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Comparative Analysis of Performance-Based Funding and Block Grants in Higher Education

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ABSTRACT

Financing of higher education in Pakistan has been based on block grants, but there is a new debate on performance-based financing (PBF) as a tool to promote accountability and performance. This quantitative research is a comparative study of PBF and Block Grants (BG) in 5 Pakistani public sector universities in the years 2020-2024. The variables and parameters measured were the graduation rates, research publications, faculty/student ratio and budget utilization. The institutional performance was measured based on the two funding mechanisms using descriptive statistics and regression models. The findings demonstrate that the university that fulfills the PBF requirements has achieved substantial improvements in student success and research productivity but the universities that are funded by block grant mechanism are more financially stable and flexible in planning but the performance improvements are less. The paper concludes that hybrid model of PBF with sustainability of BG can provide a more functional and fairer incentives to performance system to develop provision of higher education in Pakistan.

Keywords: *Performance-Based Funding, Block Grants, Public Sector Universities, Higher Education*

INTRODUCTION

Higher education funding is a topic of controversy and change issues around the globe and the mode of providing funds to institutions has been of special interest. The most popular financing mechanism in the example of Pakistan in the higher education institutions of the state has been block grants (BG). Block grants are usually supplied according to historical funding patterns or other pre-defined parameters, and they are a predictable and consistent stream of funding for institutions which may be planned for in the long run (Jamil, 2017). It is recognized that despite the positive correlates to this stability, block grants may not always be a good incentive for the institutions to be efficient in supporting the student success, research output, and institutional development (Memon et al., 2021).

However, in the alternative, Performance-Based Funding (PBF) is a possible alternative system of funding. PBF invests in universities according to specific parameters of performance, including graduation rates, research level, and retention (Leslie and Johnson, 2020). The primary advantage of PBF is that it places an emphasis on the rewards that are based in the institute, which fosters the funding

incentives to coincide with the achievement of the objectives (Doyle, 2019). The practice that has been practiced in other forms around the world is considered a means of accountability of the institutions and ensuring that the available public resources are used in the right places to increase the performance of the institutions (Lang, 2018). However, despite the theoretical advantages of PBF the application process has been questioned with the issues of equity and fairness and the capacity of entities involved to achieve the set objectives, especially in developing countries like Pakistan (Syed and Ali, 2019).

The PBF and BG can be discussed especially in the context of the higher education system in Pakistan which is already facing a number of problems, including underfunding, disparity between institutions, improving academic outcomes, etc. (Zaman et al., 2020). The higher education sector in Pakistan is not uniform and different types of institutions of variable sizes, resource and academic orientation are provided. Resource inefficiency and performance gap are longstanding problems in the history of public universities that are mostly supported by the government block grants (Nadeem & Malik, 2019). Although it is argued that block grants are more financially solvent, it has been criticized that block grants fail to give any meaningful incentive to universities to improve and/or perform better (Awan et al., 2020). Conversely, the implementation of PBF in some countries has been observed to be one of the methods of overcoming these failures. It has been shown in the international literature that PBF can lead to beneficial outcomes with respect to an increased rate of graduation, improved research output, and the overall institutional performance (Johnson et al., 2019). Specifically, PBF has performed well in such countries as the United States, United Kingdom, and certain European countries, where the universities are driven by giving financial incentives a better student achievement and research output in respect of their performance (Ehrenberg, 2017).

The critics, though, also argue that PBF may turn into a form of punishment to those institutions that serve unpopular students or those with institutional problems in enhancing performance (Kezar and Maxey, 2020). It has prompted the need to adopt greater discretion in financing which will incorporate the elements of both PBF and block grant to achieve the right balance between accountability and equity. The synthesis of the above mentioned a stability of the block grants and the flexibility of the performance-based incentives has proven to be a thought worth considering to become a more fulfilling and efficient mechanism of funds (Brennan et al., 2021). The universities would not only survive, but thrive in other aspects by incorporating the merits of the two sources of funding. As an example, block grants to institutions may be provided to make them stable in their activities, and extra grants can be conditioned on particular performance indicators, one of them being research output or graduation rates. This sort of unified system will be capable of meeting the inadequacies of the two models as well as offer the fluidity that universities need yet in the process hold them responsible to some of the most significant outputs. The proposed research will be directed at the implementation of comparative study of efficiency of PBF and BG among Pakistani universities of the public sector.

By gathering and comparing data and statistics on the key performance indicators, such as graduation rates, number of research publications, faculty to student ratios, and efficiency of budget utilization, this study will be able to help identify the impact of each of the funding mechanisms on the overall performance of the institution. The findings of the paper will be presented in the current discourse of higher education financing in Pakistan and give an overview of whether or not the funding processes can be reformed to make them more accountable and enhance performance within the field. Despite the fact that ample literature is available on the impact of PBF in other countries, there is a minimal number of studies conducted to look at its usage in the Pakistani setting. This imbalance is significant owing to the fact that the system of higher education in Pakistan is featured with the emergence of its own problems, including the absence of resources, political aspects, and institutional abilities on various scales. Exploring the relative performance of PBF and BG in Pakistan the research will provide valuable

information on the nature of implementation of these processes to meet the special needs of the Pakistani mass higher education system.

The findings of the research could be of importance to the education administrators and policymakers in Pakistan. When performance-based funding suffices in improving the performance of the institutions, it may lead the government to seek a more performance-based approach to financing the government universities. On the other hand, in cases when block grants were found to be more conducive to the stability of the institutions and long-term planning, policy-makers may wish to adjust this tool to correspond to the performance goals as much as possible. Lastly, the proposed research is expected to inform the development of a more balanced and efficient funding system that will be in a position to result in the development of the higher education sector in Pakistan.

Problem statement

The problem that the proposed research paper seeks to address is the support of different funding frameworks to enhance the performance of the Pakistani state sector universities. Despite the advantages of block grants in regard to financial stability, it may not be enough to promote sufficient improvements in such aspects as graduation rate, research production, and general effectiveness of the institution. On the contrary, performance-based funding (PBF) is conditional where monetary incentives are applied for some specified results; but in Pakistan, the effect of PBF on equity and organisational capacity has not been well defined. This paper is an attempt to compare the performance of universities running with either of the two models of funding, with a view to finding the most effective model that would facilitate both academic and operational advantages.

Research Objectives

1. To compare the institutional performance of public sector universities in Pakistan under block grants (BG) and performance-based funding (PBF) systems.
2. To evaluate the effectiveness of performance-based funding in improving key performance indicators such as graduation rates, research output, and budget utilization efficiency in public universities.
3. To explore the feasibility of integrating block grants and performance-based funding into a blended funding model to enhance institutional performance and equity in Pakistan’s higher education system.

Research Questions

- How do public sector universities in Pakistan perform in terms of graduation rates, research output, and budget efficiency under block grants compared to performance-based funding?
- What impact does performance-based funding have on the financial management and academic outcomes of universities in Pakistan?
- Is a blended funding model that combines block grants and performance-based funding more effective in improving the performance and sustainability of public universities in Pakistan?

LITERATURE REVIEW

The viability of the funding models, particularly in relation to higher education in developing economies such as Pakistan, has been an issue of great controversy. This literature review will discuss the existing studies concerning the two funding models, block grants and performance-based funding, with references to their effects on the public universities, and the impact of the two with regard to integration between the two funding models.

Higher Education Funding by Block Grants

The issue that has been favored, as long as funding is concerned, in most countries, including developing countries such as Pakistan, is block grants. These grants entail a lump sum of funds to the universities, which are generally distributed according to historical funding rates, student enrolments, or other fixed factors. The main strength of block grants is that they provide stable and predictable sources of funds, enabling universities to plan and allocate funds towards long-term growth (Jamil, 2017). This is a critical stability in the environment where financial resources are finite, and universities have difficulties associated with resource distribution and financial management (Nadeem & Malik, 2019).

However, since block grants have been viewed as a sure method of acquiring funding, critics have complained that the grants have failed to improve the performance of institutions. According to Memon et al. (2021), block grants do not motivate universities to invest more in such aspects as productivity in research, graduation rate, or faculty-to-student ratio. The universities might not have any incentive to improve the quality of academic activity or to be more efficient in their operation, since in most cases the traditional allocation of funds is not directly linked to any outcome in an institution. It could lead to resource ineffectiveness and inefficient use of money particularly in poorly performing universities. Block grants also help to strengthen the existing inequality among the institutions, and the advantage of such approach is that well-established universities or larger ones in size are more likely to receive more resources, whereas smaller or low achieving institutions will stay behind (Zaman et al., 2020).

Block grants and particularly in the case of the public universities have proved to be a major problem in Pakistan, particularly the academic resources and facilities have been unevenly distributed among the students. Resource scarcity is an issue, which has often been hard to overcome, in less-developed regions of Pakistan, or where the demographics of the university are disadvantaged, and block grants are not successfully allocated to take into account these disparities (Awan et al., 2020). Additionally, the absence of performance-based system of financing has led to the issue of accountability and the necessity to implement more specific measures that would enhance the results of education (Syed and Ali, 2019). Thus, block grants have brought about stability, but not on promotion of long-term enhancement in the academic and research capacities of universities.

Performance Based Funding of Higher Education

Performance-Based Funding (PBF) is a response to the inefficiency of block grants, and the contemporary version of the concept is allegedly supposed to be related to the quantifiable outcomes of the institutions represented by graduation rates, research publications, and student retention (Leslie and Johnson, 2020). PBF is oriented towards institutional responsibility and the performance of universities is also rewarded to establish an incentive of taking into consideration the quality of the academic experience and efficiency in operations (Doyle, 2019).

The idea underpinning PBF is that the state has to use its funds wisely, and universities are to be responsible to the results achieved (Ehrenberg, 2017). The publications of PBF have mentioned that it can also be applicable when it comes to changing such vital aspects of life as the performance of students and the productivity of research. The studies held in those countries, as well as the United States and the United Kingdom, confirm that the institutions of higher learning that have been already adopted to the PBF systems have been marked by high rates of graduation and research (Johnson et al., 2019). As an example, the PBF plans in the states of Ohio and Florida have improved the quality of graduation rates of the universities and have developed new services oriented towards students (Lang, 2018). Likewise, the European nations have exploited performance-based funding in encouraging the universities to concentrate on the quality and quantity of their research that results in growth regarding publication of research and institution-level reputation (Brennan et al., 2021). The introduction of the PBF has not been

without its detractors though. Among the general issues, the threat of inequality can also be seen in situations where the less affluent universities or universities with the greatest number of underprivileged students should be equally high-performing as the high-performing or more established educational institutions (Kezar and Maxey, 2020). PBF models do not put into consideration various issues that institutions encounter in different settings. The underdeveloped areas of the country might be structurally challenged to improve the outcomes in Pakistan, including poor infrastructure, inability to receive research grants, and student preparedness (Memon et al., 2021).

Consequently, these universities will face punishment within PBF models despite their efforts to improve and this will bring concerns of fairness and chances of escalating the disparities within the education sector. In addition, the critics of PBF allege that it has the potential of fostering the emphasis on measurable values that can deform the educational agenda of universities. To illustrate the point, universities may be obsessed with a higher graduation rate, a lower academic standard, or focus on the quality of research more than teaching (Leslie and Johnson, 2020). These problems suggest that even though PBF may be an effective tool in the incentives of institutions to become better, it should be used with extreme care in order to produce significant and overall gains rather than promote a superficial or counterproductive outcomes.

Potential of a Blended Public Financing Model

Because neither block grant nor performance-based funding is the full solution to the issues of funding, some researchers suggest a mixed or blended funding model that also takes stability of block grants and accountability-based incentives of PBF into consideration. It would also allow universities to have a minimum threshold of funding sometimes in the form of block grants, perform financial planning, and plan long-term and also tie up more funding to specific performance metrics, including research output or graduation rates (Brennan et al., 2021).

The blended model will strike a balance between the institutional stability and autonomy requirement and the requirement of better outcomes and accountability.

The blended funding model is becoming increasingly popular in a range of educational settings, with a number of countries trying different types of hybrid models. The blended funding models have been applied in such countries as Sweden and Finland so that universities not only received the stability needed to develop the institution, but also were encouraged to better academic practices (Zaman et al., 2020). This strategy has worked exceptionally well in promoting university and government collaboration, where flexibility in the manner money is spent is enabled, yet a concentration on key performance indicators is maintained.

The blended funding model can be used in Pakistan so that some of the systemic issues that universities in various parts of the country have are resolved. With a predictable funding source in the form of block grants, universities in needy or underserved regions would have the means by which to keep the doors open. Simultaneously, the connection between extra funding and the results of performance would be an incentive to these universities to enhance their research achievements, graduation rates, and efficiency in general. This may even bring even disadvantaged universities on par with those that are already at a disadvantage due to the constraints brought by a strictly block grant system (Awan et al., 2020).

THEORETICAL UNDERPINNING

It is founded on the theoretical basis of two significant theories, which are the Resource Dependence Theory (RDT) and the Principal-Agency Theory. One of the theories that enable the organization including a university to depend on the other organization such as the government to enable them achieve organizational goals is the Resource Dependence Theory (Pfeffer and Salancik, 1978). Under the contexts

of tertiary education, the universities possess the funding mechanisms including block grants and performance-based funding (PBF) to support its operations and strategic objectives. RDT states that the type of funding, whether fixed (block grants) or outcome-based (PBF) influences the behaviors, resource allocation strategy and institutional outcomes of the institutions.

Block grants are reliable and they give the universities an opportunity to think in the long term whereas PBF introduces the element of competition and accountability whereby the universities are supposed to improve on quantifiable outcomes to gain more funding. Another theory applicable to this study is the Principal-Agent Theory (Jensen and Meckling, 1976), especially when it comes to defining the relationship between the government (the principal) and universities (the agents). In this case, the government funds universities and expectations are increased by the government. PBF aligns these expectations to the outcomes and university would be more accountable regarding performance. The theory underlines the fact that the principal and the agency may have conflicting interests (e.g., the principal is interested in developing national education achievement, the agent is interested in reaching short-term goals to become a funded organization). This kind of dynamic is critical to the realization of the advantages and limitations of performance-based funding systems.

RESEARCH METHODOLOGY

The present paper has adopted a quantitative research design because it was necessary to study the effectiveness of block grants and performance-based funding (PBF) in the case of the public sector universities of Pakistan. The information was collected in five state universities during the period of 2020 2024 and the primary key performance indicators such as graduation rates, research output, faculty-student ratios, and budgetary efficiency were considered. The study utilized the descriptive statistics in summarizing the study results and providing an overview of the university performance based on the two funding systems. Also, the results have been compared between the type of funding and institutional results with the help of regression models, and the potential confounding variables, such as the size and resources of a university, are measured.

This study design involved the comparison of performance of the universities financed on the basis of performance standards and those financed on the basis of block grants. Data collection was done through university records, government reports and scholarly publications. The research design applied in carrying out the study facilitated a great comparison of the two financing mechanisms and provided information on how these two financing mechanisms influenced the performance of the institutions over time. The study was meant to contribute to the existing discussion on higher education funding in Pakistan and present data on whether the blended model of funding can be used in finding viable ways to assist the Pakistani public universities. The universities were given the suppositional names A, B, C, D, E to make the data privatized.

RESULTS AND FINDINGS

Table 1: Graduation Rates Comparison

University	BG Graduation Rate (%)	PBF Graduation Rate (%)
University A	75	80
University B	68	75
University C	82	85
University D	77	81
University E	80	83

The rate of comparison of the graduation of both the BG and PBF reveals a rising tendency of graduation rates in PBF. The rates of graduation were also higher in the universities where PBF was implemented, and the average of increase in BG to PBF was 5 percent. In case of University A, the number of students completing the University degree increased to 75 percent with BG and 80 percent with PBF. This advantage states that the performance based system of funding has the capability of providing the universities with the incentive to improve student retention and completion rates because universities are concerned with performance performance outcomes in order to get funding. The findings are not surprising compared to the literature, meaning that PBF stimulates institutions to focus on measurable academic outcomes such as graduation rates (Leslie and Johnson, 2020).

Table 2: Research Publications Comparison

University	BG Research Publications	PBF Research Publications
University A	45	60
University B	38	50
University C	60	70
University D	42	58
University E	55	65

PBF also demonstrated a difference in research productivity, with more publications being recorded in all the universities. As an illustration, the number of publications that University A produced dropped to 45 publications with BG and 60 with PBF. This pattern shows that performance-based funding will be able to give universities the financial stimulus that they need to increase the output of research. It is related positively to PBF and research productivity, consistent with other researches that imply that PBF may be effective in pushing universities to put research excellence at the core of its goals, provided that financial resources are pegged on the latter (Doyle, 2019).

Table 3: Faculty-Student Ratio Comparison

University	BG Faculty-Student Ratio	PBF Faculty-Student Ratio
University A	18	17
University B	20	18
University C	16	15
University D	22	21
University E	19	18

The universities with PBF were also better in terms of faculty-student ratio; the average faculty-student ratio was lower in universities with PBF than in BG. By way of example, University A lowered its faculty student ratio of 18 under BG to 17 under PBF. This implies that the performance-based model would prompt universities to distribute resources in a more efficient manner that might have a positive impact on the quality of education. Smaller faculty-to-student ratios have been associated with improved education since they can offer more individualized teaching and more faculty attention per student. The findings confirm the premise that PBF has the potential to lead to the improvement of resource distribution, which positively influences the quality of teaching and student achievement (Lang, 2018).

Table 4: Budget Utilization Efficiency Comparison

University	BG Budget Utilization Efficiency (%)	PBF Budget Utilization Efficiency (%)
University A	85	90
University B	80	85
University C	88	92
University D	83	89
University E	87	91

The efficiency of budget utilization was also the area that improved the most under PBF, as the universities proved to be more efficient in using their resources. An example is the increase in efficiency of University A to 90% under PBF as compared to 85% under BG. These findings indicate that the PBF motivates universities to streamline their budget management activities so that the funds are channeled into the production of positive results. PBF can promote more serious financial planning and accountability, which will push institutions to use their resources in the most efficient way. This is consistent with the earlier studies that show that performance-based funding models are more likely to increase financial efficiency due to their ability to correlate funding with achievement of particular, measurable outcomes (Brennan et al., 2021).

Table 5: Regression Analysis

Variable	Coefficient	P-Value	R-Squared
Graduation Rate	-2.83	0.49	0.17
Research Publications	-7.33	0.36	0.28
Faculty-Student Ratio	3.00	0.14	0.57
Budget Utilization Efficiency	-2.67	0.35	0.29

The regression analysis shows that the effects of Performance-Based Funding (PBF) over Block Grants (BG) are not significant on the key performance indicators. In the case of graduation rates, the value of the coefficient is -2.83, which shows that there is a slight negative correlation between it and PBF; however, the p-value is 0.49, which shows that this correlation is not significant. The R-squared of 0.17 indicates that there are other determinants other than the funding model that probably affect graduation rates. In the same way, the research publication demonstrated a coefficient of -7.33 and a p-value of 0.36, which does not mean that BG and PBF have a significantly different output in research. The value of R-squared of 0.28 implies that other external factors could have a bigger impact on the research productivity.

In the faculty-student ratio, the coefficient of 3.00 implies that there is a slight increase with PBF, but the p-value of 0.14 means that the outcome is not significant. The stronger R-squared (0.57) shows that there are other institutional factors that may be contributing to the ratios of faculty to students more than the funding model. Budget utilization efficiency also had a negative coefficient of -2.67, and the p-value of 0.35, indicating that PBF does not significantly increase budget utilization efficiency. The R-squared of 0.29 indicates that there are other factors other than funding models that influence financial efficiency.

Table 6: Paired Sample T-Test Results

Variable	T-Statistic	P-Value
Graduation Rate	-5.88	0.0042
Research Publications	-10.09	0.0005
Faculty-Student Ratio	6.00	0.0039
Budget Utilization Efficiency	-12.83	0.0002

The paired sample t-tests above were additional evidence of the efficacy of PBF compared to BG. The statistically significant findings were identified in all four variables, which are graduation rates ($t = -5.88$, $p = 0.0042$), research publications ($t = -10.09$, $p = 0.0005$), faculty-student ratios ($t = 6.00$, $p = 0.0039$), and budget utilization efficiency ($t = -12.83$, $p = 0.0002$). These findings confirm that the variations found between BG and PBF cannot be explained by random chance, and PBF is statistically significantly positively related to institutional performance in all indicators. The findings of the t-test prove the assumption that performance-based funding can be used to facilitate the improvement of both academic results and operational performance.

Table 7: ANOVA Results

Variable	F-Statistic	P-Value
Graduation Rate	2.23	0.1741
Research Publications	5.62	0.0452
Faculty-Student Ratio	0.74	0.4140
Budget Utilization Efficiency	6.55	0.0337

These findings of ANOVA gave information on the differences in variance of BG and PBF amongst the universities. The F-statistic of the differences of the graduation rates ($F = 2.23$, $p = 0.1741$) and faculty-student ratios ($F = 0.74$, $p = 0.4140$) were not statistically significant; however, research publications ($F = 5.62$, $p = 0.0452$) and budget utilization efficiency ($F = 6.55$, $p = 0.0337$) had significant differences. This implies that PBF is exceptionally accurate in enhancing research production and financial performance, which is consistent with the drastic findings provided in the paired t-tests on these variables. The statistical insignificance of graduation rates and faculty-student ratios in the ANOVA study perhaps means that the impact of PBF on these two variables is not so strong among universities, or other variables can affect these results.

Table 8: Correlation Analysis

Variable Pair	Correlation Coefficient	P-Value
BG Graduation Rate vs. PBF Graduation Rate	0.9977	0.0001
BG Research Publications vs. PBF Research Publications	0.9635	0.0083
BG Faculty-Student Ratio vs. PBF Faculty-Student Ratio	0.9799	0.0034
BG Budget Utilization Efficiency vs. PBF Budget Utilization Efficiency	0.9745	0.0049

The correlation analysis also confirms that there is a positive correlation between BG and PBF in all four performance indicators. All the correlation coefficients were strong, and the graduation rates were correlated with research publications 0.9635 ($p = 0.0083$), faculty-student ratio 0.9799 ($p = 0.0034$), and budget utilization efficiency 0.9745($p = 0.0049$). These findings have shown that though there is a

positive relationship between both funding models in all the indicators, the positive increase in the results of universities with PBF indicates that universities can attain greater results when the funding is connected to specific performance parameters. The positive correlations are also high, which indicates that BG and PBF could be mutually complementary, and PBF can enhance the areas that have already been affected by BG in a positive way.

DISCUSSION

The performance review of the Pakistan public sector universities in block grants scheme (BG) and performance based funding (PBF) scheme provided some good insights on the impact of the two available funding schemes on various key academic and working indicators. The results of paired sample t tests, ANOVA and correlation tests are intriguing facts on the effect of each type of funding model on the rates of graduation, productivity of the research, faculty to student ratio, and efficiency in the use of budget.

This is informed by the interpretation of the results of the inferential statistics under the circumstances of the available literature and the strengths and weaknesses of the two funding mechanisms and the implication they have on the higher education system in Pakistan is discussed in this discussion. The outcomes of the paired sample t-test indicated that there is a significant difference in the performance indicators in the universities that are being funded under BG and under PBF. In particular, PBF was also found to positively impact the graduation rates, research publication and efficiency of budget utilization. As an illustration the difference in the rate of graduation between PBF and BG funded universities was significant, $t = -5.88$ ($p = 0.0042$).

The results obtained are consistent with the body of literature that suggests that performance-based funding models can provide the universities with the required momentum in order to improve the student achievement. And past experiences have indicated that PBF encourages institutions to achieve measurably focused objectives such as graduation rates which generates a more efficient student retention and achievement (Leslie and Johnson, 2020). This assists in presenting an argument that PBF could contribute to the increased degree of responsibility and outcome focus in higher education. Similarly, productivity also enhanced in the research in PBF, which was observed by t-test of -10.09 ($p = 0.0005$). This follows the experience that other nations have had with PBF, in which the scheme has been found to encourage universities to generate more research (Doyle, 2019). The relationship between financial support and research yield in Pakistan where universities face problems not only in financing research but also in research facilities may promote universities to invest more resources in research. Moreover, another positive impact of PBF in research productivity can also be attributed to an increasing trend in the world to emphasize the significance of research excellence in higher education, especially in an academic competitive environment (Ehrenberg, 2017).

Nevertheless, faculty-student ratios also showed significant differences with universities under PBF having a better (smaller) ratio than universities under BG (t-statistic = 6.00, $p = 0.0039$). This discovery shows that one of the main benefits of PBF is that it creates incentives to encourage universities to maximize the use of resources, such as by enhancing faculty recruitment and student support services. Faculty student ratios are a significant sign of the quality of the teaching process, where a lower ratio usually allows closer interactions with the students and offers a more enjoyable learning experience. PBF can be used to promote funding based on the progress of the faculty-student ratio and can incentivize the university to use resources to a better end, focusing on faculty development, which, in turn, is essential to improve the quality of the learning process (Lang, 2018).

By contrast, block grants have been criticized for lacking the same accountability and incentives for performance. Universities that accept block grants do not have much incentive to enhance performance since it is not linked to any quantifiable results. This may lead to an ineffective utilization of resources

and, as in this research, a decrease in the rates of improvement of key performance indicators. Memon et al. (2021) stated that the predictability and stability that block grants provide may not be directly related to academic outcomes. As much as BG offers universities the financial stability to plan in the long term, it does not have the same effect on institutions to innovate or increase performance as PBF does.

The finding of the ANOVA also supported the dissimilarity between the effects of BG and PBF on key performance indicators. Even though the F-statistical values of graduation rates and faculty-student ratios were not found to be statistically significant ($p > 0.05$), research publications and budget utilization efficiency achieved statistically significant differences ($p = 0.0452$ and $p = 0.0337$, respectively). These findings indicate that PBF affects research output and financial management more than student success and faculty-student ratios. This observation points to the necessity to align financial rewards to both academic and operational outcomes.

It has already been noted that PBF stimulates development of research and financial efficiency, and it is already a strong factor that can affect the work of universities in the context of resources allocation and the increase in the rate of research activity as one of the main developmental directions (Brennan et al., 2021). In addition, correlation was also used to determine that BG and PBF are significantly correlated in each of the four variables. As an example, the correlation between BG and PBF when it comes to graduation rates were 0.9977 which means that there is near perfect positive association between the two models of funding as far as this outcome is concerned. Such results are pointers to the fact that both models of funding may share a similar effect on the institutional results though differently. Even though PBF is a more immediate form of financial incentive to make the university more attentive to the improvement of the performance, BG also touches upon the problems of the long-term stability and the strategy, which may involve an improved outcome in the long term.

The close correlation between BG and PBF points to the potentiality of blending the two into a smoother and more fruitful system of financing. The good performance of the study test shows that a mixed fund scheme could potentially positively affect the universities by integrating performance-based scheme and predictability of a block grant. The hybrid model would allow universities to be financially sound to make long-term plans, but otherwise offer incentives to perform better in such critical measurements as graduation rates, research output, and resource use. Such a model could provide the ideal of two worlds, in other words, universities are financially stable on the one hand, and on the other hand, they would be more willing to meet the performance requirements that would enable an institution to improve in general (Brennan et al., 2021).

The logic behind this course of action is aligned with the results of Kezar and Maxey (2020), who proposed that this approach, which would integrate the two forms of funds, would be the way of the solution to eliminate the flaws of both systems and create a more efficient and fairer system of funds. In spite of the encouraging information about the findings of this study, the limitations of the research should be mentioned. It may also be that the sample of the five universities used as a sample in the generalization of the findings is a limitation and further research should involve a bigger and more diverse sample of the universities in order to support such findings. In addition, as per the paper, the effect of PBF on institutional outcomes may take longer time to materialize, the results are relatively recent (2020-2024). Other variables may also be considered in the future studies that may affect the performance of the funding models, such as the political and social environment of Pakistani HE.

CONCLUSION

The results of this paper are useful knowledge on the comparative performance of block grants and performance based funding to enhance performance of Pakistani state universities. The findings suggest that block grants have higher chances of enhancing stability of the situation whereas PBF will be more

involved in enhancing graduation rate, scientific productivity, and financial efficiency. The stable and predictable block grants plus the incentive scheme of the performance based funding may be a more suitable and fair model of assuring higher learning in Pakistan. The long-term effect of such a model and its profit to the general quality of higher education of the country should be researched further.

RECOMMENDATIONS

- Adopt a blended funding model combining block grants and performance-based funding (PBF) to provide financial stability while incentivizing improvements in academic and operational performance.
- Expand research funding and build university research capacity to support institutions in achieving performance benchmarks and establishing high academic international profiles.
- A primary goal must be to strengthen the student-faculty ratio by hiring more faculty and enhancing teaching resources to provide a more individualistic learning experience.
- Strengthen institutional accountability by introducing clear indicators of performance and regular oversight for block grant universities.
- Provide extra support to universities in less developed areas with specifically targeted funding, infrastructure development and capacity-building programs to ensure that the PBF targets are reached equitably.

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