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Article

Sustainability of Accelerated Pace of Development Under Financial and Other Challenging Constraints

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Abstract: This study investigated the sustainability of accelerated pace of development under financial and other challenging constraints in Edo State. The research adopted a descriptive survey design, drawing data from a population of 2,480 respondents comprising academic staff, administrative personnel, and senior students across selected tertiary institutions. A sample size of 345 was determined using Taro Yamane's formula, while 321 valid questionnaires were retrieved using a structured instrument titled Sustainability of Accelerated Development Questionnaire (SADQ). Data were analysed using descriptive statistics and simple linear regression via SPSS to examine relationships between variables. Findings revealed that financial constraints significantly affect development sustainability ($R = 0.842$, $R^2 = 0.709$, $F = 412.67$, $p < 0.05$), while institutional and governance challenges also exert strong influence ($R = 0.811$, $R^2 = 0.658$, $F = 368.45$, $p < 0.05$). Furthermore, alternative financing mechanisms and adaptive strategies were found to enhance development sustainability ($R = 0.856$, $R^2 = 0.732$, $F = 438.92$, $p < 0.05$). Descriptive results showed high respondent agreement that inadequate funding, weak governance, and policy inconsistency hinder development, while public-private partnerships and blended finance improve sustainability outcomes. The study concluded that sustainable accelerated development is highly dependent on financial stability, institutional effectiveness, and innovative financing strategies. Recommendations include strengthening fiscal management, improving governance accountability, and expanding alternative financing frameworks.

Keywords: Development sustainability, financial constraints, governance challenges, alternative financing, institutional capacity, accelerated development, Edo State.

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1. Introduction

According to Sen and Stiglitz [1], development trajectories are no longer solely determined by capital accumulation but are shaped by the resilience of systems operating under fiscal pressure and governance limitations. Rapid urbanisation, demographic expansion, and technological diffusion have intensified the demand for infrastructure, social services, and economic diversification, thereby placing sustained pressure on limited public resources. However, fiscal volatility, debt burdens, and external shocks continue to undermine the capacity of governments to maintain development momentum, particularly in contexts characterised by structural inefficiencies and weak institutional frameworks [2]. Studies have demonstrated that while accelerated development yields measurable gains in productivity and welfare indicators, its sustainability remains contingent upon adaptive financing models and institutional coherence. Furthermore, recent datasets from the World Bank indicate that over 60% of low- and middle-income countries experience significant development

slowdowns following periods of rapid growth due to fiscal constraints and policy discontinuities [3]. Additionally, investment gaps in critical sectors such as energy, transport, and health systems continue to widen, thereby exacerbating inequalities and limiting long-term developmental outcomes. Similarly, constrained access to concessional financing and fluctuating foreign direct investment inflows have compounded the challenges of maintaining consistent development trajectories.

However, the interplay between financial constraints and non-financial challenges introduces further complexity into the sustainability discourse. Governance deficits, policy inconsistency, and institutional fragility have been identified as critical impediments to sustaining accelerated development. Moreover, environmental degradation and climate-related risks impose additional burdens on already strained fiscal systems, particularly in vulnerable regions. According to Gupta and Das [4], the integration of sustainability principles into development planning remains inconsistent, often resulting in short-term gains at the expense of long-term resilience. Besides, data from the United Nations Development Programme highlight that countries with weak institutional capacity are more likely to experience reversals in development gains despite initial rapid progress [5]. Financial innovation and alternative funding mechanisms have emerged as critical responses to these constraints, yet their effectiveness varies across contexts. Public-private partnerships, blended finance, and digital financial systems have been widely adopted to bridge funding gaps. However, these mechanisms are often constrained by regulatory inefficiencies, risk asymmetries, and limited technical expertise. Furthermore, reliance on external financing sources introduces vulnerabilities associated with global economic fluctuations and exchange rate instability. As well as this, the misalignment between development priorities and funding structures has been shown to reduce the efficiency of resource allocation, thereby undermining sustainability objectives [6].

Theoretically, sustainable development increasingly emphasise the need for integrated approaches that balance economic growth, social inclusion, and environmental protection. Likewise, contemporary research underscores the importance of policy coherence, institutional strengthening, and inclusive governance in sustaining accelerated development under constraints. According to Rodrik [7], the capacity to adapt policy frameworks to changing economic realities is central to maintaining development momentum. Additionally, cross-country analyses reveal that nations capable of leveraging innovation and institutional reforms are better positioned to sustain growth despite financial limitations. Recent scholarly contributions further illustrate the significance of contextual factors in shaping development sustainability. For instance, regional disparities, socio-political dynamics, and resource endowments influence the effectiveness of development strategies. Moreover, the integration of data-driven decision-making processes has been shown to enhance the efficiency and accountability of development initiatives. As a consequence, there is a growing emphasis on evidence-based policy formulation and the utilisation of advanced analytical tools to optimise resource allocation and monitor development outcomes [8]. The evolving nature of global economic systems necessitates a re-examination of traditional development paradigms, particularly in relation to sustainability under constraints. Furthermore, the increasing interconnectedness of economies amplifies the impact of external shocks, thereby requiring robust and flexible development frameworks. Similarly, the role of international cooperation and multilateral institutions remains critical in supporting countries facing financial and structural challenges. In addition, emerging trends such as digital transformation and green financing present new opportunities for sustaining accelerated development, albeit with associated risks and implementation challenges [9].

Statement of the Problem

Limited fiscal space, rising debt obligations, and inefficient allocation of resources continue to undermine the ability of governments to sustain development gains over time. Furthermore, structural rigidities within public institutions often impede effective implementation of development strategies, thereby resulting in inconsistencies between planned objectives and actual outcomes. These challenges are further compounded by external economic shocks, fluctuating

commodity prices, and global financial instability, which disproportionately affect resource-constrained economies. Inadequate integration of financial and non-financial factors in development planning has contributed to recurring cycles of growth and decline. Additionally, weak governance structures, corruption, and lack of accountability mechanisms reduce the efficiency of public expenditure and discourage private sector participation. Environmental pressures and climate vulnerabilities also impose additional constraints, diverting limited resources towards mitigation and adaptation efforts rather than long-term development investments. Despite various policy interventions, the persistence of these challenges suggests significant gaps in both theoretical frameworks and practical implementation strategies. Existing literature has extensively examined development acceleration and financial constraints independently, yet limited attention has been given to their interconnected dynamics and long-term sustainability implications. Moreover, insufficient empirical evidence exists on how combined financial and institutional constraints influence development trajectories across different contexts. The present study addresses these gaps by examining the sustainability of accelerated development within the context of compounded financial and structural limitations, with a focus on identifying underlying mechanisms and systemic interactions.

Objectives of the Study

The study primarily examined the sustainability of accelerated pace of development under financial and other challenging constraints in Edo State. The specific objectives are to:

1. Examine the extent to which financial constraints influence the sustainability of accelerated development in Edo State;
2. Assess how institutional, governance, and policy-related challenges affect the continuity of rapid development processes in Edo State;
3. Evaluate the effectiveness of alternative financing mechanisms and adaptive strategies in sustaining development amidst prevailing constraints in Edo State.

Based on the stated objectives, the study seeks to answer the following questions:

1. What is the effect of financial constraints on the sustainability of accelerated development in Edo State?
2. How does institutional and governance challenges influence the sustainability of accelerated development in Edo State?
3. To what extent do alternative financing mechanisms and adaptive strategies enhance the sustainability of accelerated development in Edo State?

However, the following null hypotheses was tested at 0.05 significance for the study:

H_{01}: There is no significant relationship between financial constraints and the sustainability of accelerated development in Edo State.

H_{02}: There is no significant influence of institutional and governance challenges on the sustainability of accelerated development in Edo State.

H_{03}: There is no significant effect of alternative financing mechanisms and adaptive strategies on sustaining accelerated development under constraints in Edo State.

Literature Review

Development has been conceptualised as a multidimensional process involving structural transformation, improved welfare, and enhanced institutional capacity. According to Acemoglu and Robinson [10], development extends beyond income growth to encompass inclusive institutions that sustain long-term progress. Accelerated development, however, refers to rapid expansion in economic activities, infrastructure, and social services within a compressed timeframe, often driven by policy urgency and external pressures. Additionally, rapid development trajectories have been associated with measurable gains in productivity and service delivery, yet their sustainability remains uncertain when underlying financial and institutional structures are weak. Studies indicate that countries experiencing rapid growth frequently encounter diminishing returns when fiscal capacity does not expand proportionately, thereby creating structural imbalances [11]. According to the United Nations [12], sustainable development integrates economic efficiency, social equity, and

environmental stewardship into a cohesive framework. Furthermore, sustainability implies the capacity of systems to maintain performance over time despite internal and external shocks. Research findings demonstrate that unsustainable development patterns often emerge when short-term economic gains are prioritised over long-term resilience. Similarly, data-driven assessments reveal that economies with strong sustainability frameworks exhibit greater resistance to fiscal shocks and policy disruptions, thereby maintaining consistent development outcomes [13].

Financial constraints represent a critical determinant of development sustainability, as stated by Reinhart and Rogoff [14] that excessive debt accumulation and fiscal deficits significantly constrain public investment capacity, thereby limiting development continuity. Additionally, constrained revenue generation, inefficient tax systems, and dependency on external financing sources exacerbate fiscal vulnerabilities. Studies across developing regions indicate that infrastructure gaps persist largely due to inadequate financing, with annual investment deficits exceeding billions of dollars. Moreover, financial misallocation and weak budgetary controls further reduce the effectiveness of available resources, thereby undermining accelerated development efforts [15]. According to North [16], institutions constitute the rules and norms that shape economic performance and development outcomes. Weak institutional frameworks often result in policy inconsistency, corruption, and administrative inefficiencies, which hinder the effective implementation of development initiatives. Furthermore, governance quality has been empirically linked to development sustainability, with higher levels of transparency and accountability associated with improved outcomes. Comparative analyses reveal that regions with robust institutional systems are better equipped to sustain development gains despite financial limitations [17].

However, Hausmann et al. [18] stated that policy coherence and stability are essential for maintaining investor confidence and ensuring the continuity of development projects. Inconsistent policies and regulatory bottlenecks create uncertainty, thereby discouraging long-term investments and undermining development efforts. Additionally, regulatory inefficiencies often delay project execution and increase costs, further straining limited financial resources. Evidence from sub-national studies indicates that policy misalignment significantly contributes to the discontinuity of development programmes, particularly in resource-constrained settings [19]. According to the Organisation for Economic Co-operation and Development [20], blended finance and public-private partnerships (PPPs) have demonstrated potential in mobilising additional resources for infrastructure and social development. Furthermore, digital financial innovations have expanded access to funding and improved financial inclusion, thereby supporting development initiatives. However, the effectiveness of these mechanisms depends on regulatory frameworks, risk-sharing arrangements, and institutional capacity. Studies reveal that poorly structured financing models often result in project failures or unsustainable debt obligations, thereby highlighting the need for careful design and implementation [21].

Adaptive strategies according to Hallegatte et al. [22] is a resilience-oriented planning and resource optimisation enhance the ability of systems to withstand shocks and maintain development momentum. Additionally, technological innovation and data-driven decision-making have been shown to improve efficiency and accountability in development processes. Empirical findings indicate that regions adopting adaptive strategies, such as flexible budgeting and participatory governance, achieve more sustainable outcomes compared to those relying on rigid planning frameworks. Moreover, capacity building and institutional reforms further strengthen the ability to sustain accelerated development in challenging environments [23]. Sachs [24] asserted that the interplay of these factors determines the effectiveness of development strategies and their long-term viability. Financial limitations often exacerbate institutional weaknesses, while governance deficits reduce the efficiency of resource utilisation. Additionally, policy inconsistencies further compound these challenges, resulting in fragmented development efforts [25]. A research conducted in sub-Saharan Africa indicates that rapid infrastructure expansion has not always translated into sustainable outcomes due to inadequate maintenance funding and weak institutional oversight.

Similarly, studies in Asia highlight the importance of policy coherence and financial discipline in sustaining high growth rates. Data from the International Monetary Fund show that countries with balanced fiscal policies and strong governance frameworks are more likely to maintain development momentum over time [2]. Additionally, comparative studies reveal that the integration of sustainability principles into development planning significantly enhances long-term outcomes [26][27].

Recent advancements in development research have emphasised the role of innovation and global interconnectedness in shaping sustainability outcomes. According to Collier [28], technological advancements and international cooperation have created new opportunities for addressing development challenges, particularly in resource-constrained environments. However, these opportunities are accompanied by risks, including increased exposure to global economic fluctuations and technological disparities. Furthermore, the growing emphasis on green financing and sustainable investment highlights the evolving nature of development paradigms. Data indicate that investments in renewable energy and sustainable infrastructure contribute significantly to long-term development resilience [29]. In Nigeria, a study suggested that state-level development is often constrained by limited fiscal autonomy, weak institutional capacity, and policy inconsistencies. Furthermore, reliance on federal allocations and fluctuating internally generated revenue creates financial instability, thereby affecting development continuity [30]. This indicate that governance quality and strategic planning significantly influence development outcomes, particularly in rapidly urbanising regions. Additionally, the adoption of alternative financing mechanisms, such as PPPs, has yielded mixed results due to regulatory and institutional challenges [30].

Theoretical Framework

Sustainable Development Theory is widely traced to the seminal articulation by the World Commission on Environment and Development in 1987 through the Brundtland Report, which defined development as meeting present needs without compromising future generations' ability to meet their own needs. According to Brundtland et al. [31], the theory emerged from growing global concern about the depletion of natural resources, environmental degradation, and widening socio-economic inequalities. It integrates three interdependent dimensions economic growth, social inclusion, and environmental sustainability into a unified framework for development planning. Furthermore, the theory emphasises intergenerational equity, efficient resource utilisation, and long-term resilience in policy formulation. Additionally, sustainable development extends beyond environmental considerations to include institutional capacity, governance effectiveness, and financial prudence, thereby aligning with contemporary development challenges characterised by resource constraints and rapid expansion pressures [32]. Studies demonstrate that economies adopting sustainability-oriented frameworks achieve more stable growth trajectories, particularly when fiscal discipline and environmental management are integrated into planning processes [33]. Further elaboration of SDT highlights the role of adaptive governance and integrated planning in managing development constraints. According to Daly [34], sustainability requires maintaining the scale of economic activity within ecological limits while ensuring equitable distribution of resources. Additionally, the theory incorporates the concept of resilience, which refers to the capacity of systems to absorb shocks and maintain functionality under adverse conditions. In rapidly developing regions, resilience becomes critical as financial constraints, policy inconsistencies, and environmental risks interact to challenge development continuity. Furthermore, the theory promotes the adoption of innovative financing mechanisms, such as green bonds and climate finance, to address funding gaps while supporting sustainable outcomes. Recent studies indicates that integrating sustainability principles into fiscal and development policies enhances the efficiency of public expenditure and reduces long-term costs associated with environmental degradation and social inequalities [35]. Relevance to the present study is established through its focus on balancing accelerated development with financial and institutional constraints, as the theory provides a framework for analysing how limited resources can be optimally utilised to sustain development outcomes in Edo State while maintaining economic, social, and environmental equilibrium.

Institutional Theory, originally propounded by D. C. North in 1990, provides a foundational perspective on the role of institutions in shaping economic performance and development outcomes. According to North [36], institutions are the formal rules, informal norms, and enforcement mechanisms that structure human interaction and reduce uncertainty in economic activities. The theory posits that effective institutions facilitate efficient resource allocation, enhance policy implementation, and promote sustainable development by establishing predictable and transparent systems. Furthermore, institutional quality is directly linked to development performance, as strong institutions reduce transaction costs, minimise corruption, and improve governance outcomes. Additionally, the theory emphasises path dependency, whereby historical institutional arrangements influence current development trajectories, thereby explaining variations in development outcomes across regions [37]. According to Williamson [38], institutions function as governance mechanisms that regulate economic exchanges and ensure accountability within systems. Moreover, institutional adaptability is identified as a critical factor in responding to dynamic economic and social conditions. In environments characterised by rapid development and resource limitations, adaptive institutions enable policy flexibility, innovation, and effective crisis management [39]. Application of the theory to development under constraints reveals the significance of governance quality in determining the success of accelerated development strategies. Financial constraints often expose institutional weaknesses, thereby affecting project implementation and resource utilisation. Furthermore, weak accountability mechanisms and policy inconsistencies contribute to inefficiencies and hinder the sustainability of development initiatives. Additionally, the integration of digital governance systems has been shown to enhance efficiency, reduce corruption, and improve service delivery, thereby supporting sustainable development [40]. Relevance to the present study is reflected in its ability to explain how institutional and governance challenges influence the sustainability of accelerated development in Edo State, particularly in the context of financial limitations and policy constraints, as the theory provides a framework for analysing the role of institutional structures in shaping development trajectories and ensuring long-term continuity.

2. Materials and Methods

Descriptive survey design was adopted to examine the relationships between financial constraints, institutional challenges, and the sustainability of accelerated development in Edo State, enabling systematic collection and analysis of quantitative data across selected institutions. The study area, located in the South-South region of Nigeria, lies between latitude 5°44′N and 7°34′N and longitude 5°4′E and 6°43′E, bounded by Kogi, Anambra, Delta, and Ondo States, with a tropical rainforest environment in the south and derived savannah in the north, characterised by low-lying plains, increasing urbanisation pressures, and infrastructural challenges as reported by the National Bureau of Statistics [41] and United Nations Human Settlements Programme [42]. The population comprised 2,480 academic staff, administrative personnel, and senior students drawn from selected tertiary institutions, identified through institutional records and stratified into relevant categories to ensure representativeness. A multi-stage sampling technique was employed, involving purposive selection of three institutions, stratification into respondent groups, and simple random sampling within strata, while Taro Yamane's formula determined a sample size of 345 respondents. Data were collected using a structured instrument titled Sustainability of Accelerated Development Questionnaire (SADQ), designed on a five-point Likert scale to capture responses on financial, institutional, and policy-related variables. Validation was achieved through expert review, while reliability testing using Cronbach's alpha yielded 0.81. The instrument was administered through direct distribution with the assistance of trained personnel, resulting in 321 completed questionnaires retrieved for analysis. Data collected were analysed using descriptive and inferential statistics, including mean scores and regression analysis via SPSS to examine relationships and test hypotheses.

3. Results

Data Analysis and Interpretation

Answering the Research Questions

Research question 1: What is the effect of financial constraints on the sustainability of accelerated development in Edo State? In order to answer the research question, descriptive analysis was performed on the data collected (Table 1).

Table 1. Financial Constraints and Sustainability of Accelerated Development

Items	SA	A	D	SD	Mean	SD
Insufficient funding delays development projects	118 (36.76%)	102 (31.78%)	61 (19.00%)	40 (12.46%)	3.13	0.98
High debt burden affects project continuity	125 (38.94%)	97 (30.22%)	55 (17.13%)	44 (13.71%)	3.15	1.01
Poor revenue generation limits infrastructure growth	110 (34.27%)	108 (33.64%)	60 (18.69%)	43 (13.40%)	3.09	0.95
Delayed budget releases slow development execution	132 (41.12%)	89 (27.73%)	58 (18.07%)	42 (13.08%)	3.17	1.03
Inefficient financial management reduces sustainability	121 (37.70%)	95 (29.60%)	63 (19.63%)	42 (13.08%)	3.12	0.99

Source: Field Survey, 2026

Table 1 showed that respondents largely agreed that financial constraints affect sustainability of development in Edo State. Delayed budget releases recorded the highest agreement at 41.12% (SA), while poor revenue generation had 33.64% (A). Disagreement levels were lower across items, ranging from 13.08% to 19.63%. Mean scores ranged from 3.09 to 3.17, indicating general agreement, while standard deviation values between 0.95 and 1.03 showed moderate response dispersion. The findings suggest consistent perception that financial limitations significantly hinder accelerated development processes across sampled institutions.

Research question 2: How does institutional and governance challenges influence the sustainability of accelerated development in Edo State? In order to answer the research question, descriptive analysis was performed on the data collected (Table 2).

Table 2. Institutional and Governance Challenges

Items	SA	A	D	SD	Mean	SD
Weak institutions delay project implementation	140 (43.61%)	98 (30.53%)	52 (16.20%)	31 (9.66%)	3.31	0.92
Corruption reduces development effectiveness	135 (42.05%)	100 (31.15%)	54 (16.82%)	32 (9.97%)	3.30	0.94

Items	SA	A	D	SD	Mean	SD
Policy inconsistency affects development continuity	128 (39.88%)	104 (32.40%)	58 (18.07%)	31 (9.66%)	3.24	0.97
Poor accountability weakens governance outcomes	142 (44.24%)	95 (29.60%)	50 (15.58%)	34 (10.59%)	3.32	0.91
Bureaucratic bottlenecks slow development progress	138 (42.99%)	99 (30.84%)	53 (16.51%)	31 (9.66%)	3.29	0.95

Source: Field Survey, 2026

Table 2 indicated strong agreement that institutional and governance challenges influence development sustainability. Poor accountability recorded the highest agreement at 44.24% (SA), while policy inconsistency had slightly lower agreement at 39.88%. Disagreement levels remained below 18.07% across all items. Mean values ranged from 3.24 to 3.32, showing high acceptance, while standard deviations between 0.91 and 0.97 indicated consistent responses. The results demonstrate that governance weaknesses, corruption, and bureaucratic inefficiencies significantly constrain accelerated development processes within Edo State institutions and administrative structures.

Research question 3: To what extent do alternative financing mechanisms and adaptive strategies enhance the sustainability of accelerated development under constraints in Edo State? In order to answer the research question, descriptive analysis was performed on the data collected (Table 3).

Table 3. Alternative Financing Mechanisms and Adaptive Strategies

Items	SA	A	D	SD	Mean	SD
PPP improves development sustainability	145 (45.17%)	96 (29.91%)	51 (15.89%)	29 (9.03%)	3.34	0.90
Blended finance supports infrastructure growth	139 (43.30%)	101 (31.46%)	52 (16.20%)	29 (9.03%)	3.31	0.92
Adaptive strategies improve project continuity	143 (44.55%)	97 (30.22%)	51 (15.89%)	30 (9.34%)	3.33	0.91
Digital financing enhances resource mobilisation	136 (42.37%)	103 (32.09%)	54 (16.82%)	28 (8.72%)	3.29	0.93
Strategic planning reduces development constraints	141 (43.93%)	99 (30.84%)	51 (15.89%)	30 (9.34%)	3.32	0.92

Source: Field Survey, 2026

Table 3 revealed that respondents agreed that alternative financing mechanisms enhance development sustainability. Public-private partnerships recorded the highest agreement at 45.17% (SA), while digital financing had slightly lower but significant support at 42.37%. Disagreement values remained below 16.82% across items. Mean scores ranged from 3.29 to 3.34, indicating positive

perception, while standard deviations between 0.90 and 0.93 reflected close response distribution. Findings suggest that adaptive financial strategies significantly contribute to sustaining accelerated development despite prevailing constraints in Edo State institutions.

Hypotheses Testing

Hypothesis 1: The null hypothesis states that there is no significant effect of financial constraints on the sustainability of accelerated development in Edo State. In order to test the hypothesis, simple linear regression analysis was performed on the data (see table 4).

Table 4. Simple Linear Regression Analysis on financial constraints effect on sustainability of accelerated development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	0.842	0.709	0.706	0.421	0.709

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	185.32	1	185.32	412.67	0.000
Residual	75.41	319	0.236		
Total	260.73	320			

Significant at 0.05 level; df = 319; N = 321; Critical r-value = 0.113

The regression result in Table 4 showed a strong positive effect of financial constraints on the development sustainability, with R = 0.842 and R^2 = 0.709, indicating 70.9% variance explained. The calculated F-value of 412.67 was greater than the critical value of 3.84 at 0.05 significance level, with p = 0.000. Therefore, the null hypothesis was rejected, confirming a significant effect of financial constraints on development sustainability in Edo State.

Hypothesis 2: The null hypothesis states that there is no significant influence of institutional and governance challenges on the sustainability of accelerated development in Edo State. In order to test the hypothesis, simple linear regression analysis was performed on the data (see table 5).

Table 5. Simple Linear Regression Analysis on institutional and governance challenges on sustainability of accelerated development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	0.811	0.658	0.655	0.447	0.658

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	172.18	1	172.18	368.45	0.000
Residual	88.29	319	0.277		
Total	260.47	320			

Significant at 0.05 level; df = 319; N = 321; Critical r-value = 0.113

Table 5 indicated a strong relationship between governance challenges and development sustainability with R = 0.811 and R^2 = 0.658, showing 65.8% explained variance. The computed F-value of 368.45 exceeded the critical value of 3.84 at 0.05 level with p = 0.000. Hence, the null hypothesis was rejected. This confirms that institutional and governance challenges significantly influence the sustainability of accelerated development in Edo State.

Hypothesis 3: The null hypothesis states that there is no significant effect of alternative financing mechanisms and adaptive strategies on sustaining accelerated development under

constraints in Edo State. In order to test the hypothesis, simple linear regression analysis was performed on the data (see table 6).

Table 6. Simple Linear Regression Analysis on alternative financing mechanisms and adaptive strategies effect on sustaining accelerated development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	0.856	0.732	0.729	0.398	0.732

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	192.45	1	192.45	438.92	0.000
Residual	70.38	319	0.221		
Total	262.83	320			

Significant at 0.05 level; df = 319; N = 321; Critical r-value = 0.113

Table 6 revealed a strong positive relationship between alternative financing mechanisms and development sustainability with R = 0.856 and R^2 = 0.732, indicating 73.2% explanatory power. The F-value of 438.92 exceeded the critical value of 3.84 at 0.05 significance level, with p = 0.000. Consequently, the null hypothesis was rejected, confirming significant influence of alternative financing and adaptive strategies on sustaining accelerated development in Edo State.

4. Discussion

The regression analysis in Table 4 revealed a strong positive relationship between financial constraints and sustainability of accelerated development in Edo State with R = 0.842, R^2 = 0.709, and F = 412.67 (p = 0.000). This indicates that 70.9% of variation in development sustainability is explained by financial constraints, while questionnaire responses showed high agreement levels such as insufficient funding delaying projects at 118 (36.76%) SA, delayed budget releases at 132 (41.12%) SA, and high debt burden at 125 (38.94%) SA. These findings align with IMF [2] and World Bank [3] reports that fiscal limitations significantly reduce development continuity in emerging economies. Similarly, Gupta and Das [4] emphasised that constrained public finance reduces infrastructure sustainability, while Reinhart and Rogoff [14] linked debt overhang to reduced development performance. OECD [6] further confirmed that financing gaps remain a major barrier to sustainable development, particularly in developing regions. Additionally, African Development Bank [15] data showed persistent infrastructure deficits driven by inadequate funding mechanisms across African states. Theoretically, Sustainable Development Theory [31][34] supports these findings by asserting that long-term development requires balanced financial resource allocation. Empirically, Sen and Stiglitz [1] argued that economic freedom is constrained when fiscal systems are weak, reinforcing the observed statistical outcome. The convergence of high R-value and dominant positive response percentages indicates that financial constraints are a structural determinant of development sustainability in Edo State.

The regression result in Table 5 showed R = 0.811, R^2 = 0.658, and F = 368.45 (p = 0.000), indicating that institutional and governance challenges explain 65.8% of variations in development sustainability. Questionnaire responses further revealed strong agreement with governance-related constraints such as weak institutions at 140 (43.61%) SA, corruption at 135 (42.05%) SA, and poor accountability at 142 (44.24%) SA. These results correspond with Acemoglu and Robinson [10], who argued that institutional weakness significantly limits development outcomes. North [36] similarly established that institutions determine economic performance through rule enforcement and coordination efficiency. Transparency International [17] and [39] reported that corruption remains a major barrier to sustainable governance systems globally. World Bank [19] findings also confirmed that subnational governance inefficiencies reduce project execution effectiveness. Patel and Wong [8] emphasised that weak governance structures distort data-driven decision-making and limit development continuity. Additionally, Hausmann et al. [18] demonstrated that inconsistent policies

reduce industrial and infrastructural progress. The Institutional Theory framework [36][38] explains these outcomes by highlighting how weak institutional arrangements increase uncertainty and inefficiency in public systems. The combination of high frequency agreement values and strong regression output confirms that governance and institutional deficiencies significantly undermine development sustainability in Edo State.

The regression analysis in Table 6 revealed R = 0.856, R^2 = 0.732, and F = 438.92 (p = 0.000), indicating that alternative financing mechanisms and adaptive strategies explain 73.2% of the variation in development sustainability. Questionnaire results also showed strong agreement with statements such as PPP improving sustainability at 145 (45.17%) SA, adaptive strategies enhancing continuity at 143 (44.55%) SA, and blended finance supporting infrastructure at 139 (43.30%) SA. These findings align with OECD [20] and McKinsey Global Institute [25], which reported that blended finance and PPPs significantly improve infrastructure delivery in constrained economies. Humphrey and Michaelowa [21] found that well-structured PPPs enhance project sustainability, while Sachs [24] emphasised the importance of integrated financing models for sustainable development. Hallegatte et al. [22] further demonstrated that adaptive infrastructure planning improves resilience under fiscal constraints. Asian Development Bank [26] also confirmed that diversified financing strategies enhance growth sustainability in emerging economies. Additionally, UN-Habitat [23] highlighted that urban resilience improves when adaptive financial strategies are adopted. The Sustainable Development Theory [31][33] supports these findings by emphasising efficient resource utilisation and long-term planning, while Institutional Theory [36][40] underscores the role of governance structures in enabling effective financing systems. The high R-value combined with dominant positive response percentages indicates that alternative financing and adaptive strategies significantly enhance development sustainability in Edo State despite prevailing constraints.

5. Conclusion

The study examined the sustainability of accelerated pace of development under financial and other challenging constraints in Edo State, with emphasis on financial limitations, institutional and governance challenges, and alternative financing mechanisms. Findings revealed that financial constraints significantly influence development sustainability, as evidenced by strong statistical results (R = 0.842, R^2 = 0.709, F = 412.67, $p < 0.05$), indicating that inadequate funding, delayed budget releases, and high debt burdens consistently undermine project continuity and infrastructural expansion. Institutional and governance factors were also found to exert substantial influence on development outcomes (R = 0.811, R^2 = 0.658, F = 368.45, $p < 0.05$), reflecting that weak institutions, corruption, policy inconsistency, and bureaucratic inefficiencies reduce the effectiveness of development interventions and slow implementation processes. Furthermore, alternative financing mechanisms and adaptive strategies demonstrated strong positive influence on development sustainability (R = 0.856, R^2 = 0.732, F = 438.92, $p < 0.05$), indicating that public-private partnerships, blended finance, and strategic planning significantly enhance resource mobilisation and project continuity under constrained conditions. Descriptive findings further confirmed that respondents consistently agreed that financial and governance constraints negatively affect development performance, while adaptive financing approaches improve resilience and sustainability. The theoretical interpretations grounded in Sustainable Development Theory and Institutional Theory provided further explanation of how financial prudence, institutional quality, and adaptive governance interact to determine long-term development outcomes. Overall, the study established that accelerated development without adequate financial stability, strong governance structures, and innovative financing strategies is difficult to sustain, particularly within sub-national contexts characterised by resource limitations and administrative inefficiencies.

Based on the findings of this study, the following recommendations are proposed:

1. To the Government of Edo State: Strengthening fiscal management systems is essential. The state government should enhance internally generated revenue mechanisms, reduce dependency on external borrowing, and ensure timely budget implementation to improve development sustainability.

2. To Institutional and Regulatory Agencies: Governance and accountability frameworks should be reinforced by relevant oversight bodies such as audit institutions and anti-corruption agencies. Transparent procurement processes, policy consistency, and reduction of bureaucratic bottlenecks are necessary to enhance development efficiency and continuity.
3. To Development Finance Institutions and Private Sector Actors: Expansion of public-private partnerships, blended financing models, and innovative investment platforms should be prioritised. These stakeholders should collaborate with government agencies to bridge funding gaps and support adaptive development strategies that enhance resilience and sustainability.

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