

# Performance-Based Budgeting and its Impact on Control Effectiveness: A Case Study of the State University of Indonesia

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This study aims to empirically analyse the impact of performance-based budgeting on control effectiveness, including the financial control effectiveness and the performance control effectiveness at Airlangga University. The study's sample included the Dean and Vice Dean of financial affairs at Airlangga University. The method of data collection was purposive sampling through the distribution of questionnaires. The research variables were performance-based budgeting, financial control effectiveness, and performance control effectiveness. Hypothesis testing was carried out using regression analysis. The results of statistical tests show that performance-based budgeting had a positive and significant influence on financial control effectiveness, while performance-based budgeting had no significant effect on performance control effectiveness. These study findings indicate that the management of Airlangga University needs to prepare standard operating procedures to improve the implementation of performance-based budgeting.

**Keywords:** *performance control effectiveness; financial control effectiveness; performance-based budgeting.*

## Introduction

Universities in Indonesia have three types of legal status. The first is a State-Owned Legal Entity University (BHMN), otherwise known as a Legal Entity University (PTNBH). This type of university has autonomy in terms of academic and financial affairs. Second are universities with the legal status of a public service agency. This second type of university has autonomy in terms of financial matters only, but not of academic matters. Lastly, universities with the

legal status of a work unit. This third type of university has no autonomy, either in academic or financial affairs.

These three forms of legal status were devised by the Ministry of Education and Culture of the Indonesian Republic, based on the preparedness of universities. Previously, the government did not want to provide full autonomy to universities. However, in order to boost the world rankings of Indonesian universities, the government consequently designed three types of legal status, giving varied forms of autonomy, dependent on the readiness of universities to compete on a global level. In Indonesia, there are 11 universities that have obtained the status of PTNBH. These 11 universities have full autonomy in terms of their academics and financial aspects. In terms of academics, universities with the legal status of PTNBH can open or close study programs, while in terms of financial matters, PTNBH universities can devise their own mechanisms related to receipts, expenditure policies, and accounting and reporting procedures. Therefore, PTNBH universities have a better ability to adapt and focus on innovation, boosting their ranking and prestige on a global level.

Universitas Airlangga (UNAIR) is one of the universities recognised as a BHMN/PTNBH. According to the governmental decree (PP) Number 30, 2006, regarding UNAIR as BHMN, the financial management of the university must be in line with the requirements of the principles of accountability, productivity, effectiveness, efficiency, transparency, integrity and autonomy. The university needs to design a more transparent and accountable financial management system. It is hoped that the system will maintain effective financial management, follow the rules and regulations, be efficient, be competitive, be effective, be open, and be accountable for fairness, decency, and social benefits. It requires the finance division to change the paradigms of their budget. The orientation of the budget has to transform from field-oriented budgeting to mission-achieving benchmarks.

In conjunction with UNAIR's transition to a PTNBH, it also adopted a performance-based budgeting approach. Performance-based budgeting (PBB) is a budgeting approach based on achievements or job performance. PBB is suggested as a possible solution to the problems of efficiency, effectiveness, and/or transparency in the public sector (Mauro, Cinquini & Sinervo, 2019).

Several authors employ different terminology for PBB. Instead of PBB, the term 'outcome-based budgeting' (results-based budgeting) was used by Hatry and Wholey (1999). In addition, the term 'budgeting for results' was used by Osborne and Gaebler (1992). PBB focuses on guiding outcomes and attempts to connect resource allocation with specific results to be achieved (Hatry & Wholey, 1999). Another definition of PBB, stated by Smith (1999), was performance budgeting connected disbursement to results. PBB distributes resources based on results that can be precisely measured. This results in a strategic planning process that takes

into account the agency's critical issues, state resources and stakeholder feedback. PBB was considered an appropriate practice to pay more attention to how resources are used and what outcomes should be obtained compared to traditional public budgets (Mauro et al., 2019).

PBB is a budget planning system directed towards results/performance achievement. The performance should take into account the efficiency and effectiveness of public services, requiring that the public interest be prioritised (Mariana, 2005). Therefore, on this basis, the authors plan to conduct a study to analyse the impact of PBB implementation on the effectiveness of financial and performance controls at UNAIR.

### **Literature Review**

Budgeting is a financial plan that demonstrates how human resources, materials and other resources are systematically allocated. A variety of government budgeting systems have been used to meet a number of purposes, including financial control, management planning, spending priorities and public accountability. PBB is used in the government as a measure of performance and accountability.

PBB is a budgeting tool to connect funding planning with estimated results and outputs, including efficiency in the achievement of performance. Results and outputs are outlined in each unit's performance targets. The plan explains how those outputs are accomplished, followed by financial support at each level of achievement. PBB is decentralised and involves devolved management, is output-oriented, comprehensive, relies on long-term planning, and is based on objective and performance targets. It also uses a Planning Programming Budgeting System and Zero-Base Budgeting, is cross-department, rational, systematic and uses bottom-up budgeting.

Many scholars define PBB in different ways. In general, in this type of budgeting, performance measures should help decisions on funding (Wang, 2008). According to Amirkhani, Aghaz and Sheikh (2019), the first wave of innovations in PBB dates from the early 1950s, where performance measures were introduced to improve efficiency. Wider tests (outcomes) were used in subsequent developments, and during the 1990s (Jones & McCaffery, 2010) the PBB was synonymous with result-oriented budgeting (Herzog, 2006).

PBB is described as a policy instrument involving one or more activities to be carried out by government institutions in order to achieve goals and objectives, as well as to obtain an allocation of budget, or community activities, organised by government institutions. Activities are arranged as a means to attain annual performance. In other words, the combination of the annual work plan, which consists of the annual budget and the operational plan of the strategic plan, is the critical element of PBB. The important elements to be considered in PBB are:

1. The agreed objectives and achievement measures.
2. The collection of systematic, reliable and detailed information about the realisation of performance, so performance achievement can be compared with cost.
3. The ongoing provision of information, allowing it to be used in the management of budgeting, planning and controlling.

A number of conditions, considered as triggers for the successful implementation of PBB, are:

1. Leadership and commitment of all of the organisation's components.
2. Concentration on the administration's continuous improvement.
3. Sufficient resources for the improvement agenda (time, money and human resources).
4. Mechanisms for awards and punishment.
5. A strong desire to be succeed.

When deliberating PBB, some principles should be taken into account. These include the budgeting principles, major activity in the budgeting process and responsibilities of the Board of Trustees. The principles of PBB are:

#### ***Accountability and Transparency of the Budget***

Budgets should be capable of portraying clear information about the objectives, outcomes and benefits obtained by the community from a budgeted project or activity. The members of a community should be given the right to learn the budgeting process, because it includes people's desires and interests, in particular, meeting the needs of livelihoods. People also have the right to demand accountability for the program or the implementation of the budget.

#### ***Budget Discipline***

Future revenues are realistically estimated so that they can be reached, whereas expenses budgeted on each item are the upper spending limit. Budgeted expenses have to be backed by sufficient funds. There is no reason for undertaking activities/projects that do not have a budget. In other terms, the disbursement of each budget item must be in line with previously agreed projects/activities.

#### ***Budget Justice***

A university shall divide its budgets fairly, so that the entire group of academics and workers can use it without discrimination in the provision of services, because university income is primarily acquired from the whole society.

### ***The Efficiency and Effectiveness of Budget***

Budgeting should be carried out on the basis of the principles of efficiency, effectiveness, timeliness and transparency. The disbursement of available funds should also offer optimum benefit to the stakeholders.

### ***Prepared Using the Performance Approach***

A budget prepared using the performance approach must prioritise efforts to achieve expected outputs. An output should be greater than, or equal to, the cost or input. It must also be able to promote the organisation's professionalism.

Besides the general principles explained above, Law No. 17, 2003, mandates the crucial changes on budgeting as follows:

### ***The Implementation of Budgeting Approach with a Medium-Term Perspective***

A medium-term perspective provides a comprehensive structure, strengthens relations between planning and budgeting systems, establishes fiscal discipline, manages resource allocation more reasonably and strategically, and enhances public confidence in a university with more effective and efficient delivery of services.

A medium-term approach reduces the ambiguity in annual budgeting, in regards to funding potential future policy initiatives. At the same time, the effect of new policy should also be measured in the medium term, in the form of fiscal sustainability. This approach also offers a chance to examine how universities make changes to existing policies, including suspending unsuccessful programs in order to accommodate new policies.

### ***The Implementation of Integrated Budgeting***

By using this approach, it is possible to coordinate all of the activities of a university in an organised manner, including the integration of development and routine budgets. This is an important part of a long-term effort to create budget transparency and promote the development and implementation of PBB. Regarding the calculation of the cost of inputs, and the assessment of program performance, it is crucial to take into account the overall costs, both operational and investment.

### ***The Implementation of PBB***

As part of the development of a PBB system, this approach will clarify the objectives and performance indicators. It will help improve resource efficiency and productivity and reinforce the decision-making process within the medium-term policy framework. The budget and work plan, which is established based on work performance, aims to achieve benefits as much as possible, through the use of limited resources. The programs and activities of the university should therefore be geared towards achieving results and objectives defined by the annual work plan.

### ***Main Activities in Developing PBB***

The principal activity of PBB is the collection of quantitative data, informing budgeting decisions. The method of collecting quantitative data was intended to obtain information and understand the different programs generating projected outputs. Quantitative data can also give insight on each program's contribution to the strategic plan. The process of decision-making will include all levels of university administration. The selection and priority of the budgeted program will rely on data regarding the achievement of expected performance targets.

### ***The Role of the Board of Trustees in Budgeting***

The allocation of budget for each projected program in each unit of work is discussed in a Board of Trustees meeting. The selection and priority of budget allocation for each unit of work is the outcome of an agreement at a Board of Trustees meeting. It is often necessary for the link between results and budget allocation to be flexible and loose to reach an agreement, but with the Standard Expenditure Analysis (ASB), the allocation of the budget may become more stringent and reasonable.

### **Budgeting Mechanism**

The budgeting process starts with the compilation of the faculty's aspirations. The results are generated from each unit's input, which is then formulated by the finance directorate. Budget participation was done in such a way; showing that communication is set up between the university's leaders and faculty. This condition generates information, so that lower-level management is capable of gathering, exchanging and spreading information related to the task, which helps assist the process of decision-making and interacting with decision makers.

Kenis (1979) stated that a budget is a statement of what is planned and expected in the future for a given period. Mardiasmo (2004) stated that the public sector budget is particularly important for universities, as:

1. A budget is an instrument for fostering socio-economic development, ensuring stability and improving the life quality;
2. Desires and needs are infinite, while resources are finite; and
3. A budget guarantees a university is accountable to the community.

The influence of management science in the budgeting system was simultaneously implemented with the rapid development of management science after the Second World War. This influence is evident in activities linking efforts to enhance the performance of both the private and public sector. The performance budget is the budget sources contributed to for the results of this project. The performance budget represents several things, firstly, the purpose and intent for which the budget has been requested; secondly, the cost of the projects planned to meet the expected results; and thirdly, the quantitative data for each program to assess success achievement.

Jones and Pendlebury (2010) explicated that a budget is a very important link between planning and controlling. The role of planning is expressed in the form of inputs required for planned activities to be carried out. The role of the controlling is to prepare a budget, as to demonstrate clearly the input and resources allocated to a person or department in order to fulfil its responsibilities. Controlling can be carried out by comparing an expected result with an actual result, ensuring that the expenditure amount is not surpassed and expected results are achieved.

The era of New Public Management (NPM) emerged along with the reform of public administration, leading to the establishment of a more systematic approach to public sector budgeting. There are four kinds of budgeting approaches in the public sector, with a different emphasis for each approach. Those approaches are line-item budgeting, program budgeting, performance budgeting, and zero-based budgeting (Kluvers, 1999).

A budget is an expression of monetary units as a means of planning activities, and can also be used simultaneously as a means of controlling. The reporting system for revenues and expenses must be carried out cautiously and correctly. Mastuti, Rinusu and Kholik (2003) proposed three principles in budget oversight, namely: (i) *wet-matigheid*, principles of supervision that emphasise the importance of compliance with applicable rules and regulations in budget implementation, (ii) *rechmatigheid*, the legality of the implementation of budget, and (iii) *does-malighed*, the role of benchmarking in the implementation of a budget.

Gibson, Ivancevich and Donnelly (2000) stated that control effectiveness criteria are:

1. The ability of an organisation to deliver the goods and services requested by the community;
2. The ability of an organisation to harness its resources effectively;

3. The degree of satisfaction of officials within an organisation;
4. The willingness of an organisation to adapt to changes in the environment; and
5. The level of an organisation's growth.

## Hypotheses

Jones and Pendlebury (2010) described budget control as ensuring that actual spending amounts were in accordance with amounts budgeted, and said the aim and level of activity included in the budget needed to be achieved. Syakhroza (2003) said that achieving budget targets played a pivotal role, as a budget reflects standards of efficiency and effectiveness. A budget represents the utility of the standard, as it includes a collection of desired output and budget efficiency standards, detailing the inputs needed to produce the desired output. Therefore, financial control in budgeting is effective when actual expenditure is in line with planned expenditure. Based on the explanation above, the following hypothesis can be stated:

**H1:** Performance-based budgeting has a significant and positive impact on the effectiveness of financial control.

Mardiasmo (2004) stated a system of performance budgeting includes the planning of activities/programs and the selection of performance indicators for achieving aims and goals of activities/programs. Robinson (2002) explained that a performance budget is not only associated with financial control, but also provides a key tool for optimising efficiency and effectiveness in delivering governmental services to the public. The achievement of desired results, as illustrated in the performance indicators, is used as a guide for budget planning. The clarity of budget objectives, set out in targets and performance indicators, enable organisation managers – or anyone overseeing a budget – to track the achievement of expected performance. Based on the above discussion, the following hypothesis can be stated:

**H2:** Performance-based budgeting has a significant and positive impact on the effectiveness of performance control.

## Data/Methodology

This study was conducted to empirically analyse PBB's relationship and effect on the effectiveness of control at UNAIR, as one of the state universities in Indonesia. The control effectiveness is the budget's objective, as a tool of UNAIR's control functions.

This study obtained primary data through a survey method. Sampling was carried out using a purposive sampling method, which is the nonprobability sample selection, which meets certain considerations (Cooper & Schindler, 2001). These considerations include the respondents of



the survey having to be directly involved in the budgeting process and financial accountability. They are the Deans and Vice Deans of finance affairs from all faculties at UNAIR. Data collection was conducted via questionnaires. The researchers distributed the questionnaires to the respondents. The researchers directly undertake the distribution and collection of the questionnaire to ensure a high return rate.

The use of the questionnaire was a key tool for collecting data in this study, since the respondents were relatively busy, and the questionnaire was not considered too detrimental on their workload. Another supporting method of gathering additional data, was providing open-ended questions for respondents to elaborate further on questions asked in the questionnaires.

The list of questions in the questionnaire had been reviewed by the head of accounting and director of finance at UNAIR. This review by both parties, whom are skilled in financial matters, is considered sufficient to ensure the questionnaire is appropriate to be disseminated directly to Deans and Vice Deans of finance affairs of all faculties at UNAIR.

The distribution of questionnaires was carried out when a regular meeting, under the direction of the Vice-Rector in charge of financial affairs, was held. Of the 26 questionnaires distributed to all Deans and Vice Deans of financial affairs from 13 faculties, 15 questionnaires were returned and completed (58%). Those 15 questionnaires were considered sufficient, as all faculties had completed at least one questionnaire. The questionnaires that were not returned were the questionnaires distributed to the Deans. This means that 13 faculties, represented by the Vice Dean of financial affairs, had filled out and returned the questionnaires, while the remaining two questionnaires were filled out by two Deans.

Multiple linear regression was used to examine the influence of PBB (X) on the effectiveness of control (Y) of both the financial control effectiveness, (Y1) and the performance control effectiveness (Y2). The relationship model between variables is arranged in the model as follows:

$$Y1 = b_0 + b_1X_1 + e_1$$

$$Y2 = b_0 + b_1X_1 + e_1$$

Where:

Y1 = the effectiveness of financial control

Y2 = the effectiveness of performance control

X1 = performance-based budgeting

## Findings/Analysis

### *Analysis of Hypothesis 1. Influence of Performance-Based Budgeting on the Effectiveness of Financial Control*

Statistical tests showed the correlation coefficient ( $r$ ) between the PBB variable and the variable of the effectiveness of financial control (FC) is 0.534, with a significance  $p$ -value of 0.020 or  $p < 0.05$ . This indicated that the PBB variable has a positive correlation with the variable of financial control effectiveness.

The coefficient of determination ( $r^2$ ) of the two variables is 0.285. This means that 28.5% of the variance in the variable of financial control effectiveness is explained by a linear relationship with the PBB variable, or vice versa.

**Table 1:** Result of Correlation Test

		PBB	FC
Pearson Correlation	PBB	1	0.534
	FC	0.534	1
Sig. (1-tailed)	PBB	.	0.02
	FC	0.02	.
N	PBB	15	15
	FC	15	15

**Table 2:** Result of Regression Test

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
	0.846	1.501		0.564	0.583
FC	0.873	0.384	0.534	2.276	0.04

a. Dependent Variable: PBB

The results of  $t$ -test provided in the Table 2 show that the variable of financial control effectiveness had a coefficient value of 0.534 with a significance level of  $p$ -value 0.040 or  $p$ -value  $< 0.05$ . The result of simple regression analysis in Table 2 shows that the  $t$ -test is significant. It means that there is a causal relationship between the PBB variable with the variable of financial control effectiveness.

Hence, it can be concluded that the PBB variable has a positive and significant influence on the variable of financial control effectiveness. It shows that the statistical results support

Hypothesis 1, which states that performance-based budgeting has a significant and positive impact on the effectiveness of financial control.

This result is consistent with previous studies, such as Asmoko (2006), and Yusfaningrum and Ghozali (2005), which found that the PBB variable effectively influences financial control. Given that, in the early preparation of PBB, all of the activities proposed by the work units have been evaluated. This evaluation was conducted at a faculty level and a university level. The cost of carrying out the tasks had been carefully evaluated in order to achieve the expected targets. Therefore, the budget can be used as a strong basis for carrying out activities as previously planned during the execution of activities.

This condition is also consistent with the explanation of Syakhroza (2003), who said that a budget shows the effectiveness of the standard, as it provides a collection of desired output and efficiency standards due to the budgetary information required to produce the desired output. Thus, the effectiveness of financial control in budgeting is the realisation that expenditure is in accordance with planned expenditure. This seems to have been thoroughly understood by every faculty leader.

***Analysis of Hypothesis 2. Influence of the Effectiveness of Performance-Based Budgeting on the Effectiveness of Performance Control***

Statistical tests showed a correlation coefficient (r) between the PBB variable and the variable of performance control (PC) of 0.448, with a significance p-value of 0.047 or  $p < 0.05$ . This result suggests that the PBB variable is positively correlated with the variable of effectiveness of financial control.

The coefficient of determination ( $r^2$ ) of the two variables is 0.201. Thus 20.1% of the variance in the variable performance control effectiveness is explained by a linear relationship with the PBB variable or vice versa.

**Table 3:** Result of Correlation Test

		PBK	PC
Pearson Correlation	PBK	1	0.448
	PC	0.448	1
Sig. (1-tailed)	PBK	.	0.047
	PC	0.047	.
N	PBK	15	15
	PC	15	15

**Table 4:** Result of Regression Test

Model	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta	T	Sig.
	1.589	1.477		1.076	0.301
PC	0.651	0.36	0.448	1.809	0.094

a. Dependent Variable: PBB

The results of regression testing from the t-test shows that the variable of performance control effectiveness has a coefficient of 0.448 with a significance level of p-value 0.094 or p-value > 0.05. The result in Table 4 shows that the results of the t-test were insignificant. It indicates that there is no causal relationship between the PBB variable and the performance control effectiveness variable.

Thus, it can be concluded that the PBB variable has a positive influence, but it is insignificant on the effectiveness of the performance control variable. This means that Hypothesis 2, which states that PBB has a significant and positive influence on the effectiveness of performance control, is not supported.

This result stands against results of prior studies, such as Asmoko (2006), and Yusfaningrum and Ghozali (2005), which reported that PBB could control performance effectively. Due to the insignificant relationship between PBB and PC, therefore additional analysis is provided to reveal causes of insignificance.

### **Additional Analysis**

The causes of the insignificant relationship between PBB and PC can be elaborated on, by using the answers given by all respondents in the questionnaire's open-ended section. By analysing the causes of why PBB has no impact on performance control effectiveness, researchers can suggest recommendations. Therefore, the implementation of PBB can improve the performance of universities.

Firstly, the insignificant relationship between PBB and PC variables means that the implementation of performance targets in the faculties have not been consistently implemented. This might be due to not all faculty leaders (Deans and Vice Deans) formulating and enforcing performance contracts or key performance indicators (KPIs) to the work units under the auspices of each faculty.

Secondly, another condition that might cause this insignificant relationship was reflected in research by Osborne and Gaebler (1992), which stated that there are still many public sector

organisations trapped in budget line items. Despite the introduction of the PBB paradigm, the old paradigm still applies. Therefore, money can be spent if the budget is available. When this situation arises, PBB will only be useful in preparatory stages, but will no longer be successful if not enforced.

One of the required elements to successfully implement PBB is the utilisation of performance monitoring. Performance monitoring is an important element in implementing PBB. If this element is absent, PBB will only be useful at the beginning of budget planning, but there will be no difference during implementation within traditional budgeting.

Lastly, one of the strategies to achieve successful implementation of PBB is by enforcing a reward and punishment mechanism (Mardiasmo, 2004). When performance monitoring is introduced, the next step is to reward those who achieve good results and punish those who fail to achieve performance targets. This can lead to PBB being properly applied.

It seems that UNAIR has not addressed these three criteria. Therefore, PBB had an insignificant impact on performance control effectiveness, because the work units are not driven or provided guidance, and the direction needed to achieve a certain level of performance. Therefore, it is strongly recommended that these three recommendations be enforced, so UNAIR will be able to achieve a better position in world rankings by having greater autonomy of its governance, through the improved implementation of PBB.

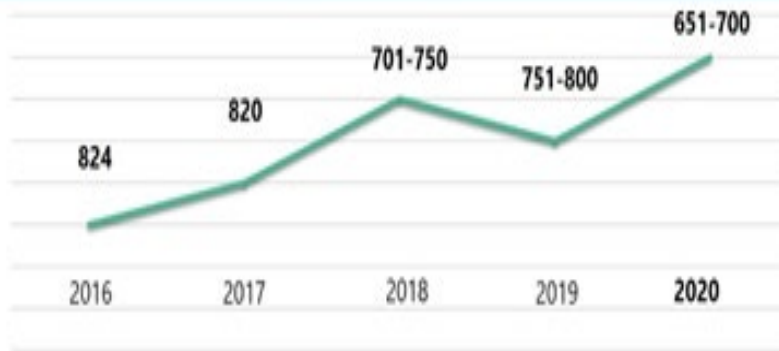
The implementation of those three suggestions, namely, the formulation and the enforcement of KPIs, the monitoring of performance, and the implementation of reward and punishment, eventually boosts the academic profile of UNAIR at a national or international level. For instance, in terms of internationally accredited study programs, UNAIR was ranked second highest nationally in 2019. This might be due to the contribution of PBB, so that all faculty leaders worked in earnest to achieve better performance.

The performance of UNAIR at an international level can also improve over time. Based on data obtained from QS World University Rankings, UNAIR was positioned in 824th rank in 2016. However, UNAIR's rank has improved gradually, and the university finally ranked in the 651-700th rank in 2020. The latest rank also positions UNAIR as the one of the best five universities in Indonesia. These improvements might be due to the consistent and improved implementation of PBB, since the legal status as BHMN or PTNBH was awarded to UNAIR by the Ministry of Education and Culture of the Indonesian Republic.

The QS World University Rankings 2020 will be used by all stakeholders at UNAIR to shape goals and direct available resources to achieve performance indicators moving forward. For instance, UNAIR got a low score in the aspect of citation per faculty and international students

in the latest ranking. Therefore, future policy can be directed through the use of PBB, obtaining higher paper citations and attracting more admissions from international students. Hence, UNAIR can achieve a better score, improving their ranking position.

**Figure 1.** The Rank of UNAIR Based on QS World University Rankings



Indikator	Bobot	2016		2017		2018		2019		2020	
		Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Academic Reputation	40%	20,9	586	18,9	559	25,2	435	17	480	20,6	401
Employer Reputation	10%	22	616	20,2	554	20,6	560	16,1	501	23,7	393
Faculty student ratio	20%	20,4	720	17,1	623	18,7	613	26,1	553	33,3	458
Citation per Faculty	20%	1,4	875	1,2	912	1,2	956	1,2	601+	1,2	601+
International Faculty	5%	3,3	803	1,4	749	2,1	872	9,1	601+	10,1	601+
International Student	5%	1,6	873	4,8	892	2,0	900	2,3	601+	2,3	601+
<b>Overall Score</b>		15,2	<b>824</b>	13,5	<b>820</b>	16,4	<b>701-750</b>	14,5	<b>751-800</b>	18,2	<b>651-700</b>

**Source:** Planning and Development Board of UNAIR, 2019

**Figure 2.** The Rank of UNAIR Based on QS World University Rankings

INDIKATOR	UM	WU	UI	ITB	UGM	IPB	UNAIR	UNPAD
<i>Academic Reputation</i>	68.2	37.4	39.5	39.3	41.3	17.6	20.6	10.7
<i>Employer Reputation</i>	72	22	47.3	39.8	36.7	15.7	23.7	15.1
<i>Faculty Student Ratio</i>	90.7	95.6	43.4	51.3	51.3	36.9	33.3	41.7
<i>Citation Per Faculty</i>	41.5	57.7	1.9	3.7	1.6	1.8	1.2	1.3
<i>International Faculty</i>	62.8	38.6	94.5	29.2	42.9	45.8	10.1	3.4
<i>International Student</i>	57.5	82.1	5	1.6	2.5	3.5	2.3	1.6
<i>Total Score</i>	67.1	54	34.7	32.3	33.2	18.9	18.2	14.7
<b>Ranking</b>	<b>#70</b>	<b>#125</b>	<b>#296</b>	<b>#331</b>	<b>#320</b>	<b>#601-650</b>	<b>#651-700</b>	<b>#751-800</b>

**Source:** Planning and Development Board of UNAIR, 2019

### Conclusion and Limitation

The results of this study concluded two things. First, that performance-based budgeting (PBB) has a significant and positive effect on financial control effectiveness. It means that Hypothesis 1 is supported by statistical results. This result is consistent with prior studies. This situation is understandable, given that there is not too much variation in budgeting between traditional budgeting and PBB in terms of cost components. Only in the initial budgeting process is there a striking difference.

Secondly, performance-based budgeting (PBB) has an insignificant and positive effect on performance control effectiveness. This means that Hypothesis 2 is not supported by statistical results. This result stands against the previous studies. The possible reasons for this insignificant relationship might be due to, 1) the absence of key performance indicators (KPIs), 2) a lack of performance monitoring, 3) a lack of a reward and punishment mechanism.

To overcome the insignificant relationship between PBB and performance control, there are three suggestions that can be considered to improve performance control. Firstly, the implementation of mechanisms, such as a systematic performance contract or key performance indicators (KPI). Secondly, the availability of monitoring on performance conducted by the



work units. Lastly, the implementation of a reward and punishment mechanism, motivating the performance achieved by all faculties as work units at UNAIR.

This study also has limitations. Firstly, the study findings could only be generalised to UNAIR, as the other universities are excluded from the sample. Therefore, future research could extend the present study by including other universities. It should also be emphasised that this study only tests the PBB variable to explain the association with financial and performance controls. Therefore, future research can open possibilities to add other variables, capturing the association with financial and performance controls.



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