysis has proven that the number and quality of publication, commercialisation, number of patents generated and R&D collaboration with industry were differences according to the university category. Results from the Kruskal-Wallis test indicated the RAU groups have the higher mean rank compared to FU and CU groups. Indeed, the post-hoc test results from factorial ANOVA suggested that there were significant differences found between RAU and teaching based universities from 2006 up to expected in 2015. Findings from quantitative data supported that the ability of public universities to have R&D collaboration with industries was found to be significantly different according to the university category. In this present study, results show that the RAU groups gain more benefits from the collaboration activities with higher mean rank compared to FU and CU groups. These results were then further supported by the respondents in the focus group interviews. The participants from University C and D argued that location, expertise, funding and lack of facilities create barriers for them to engage in collaboration activities with industries.

Furthermore, with the status of CUs and FUs, the emphasis on R&D activities remains an important priority for these universities. Participants from FU and CU pointed out that the overall universities' performance is measure based on R&D but not in T&L. The rule is still the same whereby these types of universities need to perform in research even when no additional incentives were promised to them. Indeed, these universities need to compete with RAU groups to obtain grants from the government. However, what distinguishes them is that there are no pressures for them in the sense of needing to excel in R&D activities compared to RAU groups. Meanwhile, participants in CU indicted that there are several obstacles in terms of physical and human factors for the university to excel in research.

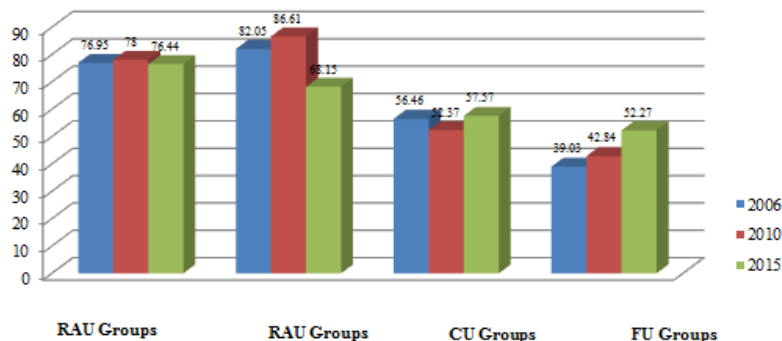
**Fig-6.** Perceptions of Impact Government Funding Reforms for Research and Development



In this study, results from qualitative data suggested that not all participants' universities in the interviews were happy with the government funding reforms in R&D. It is found in this study that

the additional incentives are provided to RAU groups to excel in R&D and these incentives are not available for CUs and FUs. Moreover, the assessments to evaluate these universities' performance are based on the same indicators used by the RAU groups. In practice, FUs and CUs have to compete with RAUs to get research grants from the government. Thus, it is difficult for them to compete with the RAUs because the latter have professors who are capable of producing good research proposals. In addition, the gap between academicians is quite substantial. Therefore it is difficult for FU and CU groups to excel in research activities because most of the lecturers are fresh PhD graduates. Findings from the survey questionnaire revealed that the quality of T&L was partly varied across the university categories. Results from the Kruskal-Wallis test indicated that significant differences were only found in 2010. Meanwhile, the factorial ANOVA results indicated the significant main effect reported in 2006 and 2010. The post-hoc test found that no significant difference was found in 2006 and in 2010 the results reported significantly different between the university groups. Interestingly in expected 2015 both statistical tests indicated no significant differences found. The Kruskal-Wallis mean rank based on average scores as shown in Figure 7 suggested that there were increased in the T&L mean rank for FU and CU groups over the period of time. Indeed, results obtained from the interviews further confirmed the findings from survey instrument where the university FU and CU groups have continuously working to improve the quality in T&L activities despite the funding constraints. Meanwhile for the RAUs, the developments of T&L at these institutions are allied with the R&D activities.

**Fig-7.** Results of Kruskal-Wallis Test for Teaching and Learning (Mean Rank-Based on Composite Measure)



In relation to the number of undergraduate students, findings from the factorial ANOVA and Kruskal-Wallis data indicated that the differences were found to be significant based on the university category in 2006 and expected in 2015. The rationale of these results is that the categorisations of Malaysian public universities have shifted the focus on the number of undergraduate students. This finding further supports the rationale of there being categorisation of public universities by the government as stated by the participants' in the focus group interviews. The accepted ratios of undergraduate degrees to postgraduate degree are 70:30 for FUs and CUs and 50:50 for RAUs as it is also stated in Chapter 4. Surprisingly, participants' from FU has

mentioned that the university ought to take more students at Diploma level due to the Government objectives instruction to increase the number of Diploma holders which have technical backgrounds. Next, results show that the numbers of undergraduate degrees offered were varying across the types of public universities and consistent with above findings. As indicated, the FUs and CUs are going to offer more undergraduate degrees compared to RAU in order to accommodate the increasing number of students. However, the Kruskal-Wallis and factorial ANOVA showed that no significant differences were expected in 2015. In the context of number of students at the postgraduate level, findings from both quantitative and qualitative data confirmed that the differences were found according to university category. The direction of changes indicates that the differences emerge from 2006 up to expected in 2015 where RAUs led the number of postgraduate students' enrolment with a higher mean score found based on the Kruskal-Wallis results. The post-hoc test results from factorial ANOVA then further confirmed that the differences occurred based on the university category. The present results of this study are significant because RAUs should encourage the culture of research through the T&L and the students will gain benefit from the R&D activities. The ratio for undergraduate to postgraduate should be 50:50 at RAU and results from this present study further confirmed by the participants in the interviews. However, the finding does not distinguish the number of students either by research or by coursework.

Findings from the above statements were then further supported by the number of programs offered at the postgraduate level. Results from statistical tests show that RAUs were offering a greater number of programs at postgraduate level compared to FUs and CUs from 2006, 2010 and expected in 2015. However, findings from this present study do not differentiate the program either by coursework or by research. This differentiation on postgraduate student helps to explain some data about research activities taken in RAUs. This is due to the function of RAUs to cultivate research activities among post graduate students. Nevertheless, for the RAUs, the purposes of increasing the number of postgraduate degrees can be associated with intensification the research activities. The discussion was than further explored by looking into the number of international students. The results from factorial ANOVA shows that there were significant main effects found at 2006, 2010 and expected in 2015 based on the university category. The post-hoc analyses presented suggested the perceived differences between RAU groups with CU and FU groups according to the direction of changes. In addition, the Kruskal-Wallis test also indicates the significant differences. The increase in international students pursuing degrees in RAUs indirectly fuelled the R&D activities in line with the status granted. Findings related to the development of infrastructure facilities of T&L shows that the significant differences were only found varies according to university category in 2006 and 2010. However, the statistical tests show that no differences found expected in 2015. This may be due to the factors that all FUs and CUs are expected to afford at least the minimum requirement for T&L facilities with the support from Federal Government funding and internal sources. As mention, the new universities require more funding to develop infrastructure to meet the stakeholders' requirements. By the 2015 the respondents' perception is that the facilities will be improved from what they have at the present.

This is important because, in order to improve the quality of T&L the public universities should provide the best possible facilities to meet the growing number of undergraduate and postgraduate students. Based on the previous results, FUs and CUs are expected to take more students at the undergraduate level. Thus, the present infrastructure should be improved to meet the growing demand.

### **Government Objectives**

The survey questionnaire indicated that the respondents agreed that funding reforms have contributed to widening access and enhancing quality of education in Malaysian public universities. This was confirmed based on results from the one-sample nonparametric test and one sample t-test. These results tend to suggest that funding reforms have contributed to achieving the widening of access and enhancement of quality in education. The public universities agreed to accept the performance objectives specified in the strategic plans, even during funding cuts. Moreover, results from the Kruskal-Wallis test indicated significant differences according to university categories in 2006, 2010 and 2015 (expected outcome). The factorial ANOVA test showed significant main effects occurring in 2006 starting point and 2015 vs 2006. Interestingly, results from the post-hoc test further confirmed that the objective to widen access and enhance quality have varied across Malaysian public universities in 2006. These results were further confirmed by the respondents from focus group interviews who explained that at university level, the direct and indirect funding is provided for students that require extra short or long-term assistance. They said that the Student Affairs Department plays a major role in monitoring this matter and taking action to help students as required. Students' records can be used to gain further information.

Second, findings from both quantitative and qualitative results suggest that government funding reforms have improved the quality of T&L and R&D, as stated in the government strategic plans. As discussed, the Federal Government has implemented approaches to monitoring the activities related to teaching and research at public universities. This approach assists in to reducing information asymmetries and/or goal conflicts through compulsory reporting of current performance levels to the government. The multiple goals set by the government in strategic plans have not been an obstacle to the universities in achieving their objectives. Third, results from the quantitative data showed that the results of the government funding reforms have fulfilled the objectives of strengthening the HEIs. Interviewees recognised that the government had taken numerous actions (such as amending regulations and giving more autonomy) to improve university governance. They believed that improving these actions will assist in the decision making processes in public universities in Malaysia to ensure that any institutional change will align in accordance with principal interest.

Next, findings from this study show that government funding reforms have improved the objectives of intensifying internationalisation in Malaysian public universities. As indicated in the previous

findings, these public universities are working to increase the number of international students, further confirming the findings from the quantitative and qualitative data. Furthermore, results from the post-hoc test data have indicated differences between the university categories in the 2006 starting point and 2015 vs 2006. Moreover, the Kruskal-Wallis tests capture the significant differences between the groups in 2006, 2010 and 2015 (expected outcome). The mean ranks for RAU groups were significantly higher in 2006 and 2010, with CU and FU groups reporting the lowest. These indicate that the government intention to increase internationalisation has become one of the most successful agendas in Malaysia public universities. This supports the view of Agency Theory in which the agents' behaviours reacting in accordance with the principal interests may reduce the agency problem. In addition, results from the statistic tests indicated that funding reforms have contributed to improve the enculturation of lifelong learning in Malaysian public universities in accordance with the government strategic plans. These findings were than further confirmed from the qualitative interview data. Even though, there was no direct funding provided, the management have offers the assistant to support this program at their universities. For instance, tuition fees discount and flexibility to enrol compared to other students. Moreover, the short course programs established by the universities also offer great opportunities to the students, and therefore support the activities in improving the quality of education through ongoing training and exploration of new knowledge.

As describe before, findings from qualitative data confirmed that the public universities are required to report the institutions current performances to the government in regular basis. However, in this sub section the discussion emphasis on the activities related to the program plans imposed by the government as stated in the blue prints. The purpose of this information ensured that the government is able to monitor the current development of strategic planning implemented in the public universities. Furthermore, the information might be used by the government for forthcoming planning. As in 2011, the National Higher Education Strategic Plan beyond 2020 is on the second phase of its implementation. In Phase II (2011-2015), the government emphasis is on strengthening and enhancement of HEIs in Malaysia. The evidence provided in Phase I is very important for the government to improve the accomplishments that require in Phase II. Nevertheless, the reporting mechanisms implemented would reduce the informational asymmetries and/or goal conflicts. Another important finding emerged from this present study reported from the participants' perception of the Federal Government plans to implement the PBF mechanism in the public universities. Interestingly, results indicated that the participants were agreed with the government intent to implement this funding mechanism. This proposed mechanism was clearly stated at the National Higher Education Action Plan 2007-2010 and has been addressed again by the Prime Minister during tabling the Tenth Malaysian Plan (2011-2015). Indeed, participants from RAUs indicated that this funding mechanism is the right approach to be implemented in a way to achieve the world class university. However, participants' from FU suggested that the government should provide clear guidelines before implementing this funding system. Apart from PBF mechanism, the Malaysian Government is in the process of implementing new budgeting system

called Outcome Based Budgeting (OBB) and until this study has being done the funding system is in the pilot stage. In this present study, the qualitative data further explored the difficulties and challenges the public universities faced in order to implement the National Higher Education Strategic Plan beyond 2020 and National Higher Education Action Plan 2007-2010. Results in this study revealed that the participants' somehow look the government strategic plans as a challenge rather than difficulties. Indeed, the findings indicated that the public universities have taken several approaches to facing these problems. The approached executed to some extent help to overcome the challenges in order to implement the government strategic plans.

**Table-1.** Difficulties and Challenges Universities Face in Implementing the Malaysian Government Strategic Plans

Difficulties and Challenges as stated by Participants	University			
	A	B	C	D
Funding	x	x	x	x
Obtaining warrant for the appointment of new staff, especially academic staff	x	x	x	x
New university status			x	x
Location of new universities			x	x
Mentoring for R&D			x	x
Recruitment of expert staff				x
Internationalisation				x
Age disparity of academic staff		x		
Collaboration with industries			x	x
Developing outstanding students in thinking, creativity and innovation		x		
Mobilisation of resources.				x

Findings from qualitative data as indicated in Table 1 illustrated that funding and appointment of new staffs are among the most difficult and challenge that have been expressed by the participants in the interviews. These problems to some extent create barriers to the implementation of strategic planning at the universities. However, as stated before, the universities have taken several steps including appointing contract staff, multitasking and cost cutting to overcome these difficulties and challenges. In addition the status as new university, location, resource person and collaboration with industries cause FUs and CUs having a difficult to carry out the R&D activities.

## CONCLUSION

In conclusion, The National Higher Education Strategic Plan beyond 2020 and National Higher Education Action Plan 2007-2010 intends to address the national innovation for improving the Malaysia education system. The current study found that that change in the Federal Government funding contributed to achieving the Government objectives as stated in the blue prints through reduction in goal conflict and/or information asymmetry. Therefore, results in this study reveal that Malaysian public universities have interpreted the plans with focused on improving the quality of T&L and R&D to achieve institutional and national priorities.

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