

## Application of Performance-Based Funding and Resource Model for Open and Distance Learning Programmes in Rivers State Tertiary Institutions

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### ABSTRACT

Open and Distance Learning (ODL) has increasingly become a critical pathway for expanding access to tertiary education in Nigeria, yet its effectiveness depends largely on the availability of adequate funding systems and structured resource allocation models that respond to its unique technological and pedagogical demands. The descriptive survey research design was adopted. The population of the study was 1200 lecturers. The sample of the study stood at 312 using stratified random sampling technique. Data were collected using a validated questionnaire titled "Performance-Based Funding, Resource Allocation and ODL Quality Scale (PBFR-ODL)" which yielded a reliability coefficient of 0.87 using Cronbach's Alpha. Descriptive statistics were used to answer the research questions, while multiple regression analysis was used to test the hypotheses at 0.05 significant level. Findings revealed that performance-based funding mechanisms were poorly implemented, and existing resource allocation models were inadequate for supporting ODL activities such as ICT infrastructure, staff training, and digital content development.

The study concludes that the absence of structured funding and resource frameworks undermines ODL sustainability and quality. The study recommends among others that tertiary institutions should adopt comprehensive performance-based funding systems and ODL-specific resource allocation models to enhance programme effectiveness

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## **INTRODUCTION**

Open and Distance Learning (ODL) has become an essential mode of widening access to higher education in Nigeria. In Rivers State, tertiary institutions increasingly rely on ODL programs to accommodate diverse learners, address infrastructural limitations, and enhance lifelong learning opportunities. However, the sustainability and effectiveness of ODL programs depend largely on funding patterns and resource allocation systems. Globally, performance-based funding (PBF) is used as a strategic approach to encourage accountability, institutional efficiency, and improved learning outcomes. Resource allocation models for ODL, on the other hand, determine the distribution of financial, technological, and human resources required for effective program delivery. Despite their relevance, literature suggests that Nigerian tertiary institutions struggle with inadequate funding, weak performance metrics, underutilization of technology, and inefficient resource management in ODL (Ojo, 2020; Nwosu, 2021).

Open and Distance Learning (ODL) has become a mainstream strategy for expanding tertiary institution access, improving equity, and enhancing lifelong learning opportunities worldwide (UNESCO, 2019). In sub-Saharan Africa, and Nigeria specifically, ODL is increasingly important because traditional campus-based systems cannot alone absorb growing demand for higher education or meet the needs of non-traditional learners (COL, 2022; World Bank, 2022). Rivers State tertiary institutions, like many state and federal institutions in Nigeria, are adopting ODL modalities to broaden participation and to address constraints such as limited physical infrastructure, geographic access, and working-student schedules (Eke & Nwosu, 2020; Ojo, 2020). However, the potential of ODL to deliver high-quality learning depends fundamentally on how programs are financed and how resources are allocated. Two management levers repeatedly flagged in the recent literature as critical for ODL performance are Performance-Based Funding (PBF), i.e., funding mechanisms that tie financial allocations to clearly defined performance indicators, and Resource Allocation Models (RAM) tailored to the needs of distance and digital learning (World Bank, 2022; UNESCO, 2019). The dependent outcome of interest in this research is ODL Program Quality, a multi-dimensional construct that captures instructional design, learner support, technology reliability, completion/retention outcomes, and student satisfaction (ICDE Quality Network, 2023; UNESCO, 2023). Performance-based funding (PBF) refers to financing mechanisms that allocate resources to institutions (or units within institutions) based on measurable outputs or outcomes (e.g., student completion rates, progression, graduate employability, research outputs) rather than solely on historic budgets or enrollment headcounts (World Bank, 2022; Matveeva, 2025). PBF aims to improve accountability, incentivize results, and direct scarce public funds toward demonstrable outcomes (World Bank, 2022; Cruz, 2022). Learner retention and completion rates in ODL offerings (timely course completion and program graduation), learner engagement and satisfaction (surveyed satisfaction, response time of tutors).

Quality of learning materials and e-content (peer review score or instructional design benchmarks), technology uptime and access metrics (LMS availability, average broadband latency for learners), and outcomes beyond the course (employment or further study after graduation where measurable) Empirical evaluations show that PBF can lead to improved institutional focus on measurable outcomes, but effects vary with indicator design, data quality, and institutional capacity to respond to incentives (World Bank, 2022; Matveeva, 2025). Poorly designed PBF can produce perverse effects (e.g., gaming of metrics or neglect of unrewarded activities), so careful indicator selection and safeguards are essential (Cruz, 2022; Matveeva, 2025). In survey and institutional data research, operational measures for PBF commonly combine the presence/extent of formal PBF policy (binary/ordinal), the proportion of institutional budget linked to performance metrics (percentage), and the perceived strength of performance-orientation Likert scales from staff surveys. Studies typically triangulate administrative data (completion rates, disbursement records) with staff perceptions (questionnaire items) to capture both policy existence and implementation quality (World Bank, 2022; Ibe, 2018).

The Resource Allocation Model (RAM) describes the rules, criteria, and procedures through which financial, human, and technological resources are distributed across programs and units (Eke & Nwosu, 2020; Nwosu, 2021). For ODL, RAM must account for non-traditional cost centers (e.g., LMS licensing, instructional design teams, studio production, server and bandwidth costs, remote learner support) that differ from on-campus teaching needs (UNESCO, 2019). Common resource allocation approaches relevant to ODL include: Activity-based allocation: resources follow discrete ODL activities (content development, facilitation, and assessment). Cost-driver allocation: resources assigned based on cost drivers (number of registered online course credits, multimedia hours produced). Formula allocation with ODL weights: base funding formulas augmented with weights to reflect higher unit costs of ODL (e.g., distance delivery weight factor). Hybrid models: combine base funding for fixed costs with performance or activity components for variable costs.

Design considerations emphasized in the literature are transparency, predictability, alignment with strategic goals, and sufficient allocation for ICT maintenance and continuous professional development (Eke & Nwosu, 2020; Nwosu, 2021; UNESCO, 2019). In low-resource contexts, predictable recurring funding (for bandwidth, LMS hosting, and learner support) is especially important because one-off capital funding (e.g., for initial platform purchase) does not sustain operations (Ojo, 2020; Ekong, 2024). RAM can be operationalized by documenting the existence of a formal allocation model for ODL (yes/no); assessing adequacy (staff perceptions and objective indicators such as per-learner ODL budget); measuring timeliness of disbursements and proportion of ODL needs covered; and evaluating alignment between allocated resources and ODL priorities (e.g., percent of ICT requests fulfilled within plan). Empirical studies combine budget line analysis with stakeholder surveys to evaluate both financial flows and perceived adequacy (Eke & Nwosu, 2020; Nwosu, 2021).

Quality in ODL is multi-dimensional: instructional design quality, technological reliability, learner support and interaction, assessment integrity and feedback, accreditation compliance, and outcomes such as retention, completion, and learner satisfaction (ICDE Quality Network, 2023; UNESCO, 2023). The ICDE and UNESCO reviews emphasize that digital readiness, pedagogy adapted to online modalities, and robust learner support are decisive quality drivers (UNESCO, 2019; ICDE, 2023). Research measures ODL quality through a mixture of administrative metrics (retention and completion rates), student satisfaction surveys (Likert scales), and expert rubric assessments of course design (ICDE, 2023; UNESCO, 2023).

Composite indexes that combine quantitative outcomes and perception-based items are commonly used to create an overall quality score suitable for regression analysis. Recent literature indicates that both PBF and RAM matter for the performance of higher education and distance education programs, but their effectiveness depends on design, implementation capacity, and contextual factors (World Bank, 2022; Matveeva, 2025; UNESCO, 2019). Studies across African contexts highlight funding shortfalls and the need to tailor allocation models to the recurrent and technical demands of ODL (Eke & Nwosu, 2020; Ekong, 2024). Where PBF is implemented with careful metrics and safeguards, institutions demonstrate improved attention to completion and learner support; however, weak data systems and capacity constraints can limit PBF's effect (World Bank, 2022; Cruz, 2022).

### **Statement of the Problem**

Open and Distance Learning (ODL) has become a critical pathway for expanding access to tertiary education in Nigeria, particularly in contexts where traditional universities face infrastructural and enrolment pressures. In Rivers State, where demand for higher education continues to rise, ODL programs serve as a strategic mechanism for reaching working adults, remote learners, and underserved populations. However, despite the importance of ODL, the quality and sustainability of ODL programs in Rivers State tertiary institutions remain significantly compromised. The literature highlights that funding models and resource allocation practices are central determinants of ODL effectiveness (UNESCO, 2019; Eke & Nwosu, 2020; World Bank, 2022), yet these systems remain weak, inconsistent, or poorly implemented in many Nigerian institutions (Ojo, 2020; Nwosu, 2021). One major problem is the absence or weak implementation of performance-based funding (PBF).

While many countries now link funding to substantive performance indicators such as retention, completion, content quality, digital readiness, and learner satisfaction (Matveeva, 2025; World Bank, 2022), institutions in Rivers State rely predominantly on conventional budgeting mechanisms. These funding structures are not tied to measurable outputs or outcomes, making it difficult to incentivize improvements in ODL performance. As a result, ODL units continue to operate without performance accountability, and there is no financial reward for achieving excellence or sanctions for poor-quality delivery. In addition, ODL programs in Rivers State struggle with poorly defined or inconsistent resource allocation models (RAM). Resource allocation often follows traditional

classroom-based budgeting approaches, which fail to account for the unique needs and recurrent costs of ODL such as LMS licensing, server hosting, multimedia content development, bandwidth, instructional design expertise, and continuous staff digital training (Eke & Nwosu, 2020; UNESCO, 2019). Without a dedicated resource allocation model, ODL units receive inadequate or irregular funding, leading to systemic inefficiencies and program stagnation. Furthermore, ODL quality in the region is hampered by challenges such as outdated digital infrastructure, insufficient learner support systems, irregular internet connectivity, inconsistent staff training, and limited institutional monitoring mechanisms (ICDE, 2023). The combination of weak PBF structures, inadequate resource allocation, and poor quality assurance significantly undermines the ability of tertiary institutions to deliver high-quality, competitive, and student-centered ODL services. These systemic weaknesses create a critical gap that requires empirical investigation. Understanding how performance-based funding and resource allocation models affect ODL quality will provide evidence needed to redesign funding frameworks and align resource decisions with performance expectations. Despite the relevance of these issues, very few empirical studies have examined the interaction between PBF, resource allocation, and ODL program quality in Rivers State, creating a knowledge vacuum that this study intends to fill, absence of structured performance-based funding for ODL Funding is not linked to performance indicators such as completion, retention, learner satisfaction, or digital readiness.

ODL units lack incentives to improve quality. No financial repercussions for poor performance, reliance on traditional budgeting systems unsuitable for ODL Annual budgets are based on historical patterns rather than performance or need. Funding does not reflect the technological, instructional, or support demands of online programs. Weak or nonexistent resource allocation models (RAM) specific to ODL No consistent resource distribution framework for ICT, LMS, staff training, or content production. Allocation decisions are often arbitrary, delayed, or ad hoc. Inadequate ICT infrastructure and digital learning resources Frequent LMS downtime, insufficient bandwidth, lack of server capacity. Outdated or poorly designed digital learning materials. Insufficient learner support systems Slow response times from tutors and helpdesk staff.

In summary, despite the potential of ODL to widen educational access in Rivers State, ODL programs face profound challenges arising from weak funding mechanisms, inadequate resource allocation models, and poor quality assurance structures. The absence of performance-based funding, coupled with ineffective allocation of digital, human, and infrastructural resources, has resulted in suboptimal ODL implementation. These deficiencies impede learner retention, reduce satisfaction, and compromise overall program quality. As a result, there is an urgent need for evidence-based research to examine how performance-based funding and resource allocation models affect ODL quality in Rivers State tertiary institutions and to propose actionable models for sustainable ODL development. Despite the importance of ODL in widening access to higher education, its quality in Rivers State tertiary institutions remains questionable. Persistent problems include inconsistent funding, weak performance-based

budgeting, poor ICT infrastructure, understaffed ODL units, and lack of structured resource allocation models. These challenges limit program effectiveness and reduce credibility. There is limited empirical evidence on how performance-based funding and resource allocation models affect ODL program quality in Rivers State, hence the need for this study.

### **Purpose of the Study**

The purpose of this study is to examine the application of a developmental performance-based funding system and an appropriate resource allocation model for enhancing the effectiveness of Open and Distance Learning (ODL) programs in Rivers State tertiary institutions. Specifically, the study seeks to:

1. determine the extent to which developmental performance-based funding mechanisms are currently implemented in ODL programs across Rivers State tertiary institutions.
2. examine the adequacy, structure, and effectiveness of existing resource allocation models used to support ODL operations in Rivers State tertiary institutions.
3. assess the influence of developmental performance-based funding and resource allocation models on the quality, delivery efficiency, and overall performance of ODL programs in Rivers State tertiary institutions.

### **Research Questions**

Based on the purposes of the study, the following research questions guide the investigation:

1. To what extent are developmental performance-based funding mechanisms implemented in ODL programs within Rivers State tertiary institutions?
2. How adequate, structured, and effective are the existing resource allocation models used to support ODL programs in Rivers State tertiary institutions?
3. What influence do developmental performance-based funding and resource allocation models have on the overall quality and performance of ODL program delivery in Rivers State tertiary institutions?

### **Research Hypotheses**

The following null hypotheses were tested at a 0.05 level of significant:

1. Developmental performance-based funding has no significant influence on the quality and performance of ODL program delivery in Rivers State tertiary institutions.
2. The existing resource allocation model has no significant influence on the quality and performance of ODL program delivery in Rivers State tertiary institutions.
3. Developmental performance-based funding and resource allocation models combined do not significantly predict the quality and performance of ODL program delivery in Rivers State tertiary institutions.

## **METHODOLOGY**

The study adopted a descriptive survey research design. This design is appropriate because the study seeks to collect data on existing conditions,

perceptions, practices, and relationships regarding developmental performance-based funding, resource allocation models, and ODL program quality in Rivers State tertiary institutions. Based on data obtained from institutional ODL centers and administrative units, an estimated 1,200 personnel constitute the target population. A sample size of 312 respondents was used for the study.

The sample size was 312 using stratified random sampling technique was adopted to ensure representation across four key strata involved in ODL service delivery. The instrument used for data collection was a structured questionnaire titled “Performance-Based Funding, Resource Allocation and ODL Quality Scale (PBFR-ODL Scale).” The instrument was divided into four sections. The questionnaire items were structured on a five-point Likert rating scale of Strongly Agree (5 points), Agree (4 points), Undecided (3 points), Disagree (2 points) and Strongly Disagree (1 point).

The reliability of the instrument was established through a pilot test conducted with 30 respondents from a tertiary institution in Rivers State that was not part of the main study. The responses were analyzed using Cronbach’s Alpha, yielding the following results: Performance-Based Funding scale:  $\alpha = 0.84$ , Resource Allocation Model scale:  $\alpha = 0.86$ , ODL Program Quality scale:  $\alpha = 0.88$ , Overall instrument reliability:  $\alpha = 0.87$ . These reliability coefficients indicate that the instrument possesses high internal consistency and is suitable for use in the main study. Data collected were analysed using both descriptive and inferential statistical methods. On research questions, item with mean value of 2.50 and above was taken as high while mean value less than 2.50 was taken as low. For hypothesis testing, the decision was based on the f-value.

## RESEARCH RESULTS

**Research Question 1:** To what extent are developmental performance-based funding mechanisms implemented in ODL programs within Rivers State tertiary institutions?

**Table 1: Mean and Standard Deviation of Responses on the Extent of Developmental Performance-Based Funding Implementation (N = 312)**

S/N	Performance-Based Funding Items	$\bar{X}$	SD	Decision
1.	Performance indicators are clearly defined for ODL funding decisions	0.83	2.21	Low
2.	ODL funding is linked to learner retention and completion rates	2.05	0.74	Low
3.	Annual performance reviews influence budget allocations for ODL units	0.79	2.18	Low
4.	Funding rewards ODL units that achieve developmental targets.	2.32`	0.86	Low
5.	Measurable learner outcomes are used as criteria for ODL budget approval	2.40	0.92	Low
6.	Performance data are regularly collected to guide ODL funding	2.29	0.88	Low

7.	Funding for ODL is transparent and based on documented performance measures	2.10	0.81	Low
8.	Incentives exist for staff who meet ODL performance expectations	2.17	0.78	Low
9.	Performance indicators for ODL are periodically reviewed and updated	0.91	2.38	Low
10.	External grants/subventions depend on demonstrated ODL performance	0.84	2.15	Low
<b>Cluster Mean</b>		<b>2.23</b>	<b>2.15</b>	<b>Low</b>

Source: Cluster Mean = 2.23 (Low Implementation)

The results in Table1: reveal that all ten items measuring developmental performance-based funding fall below the criterion mean of 2.50, indicating low implementation of PBF mechanisms across tertiary institutions in Rivers State. Specifically, respondents reported that: Performance indicators for ODL are not clearly defined ( $\bar{x} = 2.21$ ). Funding decisions are not linked to learner retention and completion rates ( $\bar{x} = 2.05$ ). Annual reviews do not significantly influence ODL budget distribution ( $\bar{x} = 2.18$ ). Incentive structures for achieving ODL performance targets are weak or nonexistent ( $\bar{x} = 2.17$ ). Transparency and regular performance measurement remain inadequate ( $\bar{x} = 2.10$ ). External funders and government rarely tie support to verified performance outcomes ( $\bar{x} = 2.15$ ). The overall cluster mean of 2.23 suggests that developmental performance-based funding is poorly implemented in the sampled institutions. The findings indicate that tertiary institutions in Rivers State have not fully adopted performance-based funding models in the management of their ODL program. Although PBF is globally recognized as a mechanism for improving quality, accountability, and learning outcomes, its uptake in the study area remains limited. The absence of clear indicators, weak performance monitoring systems, lack of incentives, and absence of performance-linked grants collectively constrain the effectiveness and sustainability of ODL initiatives. This implies that ODL funding in Rivers State remains largely traditional, incremental, and not tied to measurable developmental outcomes. As a result, ODL units may lack the motivation and structured financial support needed to drive improvements in learner engagement, course delivery, infrastructure development, and program completion rates.

**Research Question 2:** How adequate, structured, and effective are the existing resource allocation models used to support ODL program in Rivers State tertiary institutions?

**Table 2: Mean and Standard Deviation of Responses on the Adequacy of Resource Allocation Models for ODL (N = 312)**

S/N	Resource Allocation Model Items	$\bar{X}$	SD	Decision
1.	The institution has a clearly documented resource allocation model for ODL	2.44	0.91	Low
2.	ICT infrastructure (servers, LMS, internet) receives adequate funding	2.31	0.87	Low

3.	Funding is regularly provided for the development of digital learning materials	2.18	0.84	Low
4.	Learner support services are adequately financed in ODL programs	2.36	0.80	Low
5.	Staff training in ODL pedagogy and ICT is sufficiently funded	2.28	0.76	Low
6.	Resource allocation for ODL is timely and predictable	2.09	0.82	Low
7.	The budgeting process considers all major cost components of ODL	2.25	0.89	Low
8.	Resource allocation decisions are transparent and involve stakeholders	2.33	0.85	Low
9.	Funds are allocated for maintenance and upgrading of ODL facilities	2.30	0.79	Low
10.	Resource allocation aligns with institutional ODL strategic objectives	2.47	0.90	Low
	<b>Cluster Mean</b>	<b>2.30</b>	<b>0.90</b>	<b>Low</b>

Source: Cluster Mean = 2.30 (Low Adequacy)

The results in Table 2 show that all items measuring the adequacy and structure of the resource allocation model fall below the criterion mean of 2.50. This indicates low adequacy PBF the resource allocation models currently used in Rivers State tertiary institutions as inadequate, weakly structured, and insufficient to support the needs of ODL programs. Institutions lack clearly documented and fully functional resource allocation models for ODL ( $\bar{x} = 2.44$ ). critical for ODL is underfunded ( $\bar{x} = 2.31$ ). Funding for digital content development, including multimedia and instructional design, is poor ( $\bar{x} = 2.18$ ). Learner support services, such as tutoring and helpdesk support, are not adequately financed ( $\bar{x} = 2.36$ ). Staff training in online pedagogy and ICT receives insufficient funding ( $\bar{x} = 2.28$ ). Funding is not timely or predictable, affecting planning and sustainability ( $\bar{x} = 2.09$ ). Maintenance and upgrading of ODL facilities are underfunded ( $\bar{x} = 2.30$ ). Allocation decisions lack transparency and involvement of relevant stakeholders ( $\bar{x} = 2.33$ ). The overall cluster mean of 2.30 confirms a low level of resource allocation adequacy, indicating significant gaps between existing resource provision and the actual requirements of ODL operations.

**Research Question 3:** What influence do developmental performance-based funding a Table 4.3: Multiple Regression Summary for the Influence of PBF and RAM on ODL Program Quality (N = 312).

**Table 3: Mean and Standard Deviation Showing the Influence of Resource Allocation Model on ODL Quality, Delivery Efficiency, and Overall Performance (N = 312)**

S/N	Items on Influence of Resource Allocation on ODL Performance	$\bar{X}$	SD	Decision
1.	Adequate resource allocation improves the structural quality of ODL courses	2.41	0.88	Low

2.	Sufficient funding enhances the reliability of ODL learning technologies	2.35	0.84	Low
3.	Well-funded ODL units provide high-quality instructional materials	2.47	0.90	Low
4.	Resource allocation directly improves student support services and responsiveness	2.29	0.82	Low
5.	Proper allocation of ICT resources increases delivery efficiency of ODL programs	2.33	0.86	Low
6.	Regular funding boosts staff competence and teaching effectiveness in ODL	2.44	0.79	Low
7.	Adequate resources improve student retention and completion rates	2.38	0.91	Low
8.	Continuous investment in ODL infrastructure enhances program credibility	2.36	0.83	Low
9.	Effective resource allocation improves assessment and feedback mechanisms	2.41	0.85	Low
10.	Overall ODL program performance depends on timely and sufficient resource allocation	2.50	0.92	Moderate
<b>Cluster Mean</b>		<b>2.39</b>	<b>0.90</b>	<b>Low</b>

Source: Cluster Mean = 2.39 (Low Influence)

Results from Table 3 show that Low Influence in Nine (9) out of ten items recorded means below 2.50, indicating low perceived influence. Only one item (“Overall ODL program performance depends on timely and sufficient resource allocation”) met the criterion mean of 2.50, indicating moderate agreement. The cluster means of 2.39 signifies that respondents generally believe the resource allocation model has a low level of influence on the quality, delivery efficiency, and performance of ODL programs as currently practiced in Rivers State tertiary institutions. Limited improvement in ODL quality due to inadequate resource allocation Respondents perceived that poor resource allocation limits: Course quality, Digital learning material development, Staff training and Student support systems.

**Statistical Test of Hypotheses**

1. There is significant difference between the mean opinion scores of Mean and Standard Deviation of Responses on the Extent of Developmental Performance-Based Funding Implementation in ODL programs in Rivers State tertiary institutions.

**Table 4: Regression Analysis on Developmental Performance-Based Finding Mechanism implement in ODL Programmes within Rivers State Tertiary Institution**

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.720	2	28.366	166.67	0.000*
Residual	0.518	309	0.170	-	-
<b>Total</b>	<b>518.72</b>	<b>311</b>	<b>-</b>	<b>-</b>	<b>-</b>

Source: field survey, 2025.

The result on Table 4 above shows Regression value of 0.720 shows a strong positive relationship between the predictors (PBF and RAM) and ODL program quality. The  $R^2$  value of 0.518 indicates that 51.8% of the variation in ODL quality is jointly explained by PBF and RAM.

1. Influence of Developmental Performance-Based Funding (PBF)  $\beta = 0.38$  (Standardized)  $t = 6.12, p < 0.05$ . Developmental performance-based funding has a significant positive influence on ODL program quality. A one-unit increase in PBF results in a 0.28 increase in the ODL quality score ( $B = 0.28$ ), controlling for RAM.
2. There is no significant difference between the mean opinion scores of Mean and Standard Deviation of Responses on the Extent of Developmental Performance-Based Funding Implementation in ODL program in Rivers State tertiary institutions.

**Table 5: ANOVA Analysis on Adequacy, Structure and Effectiveness of Existing Resources Allocation Models used to Support ODL Operations in Rivers State Tertiary Institutions.**

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	56.731	2	28.366	166.67	0.000*
Residual	52.586	309	0.170	-	-
<b>Total</b>	<b>109.317</b>	<b>311</b>	-	-	-

Source: field survey, 2025.

The result on Table 5 above shows F-value of 166.67 with  $p < 0.05$  indicates that the regression model is statistically significant. This means developmental performance-based funding and the resource allocation model jointly have a significant influence on ODL program quality. Coefficient Table. Influence of Resource Allocation Model (RAM)  $\beta = 0.45 t = 7.35, p < 0.05$ . The resource allocation model also has a significant positive influence on ODL program quality. A one-unit improvement in RAM results in a 0.34 increase in the ODL quality score ( $B = 0.34$ ), controlling for PBF. RAM shows a stronger influence than PBF because  $\beta = 0.45 > 0.38$ .

3. There is no significant difference between the mean opinion scores of Mean and Standard Deviation of Responses on the Extent of Developmental Performance-Based Funding Implementation in ODL programs in Rivers State tertiary institutions.

**Table 6: Coefficients Analysis on the Influence of Developmental Performance Based Funding and Resource Allocation Models on the Quality, Delivery Efficiency and Overall Performance of ODL Programms in Rivers State Tertiary Institution.**

Predictor	(B)	Std. Error	Standardized Beta ( $\beta$ )	t-value	Sig.
Constant	0.90	0.18	—	5.00	0.000
PBF	0.28	0.05	0.38	6.12	0.000

RAM	0.34	0.05	0.45	7.35	0.000
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Source: field survey, 2025.

The result on Table 6 above shows Joint Influence of PBF and RAM on ODL Quality; The model explains 51.8% ( $R^2 = 0.518$ ) of the variance in ODL program quality. This means more than half of what determines ODL quality in Rivers State tertiary institutions is predicted by: how performance-driven their funding systems are; and how adequate, structured, and functional their resource allocation models are. Narrative Summary of RQ3

**DISCUSSION**

Result from table 1 shows the extent of developmental performance-based funding implementation findings revealed that developmental performance-based funding (PBF) mechanisms are poorly implemented in Rivers State tertiary institutions. All indicators measuring PBF such as the existence of defined performance metrics, funding linked to learner completion, periodic review of performance indicators, and use of performance data to guide funding recorded mean values below the criterion mean of 2.50. This indicates that institutions rely heavily on traditional, incremental, or historical budgeting approaches, rather than linking funding to measurable developmental outcomes. The absence of incentives for performance, weak data systems, and lack of measurable indicators further confirm that PBF is still largely conceptual, rather than implemented. This finding aligns with international evidence that institutions in developing contexts often struggle to adopt PBF due to weak data structures, inadequate training, and lack of performance monitoring systems (World Bank, 2022; UNESCO, 2019). Without performance-linked funding, institutions lack motivation to improve course design, learner support, retention, and overall program quality.

Result from Table 2 shows adequacy of resource allocation models for ODL that the resource allocation models (RAM) used to support ODL programs are largely inadequate, unstructured, and insufficient. The cluster mean (2.30) indicates that essential components of ODL such as ICT infrastructure, staff training, digital materials development, maintenance, and learner support are not adequately funded. Respondents reported that resource allocation is neither timely nor transparent and often fails to address the unique recurring needs of ODL programs. This is consistent with previous studies that note that ODL requires substantial investment in digital infrastructure, multimedia content, technical support, and professional capacity building (Eke & Nwosu, 2020). The inadequacy of RAM limits effective course delivery, slows adoption of technology, and contributes to student dissatisfaction and dropout rates. Without structured and predictable resource allocation, ODL programs cannot function sustainably.

Result from Table 3 influence of PBF and RAM on ODL quality regression results showed that both PBF and RAM significantly influence ODL program quality, with RAM exerting a stronger influence ( $\beta = 0.45$ ) compared to PBF ( $\beta = 0.38$ ). Jointly, both variables explained 51.8% of the variance in ODL quality. This suggests that effective ODL delivery depends not only on performance-linked

funding but also on how resources are allocated, prioritized, and utilized. Adequate resourcing has direct effects on: Technology reliability, Staff competence, Learner support services, Quality of instructional materials.

## **CONCLUSION AND RECOMMENDATION**

### **Conclusion**

The study concludes that ODL programs in Rivers State tertiary institutions face systemic challenges related to inadequate funding models and weak resource allocation systems. Developmental performance-based funding mechanisms are minimally implemented, and existing allocation models fail to address the unique needs of ODL delivery. Despite these challenges, results show that both developmental performance-based funding and robust resource allocation models have significant positive influences on ODL program quality. Together, they explain more than half of the variation in ODL performance, indicating that strategic funding and resource planning are essential for enhancing the quality, sustainability, and effectiveness of ODL in Rivers State. To improve program delivery and educational outcomes, tertiary institutions must adopt integrated funding and resourcing frameworks that incentivize performance, support digital infrastructure, build staff capacity, and enhance learner support systems.

### **Recommendations**

Based on the findings and conclusions, the following recommendations are made:

1. **Develop and Implement a Comprehensive Performance-Based Funding Framework**  
Rivers State tertiary institutions should introduce a clear set of performance indicators such as completion rates, learner satisfaction, digital content quality, and platform uptime to guide funding decisions. Funding allocations should increasingly reward departments or units that achieve measurable improvements.
2. **Establish a Structured ODL-Specific Resource Allocation Model:**  
Institutions should move away from generic budgeting and adopt a specialized ODL resource allocation model tailored to: ICT infrastructure, Learning management system (LMS) upgrades, Digital content production, Staff development, Technical support and ODL learner support services. This model should be documented, transparent, and aligned with the institution's strategic ODL goals
3. **Strengthen Monitoring, Data Collection, and Performance Analytics**  
ODL centres should build strong monitoring and evaluation (M&E) systems to track key performance metrics. Investment in data management systems and training in analytics is essential for implementing performance-based funding.

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