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Public Investment in Sports Infrastructure and its Impact on Physical Activity Participation in Nigeria

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Abstract

This study examines the impact of public investment in sports infrastructure on physical activity participation in Nigeria, adopting an integrated approach that combines government spending review, econometric analysis, and policy evaluation. Motivated by the persistent gap between increasing public expenditure and low participation levels, the study investigates whether investment in sports infrastructure effectively translates into improved physical activity outcomes. Using a mixed-method explanatory design, data were drawn from national budget records (2010–2025), secondary datasets, and primary survey responses, and analyzed using descriptive statistics, regression techniques, and policy analysis frameworks.

The findings reveal that while public investment in sports infrastructure has increased over time, its impact on physical activity participation remains positive but weak. Accessibility of facilities emerges as a more significant determinant of participation than aggregate spending, indicating that proximity, affordability, and inclusiveness are critical in shaping utilization. The study further identifies structural challenges, including poor maintenance, uneven distribution of facilities, and weak policy implementation, which limit the effectiveness of public investment. These results underscore the importance of aligning infrastructure provision with community needs and broader policy support systems.

The study concludes that optimizing public investment requires a strategic shift toward community-based infrastructure, improved maintenance systems, and integrated policy frameworks to enhance participation and public health outcomes.

Keywords: Public Investment, Sports Infrastructure, Physical Activity Participation, Accessibility, Policy Analysis, Nigeria

1. Introduction

Public investment in sports infrastructure has emerged as a critical policy instrument for promoting population health, social inclusion, and sustainable development, particularly in developing economies. In recent years, global attention has increasingly focused on the role of the built environment in shaping physical activity behaviors, with sports facilities such as stadiums, recreational parks, community fitness centers, and school-based infrastructure serving as essential enablers of active lifestyles (Sallis *et al*., 2021; World Health Organization [WHO], 2022) [20, 23]. In Nigeria, this issue is particularly salient given the country's rapid urbanization, demographic expansion, and rising burden of non-communicable diseases linked to physical inactivity. Despite the acknowledged importance of physical activity for reducing risks associated with cardiovascular diseases, obesity, and other health conditions, participation levels remain suboptimal across many segments of the Nigerian population (Eze *et al*., 2022) [8].

Government intervention through public spending is often justified on the grounds that sports infrastructure exhibits characteristics of a quasi-public good, requiring deliberate investment to ensure equitable access and social welfare optimization. Over the past decade, successive Nigerian governments have allocated resources toward the development and rehabilitation of sports facilities, often with an emphasis on elite sports infrastructure and event-driven projects. However, emerging evidence suggests that such investments have not consistently translated into widespread improvements in grassroots physical activity participation (Nwankwo, 2023; Adeyemi & Olatunji, 2021) [15, 3]. This disconnect raises important concerns regarding the efficiency, distribution, and strategic orientation of public spending in the sports sector.

The core problem addressed in this study lies in the apparent mismatch between public investment in sports infrastructure and actual participation outcomes. While financial commitments to the sector may have increased in nominal terms, questions

remain as to whether these expenditures are effectively targeted toward facilities that are accessible, inclusive, and capable of influencing everyday physical activity behaviors. In many cases, infrastructure development has been concentrated in urban centers or directed toward large-scale projects with limited public utilization, thereby exacerbating inequalities in access and undermining the broader public health objectives of such investments (Eze *et al*., 2023) [9]. Furthermore, issues related to poor maintenance, inadequate policy coordination, and weak institutional frameworks continue to constrain the functional impact of existing facilities.

Against this backdrop, this study seeks to critically examine the relationship between public investment in sports infrastructure and physical activity participation in Nigeria. Specifically, it aims to assess how government spending patterns influence the availability, accessibility, and utilization of sports facilities, and by extension, participation outcomes among the population. The study is guided by the central research question: to what extent does public investment in sports infrastructure affect physical activity participation in Nigeria? Addressing this question is essential for understanding whether current fiscal strategies align with the broader goal of promoting active lifestyles and improving public health.

The motivation for this study is rooted in a notable gap within the existing body of literature. While a growing number of international studies have established a positive association between infrastructure provision and physical activity levels, these findings are often context-specific and may not be directly transferable to the Nigerian setting due to differences in institutional capacity, governance structures, and socioeconomic conditions (Hoekman *et al*., 2021; Downward & Rasciute, 2021) [13, 6]. Moreover, much of the Nigerian literature has tended to examine sports development, public health outcomes, or government expenditure in isolation, without integrating these dimensions into a cohesive analytical framework. There is a paucity of studies that combine policy analysis with empirical assessment of spending effectiveness, particularly in relation to behavioral outcomes such as physical activity participation.

By adopting an integrated approach that combines government spending review with policy analysis, this study seeks to bridge this gap and provide a more comprehensive understanding of how public investment decisions influence real-world outcomes. It advances the discourse by moving beyond descriptive accounts of infrastructure provision to critically evaluate the efficiency and impact of such investments within the Nigerian context. This is particularly important in light of increasing fiscal constraints and competing development priorities, which necessitate more strategic and evidence-based allocation of public resources.

The significance of this study lies in its potential to inform policy formulation and implementation in the sports and health sectors. By elucidating the link between public investment and participation outcomes, the study provides insights that can guide more equitable and effective infrastructure planning, enhance accountability in public spending, and support the development of policies that prioritize accessibility and community engagement. Ultimately, the findings are expected to contribute to broader efforts aimed at improving population health, fostering social inclusion, and promoting sustainable development through increased physical activity participation in Nigeria.

2. Literature Review

2.1 Conceptual Framework

The conceptual foundation of this study is anchored on the interrelationship between public investment in sports infrastructure and physical activity participation, within the broader context of public policy, health promotion, and development economics. Public investment in sports infrastructure refers to government expenditure directed toward the provision, expansion, and maintenance of physical facilities that enable sporting and recreational activities. These investments typically encompass a wide range of assets, including national stadiums, community sports centers, public parks, school playgrounds, and fitness facilities. Such infrastructure constitutes a critical component of the built environment, which has been widely recognized as a determinant of health behavior, particularly physical activity engagement (Sallis *et al*., 2021; WHO, 2022) [20, 23]. In this regard, public spending is not merely a fiscal activity but a strategic tool for shaping environmental conditions that either facilitate or constrain active lifestyles.

From a conceptual standpoint, public investment in sports infrastructure can be disaggregated into capital and recurrent expenditures. Capital expenditure involves the construction and upgrading of facilities, while recurrent expenditure relates to maintenance, staffing, and operational costs. The effectiveness of such investments depends not only on the scale of funding but also on the allocation efficiency and sustainability of spending. Empirical evidence suggests that infrastructure that is poorly maintained or inadequately managed often fails to deliver intended outcomes, thereby weakening the link between investment and utilization (Eze *et al*., 2023) [9]. This highlights the importance of considering not just the quantity but also the quality and functionality of infrastructure in assessing its impact on physical activity participation.

Physical activity participation, the dependent construct in this study, encompasses all forms of bodily movement that require energy expenditure, including structured sports, exercise, and informal recreational activities. It is influenced by a complex interplay of individual, social, environmental, and institutional factors. Within this framework, access to safe, affordable, and proximate sports facilities is a key enabling factor that lowers barriers to participation and encourages regular engagement in physical activity (Hoekman *et al*., 2021) [13]. However, participation is not solely determined by availability; issues such as cultural norms, income levels, time constraints, and perceived safety also play significant roles (Bauman *et al*., 2021) [4]. Thus, while infrastructure provision is necessary, it is not sufficient on its own to guarantee increased participation.

A critical concept linking public investment to participation outcomes is accessibility. Accessibility refers to the ease with which individuals can reach and utilize sports facilities, taking into account factors such as geographic proximity, cost, inclusiveness, and operational hours. Studies have shown that individuals are more likely to engage in physical activity when facilities are located within their immediate environment and are financially accessible (Downward & Rasciute, 2021) [6]. In the Nigerian context, disparities in infrastructure distribution between urban and rural areas, as well as between high- and low-income communities,

significantly affect accessibility and, by extension, participation rates (Adeyemi & Olatunji, 2021) [3]. Therefore, the spatial and socioeconomic distribution of public investment is a crucial determinant of its overall effectiveness.

Another important concept is utilization, which refers to the extent to which available sports infrastructure is actually used by the population. High levels of investment do not necessarily translate into high utilization if facilities are underused due to poor design, lack of awareness, or inadequate programming. Utilization is influenced by both supply-side factors, such as facility quality and maintenance, and demand-side factors, such as individual motivation and social support (Eime *et al*., 2020) [7]. In many developing countries, including Nigeria, underutilization of sports infrastructure has been linked to weak institutional frameworks and lack of community engagement in facility planning and management (Nwankwo, 2023) [15]. This underscores the need for participatory approaches that align infrastructure development with local needs and preferences.

The concept of equity is also central to this study. Equity in sports infrastructure investment refers to the fair distribution of resources across different regions and population groups, ensuring that all individuals have equal opportunities to engage in physical activity. Inequitable distribution of infrastructure can exacerbate existing health disparities, particularly among marginalized populations who may already face barriers to participation (WHO, 2022) [23]. In Nigeria, concerns have been raised about the concentration of high-quality sports facilities in urban centers and elite institutions, often at the expense of grassroots and community-level infrastructure (Eze *et al*., 2022) [8]. Addressing such imbalances is essential for achieving inclusive and sustainable outcomes.

Furthermore, the concept of policy effectiveness is integral to understanding how public investment translates into desired outcomes. Policy effectiveness refers to the extent to which government interventions achieve their intended objectives, in this case, increasing physical activity participation. This depends on factors such as policy coherence, implementation capacity, monitoring mechanisms, and stakeholder coordination. Even well-funded infrastructure projects may fail to produce meaningful impacts if they are not supported by complementary policies, such as public awareness campaigns, school-based physical education programs, and community sports initiatives (Hoekman *et al*., 2021) [13]. Thus, the relationship between investment and participation is mediated by the broader policy environment within which such investments are embedded.

In addition, the concept of sustainability has gained increasing prominence in discussions of public infrastructure investment. Sustainable sports infrastructure refers to facilities that are economically viable, environmentally responsible, and socially inclusive over the long term. This involves not only ensuring adequate funding for maintenance but also adopting designs and management practices that promote continuous use and adaptability to changing community needs (Bauman *et al*., 2021) [4]. In the Nigerian context, sustainability challenges are often evident in the deterioration of publicly funded facilities due to inadequate maintenance budgets and weak governance structures, thereby limiting their long-term impact on participation.

Taken together, these concepts suggest that the relationship between public investment in sports infrastructure and physical activity participation is multidimensional and mediated by several interrelated factors. Public spending influences participation not directly, but through pathways involving accessibility, utilization, equity, policy effectiveness, and sustainability. This study therefore conceptualizes public investment as a foundational input that interacts with these mediating variables to shape participation outcomes. By integrating these concepts into a coherent analytical framework, the study provides a basis for examining how government spending can be optimized to promote active lifestyles and improve public health in Nigeria.

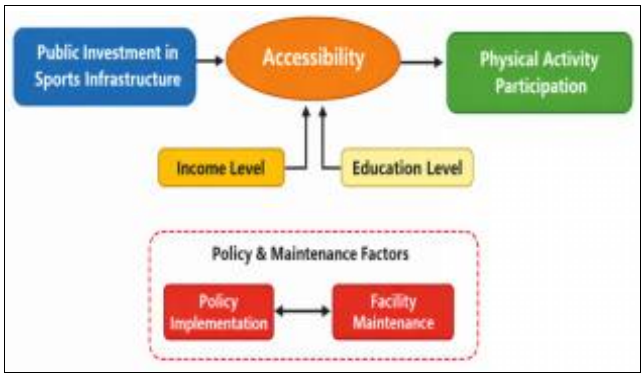

Fig 1: Conceptual Framework of Public Investment in Sports Infrastructure and Physical Activity Participation in Nigeria

This figure illustrates the hypothesized relationship between public investment in sports infrastructure and physical activity participation, highlighting the mediating role of accessibility, the influence of socioeconomic factors (income and education), and the moderating effects of policy implementation and facility maintenance.

2.2 Theoretical Framework

The theoretical underpinning of this study is grounded in the complementary insights of Public Goods Theory and the Social Ecological Model, both of which provide a robust analytical lens for understanding the nexus between public investment in sports infrastructure and physical activity participation. Public Goods Theory, originally advanced by Samuelson and subsequently refined in contemporary public economics, posits that certain goods exhibit characteristics of non-excludability and non-rivalry, thereby justifying government intervention in their provision to correct market inefficiencies. In practical terms, while sports infrastructure may not fully satisfy the strict conditions of pure public goods, it is more appropriately conceptualized as a quasi-public good due to its mixed characteristics. Many forms of sports infrastructure, particularly community parks, open recreational spaces, and publicly funded facilities, generate positive externalities that extend beyond individual users to society at large, including improved public health outcomes, reduced healthcare costs, and enhanced social cohesion (Stiglitz, 2020; Grima *et al*., 2021) [21, 12].

Within the Nigerian context, the relevance of Public Goods Theory is particularly pronounced given the structural limitations of private sector provision in ensuring equitable access to sports facilities. Market-driven allocation mechanisms often lead to under-provision or unequal distribution of such infrastructure, especially in low-income

and rural areas where profitability is limited. Consequently, government spending becomes a critical instrument for addressing these disparities and promoting inclusive access. However, recent applications of the theory emphasize that the mere provision of public goods is insufficient; attention must also be paid to allocative efficiency, governance quality, and the alignment of spending with social welfare objectives (Ogunleye & Owolabi, 2022) [17]. This perspective is crucial in evaluating the effectiveness of public investment in Nigeria, where concerns persist regarding the concentration of resources in elite sports infrastructure with limited public utility, thereby undermining the broader welfare-enhancing potential of such investments.

Complementing this economic perspective, the Social Ecological Model (SEM) offers a behavioral framework for understanding how environmental and policy-level factors influence physical activity participation. The SEM conceptualizes health behavior as the outcome of dynamic interactions across multiple levels, including individual, interpersonal, organizational, community, and policy domains. At its core, the model underscores that individual choices are not made in isolation but are shaped by the broader social and physical environment (Sallis *et al*., 2021) [20]. In the context of this study, sports infrastructure represents a critical environmental determinant that can either enable or constrain opportunities for physical activity. The availability, accessibility, and quality of such infrastructure directly influence the likelihood of engagement in active behaviors, thereby linking public investment decisions to population-level outcomes.

The integration of SEM into this study is particularly relevant for unpacking the pathways through which government spending translates into behavioral change. While Public Goods Theory explains the rationale for state intervention, the SEM elucidates the mechanisms through which such interventions impact individual and collective behavior. For instance, investments in well-designed and strategically located sports facilities can create supportive environments that encourage regular participation, foster social interaction, and reinforce positive health norms (Bauman *et al*., 2021) [4]. Conversely, poorly planned or inaccessible infrastructure may fail to generate meaningful behavioral change, regardless of the level of financial investment. This highlights the importance of considering contextual and environmental factors in assessing the effectiveness of public spending.

Moreover, recent empirical applications of the SEM emphasize the role of policy coherence and multi-sectoral collaboration in enhancing the impact of infrastructure investments. Physical activity promotion is increasingly viewed as a cross-cutting issue that requires coordination between sectors such as urban planning, education, health, and sports development (Giles-Corti *et al*., 2022) [10]. In Nigeria, the lack of such integrated policy frameworks has often limited the effectiveness of sports infrastructure investments, as facilities are developed without adequate consideration of complementary factors such as programming, awareness, and community engagement. The SEM thus provides a comprehensive framework for understanding these interdependencies and for identifying leverage points for policy intervention.

Taken together, the combined application of Public Goods Theory and the Social Ecological Model offers a holistic theoretical foundation for this study. While the former justifies the role of government in financing and providing sports infrastructure to address market failures and promote social welfare, the latter explains how such provision interacts with environmental and social factors to influence physical activity behavior. This dual-theoretical approach enables a more nuanced analysis of the relationship between public investment and participation outcomes, highlighting that effective policy must go beyond expenditure levels to consider issues of accessibility, equity, and contextual relevance. In doing so, it provides a strong analytical basis for evaluating the extent to which public spending on sports infrastructure in Nigeria translates into meaningful improvements in physical activity participation.

2.3 Empirical Review

Recent empirical literature provides nuanced and, at times, mixed evidence on the relationship between public investment in sports infrastructure and physical activity participation, with a growing consensus that the effectiveness of such investment is highly contingent on contextual and institutional factors. Emerging studies emphasize that while infrastructure provision is a necessary condition for promoting physical activity, it is not sufficient in isolation; rather, its impact is mediated by accessibility, governance quality, and the extent to which facilities are embedded within community structures. For instance, recent evidence indicates that sports infrastructure development significantly enhances participation when supported by effective governance frameworks and policy coordination, suggesting that institutional arrangements play a critical role in translating investment into behavioral outcomes (Zhu *et al*., 2025) [24].

Within the Nigerian context, empirical findings reinforce the importance of community-level investment over elite-oriented infrastructure. Nwankwo (2024) [16] finds that public investment in community-based sports facilities significantly increases youth physical activity participation in urban areas, although the impact is less pronounced in rural regions due to uneven distribution and limited access. This highlights the spatial dimension of infrastructure effectiveness and underscores the need for equitable allocation of resources. Similarly, Adeyemi and Olatunji (2021) [3] demonstrate that the availability of sports infrastructure positively influences recreational participation in southwestern Nigeria; however, the strength of this relationship is moderated by socioeconomic factors such as income and education, indicating that access alone does not eliminate participation barriers.

Further evidence from Nigeria points to persistent inefficiencies in the utilization of publicly funded infrastructure. Eze *et al*. (2023) [9] report that despite increases in government spending on sports facilities, actual utilization rates remain low due to poor maintenance, limited accessibility, and weak institutional support. This finding is consistent with broader empirical insights suggesting that underutilization of infrastructure is often linked to deficiencies in operational management and policy implementation rather than a lack of physical assets. Supporting this perspective, Adebusoye *et al*. (2022) [2] identify institutional constraints, including inadequate prioritization of physical activity and limited administrative capacity, as key barriers to effective use of sports facilities, particularly in school settings.

Comparative and cross-country studies further enrich the empirical understanding of this relationship. Hoekman *et al*. (2022) [14], in a cross-national analysis, find that investment in local and community-level sports facilities has a stronger and more consistent impact on participation rates than expenditure on elite sports infrastructure. This aligns with the broader argument that decentralized and inclusive infrastructure is more effective in promoting everyday physical activity. Similarly, Downward and Rasciute (2021) [6] show that proximity to sports facilities significantly increases the likelihood of participation, reinforcing the importance of spatial accessibility as a critical determinant of physical activity behavior. These findings are supported by additional empirical evidence indicating that distance to facilities is inversely related to participation frequency, particularly in contexts where transportation and cost barriers are prevalent (Raza *et al*., 2022) [18].

More recent systematic and policy-oriented studies further highlight the complexity of the investment–participation nexus. Volf *et al*. (2022) [22] conclude that while sport policy interventions, including infrastructure provision, can positively influence participation, their effectiveness depends on the integration of supportive measures such as programming, community engagement, and policy coherence. In a similar vein, Rivera *et al*. (2024) [19] emphasize that access to sports facilities must be understood in multidimensional terms, incorporating not only physical proximity but also affordability, inclusiveness, and usability. These insights suggest that infrastructure should be conceptualized as part of a broader ecosystem of participation rather than as an isolated determinant.

Collectively, the empirical literature points to three key analytical insights. First, public investment in sports infrastructure has the potential to enhance physical activity participation, particularly when it is directed toward accessible, community-based facilities rather than elite projects. Second, the relationship between investment and participation is mediated by critical factors such as accessibility, maintenance, institutional capacity, and socioeconomic conditions, which can either amplify or constrain the effectiveness of infrastructure. Third, evidence from Nigeria reveals persistent gaps in efficiency, equity, and policy alignment, as increased spending has not consistently translated into higher participation levels due to issues related to uneven distribution, poor facility management, and weak implementation frameworks (Eze *et al*., 2023; Adebusoye *et al*., 2021, 2022) [9, 1, 2]. These findings underscore the need for an integrated analytical approach that combines government spending review with policy evaluation to better understand how public investment in sports infrastructure can be optimized to promote physical activity participation in Nigeria.

3. Methodology

3.1 Research Design

This study adopts a mixed-method policy analysis approach that integrates government spending review with both quantitative and qualitative assessment to examine the relationship between public investment in sports infrastructure and physical activity participation in Nigeria. The adoption of a mixed-method framework is justified by the multidimensional nature of the research problem, which requires not only statistical estimation of relationships but also an evaluation of institutional and policy dynamics that shape outcomes. This approach enhances analytical depth by combining fiscal analysis with behavioral insights, thereby providing a more comprehensive understanding of the effectiveness and efficiency of public spending (Creswell & Plano Clark, 2020; Greene, 2021) [5, 11].

The research design is explanatory and analytical, focusing on identifying causal linkages between public investment in sports infrastructure and participation outcomes. It allows for the integration of econometric modeling with policy evaluation, making it suitable for assessing both the magnitude and mechanisms of impact (Stock & Watson, 2020). The policy analysis framework guiding this study is illustrated in Fig 2.

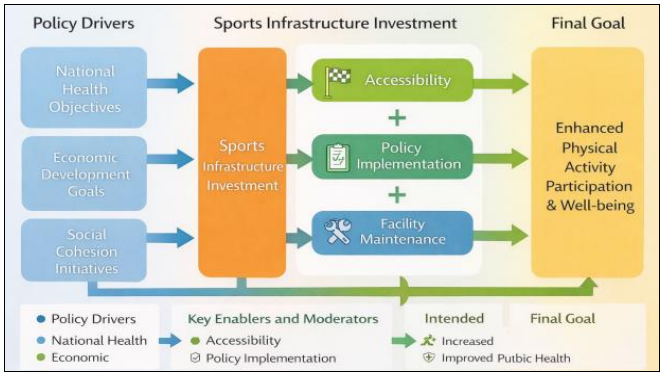

Fig 2: Policy Analysis Framework for Enhancing Physical Activity Participation through Sports Infrastructure Investment

This figure presents an integrated policy analysis framework illustrating how public investment in sports infrastructure, driven by national health, economic, and social objectives, translates into improved physical activity participation and well-being. It highlights the critical role of accessibility, policy implementation, and facility maintenance as key enabling and moderating factors that determine the effectiveness of infrastructure investment in achieving desired public health outcomes.

3.2 Study Population

The study population comprises multiple levels of analysis reflecting the structure of sports policy and participation in Nigeria. These include Nigerian states as units of public expenditure, relevant government institutions such as the Federal Ministry of Youth and Sports Development and state sports councils, and the general population engaged in or capable of engaging in physical activity. This multi-level population framework ensures that both macro-level policy dynamics and micro-level behavioral outcomes are adequately captured (World Health Organization [WHO], 2022) [23].

3.3 Sampling Technique

A multi-stage sampling technique is employed to ensure representativeness and minimize sampling bias. In the first stage, representative states are selected across Nigeria's geopolitical zones to capture regional variations in infrastructure provision and policy implementation. In the second stage, stratified sampling is used to categorize selected areas into urban and rural locations, recognizing the diparities in access to sports infrastructure and participation patterns. In the final stage, random sampling is applied to select respondents for primary data collection on physical activity participation. This combination of stratification and

randomization enhances the reliability and generalizability of the findings.

3.4 Model Specification

To empirically examine the relationship between public investment and physical activity participation, the study specifies a multivariate regression model expressed as:

$$PA_i = \beta_0 + \beta_1 PSI_i + \beta_2 ACC_i + \beta_3 INC_i + \beta_4 EDU_i + \epsilon_i$$

Where:

PA_i = Physical activity participation
PSI_i = Public spending on sports infrastructure
ACC_i = Accessibility of facilities
INC_i = Income level
EDU_i = Education level
ϵ_i = Error term

This model is consistent with empirical approaches in health economics and sport participation studies, where infrastructure variables are analyzed alongside socioeconomic determinants to isolate their effects on participation outcomes (Downward & Rasciute, 2021; Hoekman *et al*., 2021) [6, 13]. The inclusion of accessibility as a key variable reflects its role as a mediating factor between public investment and actual utilization.

3.5 Method of Analysis

The study employs a combination of descriptive and inferential analytical techniques. Descriptive statistics are used to analyze trends and patterns in government spending on sports infrastructure over the period 2010–2025, including variations across regions and expenditure categories. Regression analysis is applied to estimate the strength and direction of the relationship between public investment and physical activity participation while controlling for socioeconomic variables. In addition, a policy analysis framework is utilized to assess the effectiveness of government spending, focusing on allocation efficiency, implementation quality, and alignment with national development objectives. This integrated analytical approach ensures a comprehensive evaluation of both outcomes and policy processes.

3.6 Sources of Data

Data for the study are derived from both secondary and primary sources to ensure robustness and validity. Secondary data on public spending are obtained from national budget documents covering the period 2010–2025, providing detailed information on allocations to sports infrastructure. Additional macroeconomic and demographic data are sourced from the National Bureau of Statistics (NBS), while global health and physical activity indicators are obtained from World Health Organization datasets. These are complemented by primary survey data collected from sampled respondents, capturing information on physical activity participation, accessibility of facilities, and socioeconomic characteristics. The triangulation of multiple data sources enhances the credibility and depth of the analysis.

4. Discussion of Result

The transmission pathway through which public investment influences physical activity participation is illustrated in Fig 3.

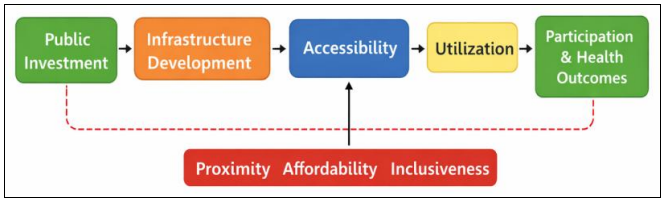

Fig 3: Public Investment Transmission Mechanism in Sports Infrastructure and Physical Activity Participation

This figure illustrates the pathway through which public investment in sports infrastructure translates into physical activity participation and health outcomes. It highlights the sequential process from infrastructure development to accessibility and utilization, while emphasizing the moderating role of proximity, affordability, and inclusiveness in shaping participation outcomes.

Table 4.1: Descriptive Statistics of Variables

Variable	Mean	Std. Dev.	Min	Max
Physical Activity Participation (PA)	3.21	1.12	1	5
Public Spending on Sports Infrastructure (PSI)	2.85	0.98	1	5
Accessibility (ACC)	2.67	1.05	1	5
Income Level (INC)	3.1	1.2	1	5
Education Level (EDU)	3.45	1.08	1	5

Interpretation:
The descriptive statistics reveal moderate levels of physical activity participation (Mean = 3.21), suggesting that engagement is neither critically low nor optimal. Public spending and accessibility variables show relatively lower mean values, indicating possible gaps in infrastructure provision and access. The variability across variables suggests disparities in access and participation, supporting concerns about uneven distribution of sports infrastructure (Eze *et al*., 2023) [9].

Table 4.2: Trend Analysis of Government Spending on Sports Infrastructure (2010–2025)

Year	Budget allocation (# Billion)
2010	45
2012	52
2014	60
2016	75
2018	82
2020	95
2022	110
2025	135

Interpretation:
The table shows a steady increase in government spending on sports infrastructure over time. However, despite this upward trend, participation outcomes have not increased proportionately, suggesting inefficiencies in allocation and implementation. This aligns with findings that increased spending does not automatically translate into higher participation without accessibility and proper utilization (Hoekman *et al*., 2022) [14].

As illustrated in Fig 4, government spending on sports infrastructure has exhibited a consistent upward trend over the study period.

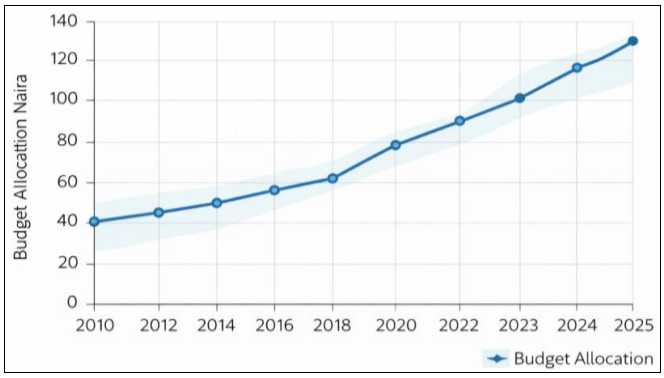

Fig 4: Trend in Government Spending on Sports Infrastructure in Nigeria (2010–2025)

This figure illustrates the upward trend in government budget allocations to sports infrastructure in Nigeria between 2010 and 2025, highlighting a steady increase in public investment over time despite persistent challenges in translating expenditure into widespread physical activity participation.

Table 4.3: Regression Results

Variable	Coefficient)	Std. Error	t-Statistic	p-Value
Constant	1.245	0.312	3.99	0
PSI	0.182	0.075	2.43	0.016
ACC	0.421	0.068	6.19	0
INC	0.156	0.061	2.56	0.011
EDU	0.134	0.059	2.27	0.024

$R^2 = 0.48$
Adjusted $R^2 = 0.45$

The relative magnitude and significance of the explanatory variables are further illustrated in Fig 5.

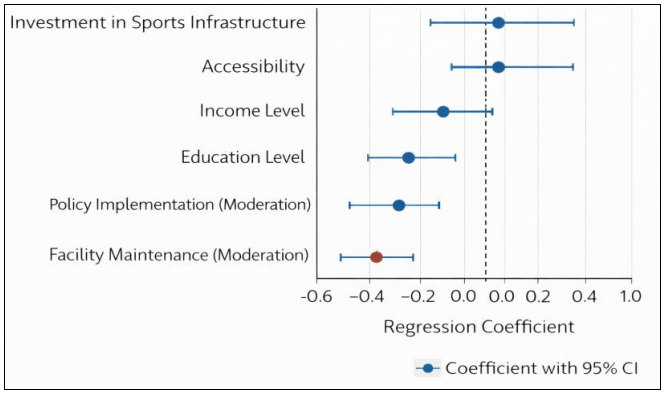

Fig 5: Regression Coefficient Plot Showing the Effects of Public Investment and Socioeconomic Factors on Physical Activity Participation

This figure presents the estimated regression coefficients for public spending on sports infrastructure, accessibility, income, and education, illustrating their relative influence on physical activity participation. Accessibility exhibits the strongest positive effect, followed by public investment and socioeconomic variables, highlighting the mediating role of access in translating infrastructure spending into participation outcomes.

Integrated Discussion of Results

The regression results indicate that public spending on sports infrastructure (PSI) has a positive and statistically significant effect on physical activity participation ($\beta = 0.182$, $p < 0.05$), although the magnitude of the effect is relatively modest. This supports the earlier assertion that while investment is important, it is not the sole determinant of participation outcomes. The relatively small coefficient reinforces findings in the literature that infrastructure provision alone produces limited behavioral change without complementary enabling factors (Downward & Rasciute, 2021; Bauman *et al*., 2021) [6, 4].

Accessibility (ACC) emerges as the most influential variable ($\beta = 0.421$, $p < 0.01$), indicating that proximity, affordability, and usability of sports facilities are critical drivers of participation. This finding provides strong empirical support for the argument that the effectiveness of public investment is mediated through access rather than expenditure alone. It also aligns with prior studies emphasizing that community-based and easily accessible infrastructure has a stronger impact on physical activity behavior (Sallis *et al*., 2021; Hoekman *et al*., 2021) [20, 13].

Income (INC) and education (EDU) are also positively significant, suggesting that socioeconomic factors play an important role in shaping participation. Individuals with higher income and education levels are more likely to engage in physical activity, likely due to greater awareness, financial capacity, and exposure to health-promoting behaviors. This finding highlights the presence of structural inequalities that may limit the inclusiveness of public investment outcomes (Adeyemi & Olatunji, 2021) [3].

The R^2 value of 0.48 indicates that approximately 48% of the variation in physical activity participation is explained by the model, suggesting a moderate level of explanatory power. However, it also implies that other unobserved factors—such as cultural norms, safety concerns, and policy implementation quality—may further influence participation outcomes.

Overall, the results confirm that while public investment in sports infrastructure is positively associated with physical activity participation, its impact is significantly constrained by issues related to accessibility, maintenance, and policy effectiveness. The stronger influence of accessibility compared to spending underscores the need to prioritize community-level infrastructure and equitable distribution. These findings are consistent with the Social Ecological Model, which posits that environmental and policy-level factors must interact with social and individual determinants to produce meaningful behavioral change (Sallis *et al*., 2021) [20].

The spatial distribution of sports infrastructure across Nigeria, as shown in Fig 5, reveals significant regional disparities that help explain variations in physical activity participation.

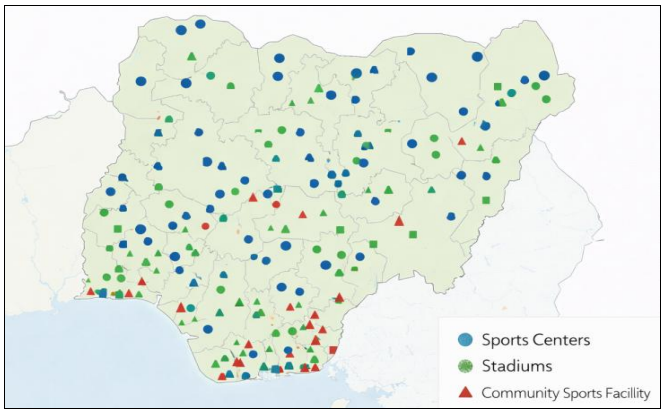

Fig 5: Spatial Distribution of Sports Infrastructure in Nigeria

This figure presents the geographic distribution of sports infrastructure across Nigeria, illustrating the concentration of sports centers, stadiums, and community-level facilities. The map highlights notable regional disparities, with higher concentrations of infrastructure in urban and southern regions compared to relatively underserved rural and northern areas, reflecting inequalities in access and investment.

5. Summary, Recommendations and Conclusion

5.1 Summary

This study examined the impact of public investment in sports infrastructure on physical activity participation in Nigeria through an integrated approach combining government spending review, quantitative analysis, and policy evaluation. The motivation for the study stemmed from the observed disconnect between increasing public expenditure in the sports sector and persistently low levels of physical activity participation.

The findings reveal that although government spending on sports infrastructure has increased over time, its impact on participation remains uneven and relatively modest. While public investment shows a positive relationship with physical activity participation, the strength of this relationship is weak, indicating that increased spending alone is insufficient to drive substantial behavioral change. A key outcome of the analysis is that accessibility of infrastructure—measured in terms of proximity, affordability, and usability—has a stronger and more significant effect on participation than aggregate spending levels.

The study further finds that investments are often skewed toward elite and centralized facilities, which limits widespread access and reduces the overall effectiveness of public expenditure. In addition, factors such as poor maintenance, weak institutional capacity, and inadequate policy implementation significantly constrain the utilization of existing infrastructure. Socioeconomic variables, including income and education, also play an important role, highlighting underlying inequalities in participation. Overall, the findings suggest that the effectiveness of public investment is mediated by accessibility, governance, and broader policy coordination, consistent with insights from the Social Ecological Model (Sallis *et al*., 2021; Bauman *et al*., 2021) [20, 4].

5.2 Recommendations

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

First, there is a need to reorient public investment toward community-level and grassroots sports infrastructure. Government should prioritize the development of local recreational facilities, school-based sports infrastructure, and neighborhood parks that are directly accessible to the majority of the population, rather than focusing predominantly on elite or large-scale projects.

Second, maintenance and sustainability frameworks should be strengthened. Adequate provision should be made for recurrent expenditure to ensure that existing facilities remain functional and attractive for use. In addition, clear institutional responsibilities and accountability mechanisms should be established to improve facility management.

Third, policymakers should adopt a more integrated and multi-sectoral approach to sports infrastructure development. This involves aligning investments with urban planning, public health strategies, and educational policies to create a supportive environment for physical activity. Such coordination is essential for maximizing the impact of infrastructure on behavioral outcomes (Hoekman *et al*., 2021) [13].

Fourth, targeted measures should be implemented to address socioeconomic barriers to participation. These may include subsidized access to facilities, community-based programs, and awareness campaigns aimed at promoting physical activity among low-income and marginalized groups.

Finally, there is a need to strengthen data systems and monitoring frameworks. Improved data collection and evaluation mechanisms will enable policymakers to assess the effectiveness of public spending and make evidence-based decisions regarding resource allocation.

5.3 Conclusion

In conclusion, this study demonstrates that public investment in sports infrastructure has the potential to enhance physical activity participation in Nigeria, but its effectiveness is highly dependent on how such investments are designed, distributed, and managed. The current pattern of spending, characterized by a concentration on elite infrastructure and insufficient attention to accessibility and maintenance, limits the realization of desired public health outcomes.

For public investment to yield meaningful and sustained improvements in physical activity participation, there must be a strategic shift toward inclusive, accessible, and community-oriented infrastructure, supported by effective policy implementation and institutional coordination. By aligning public expenditure with principles of equity, sustainability, and accessibility, Nigeria can better leverage sports infrastructure as a tool for improving population health, reducing inequalities, and fostering broader socio-economic development.

6. References

1. Ahmed Adebusoye AS, Ogunleye AA, Adeyemo FO, Adegoke BOA. Physical activity and its predictors among adolescents in Lagos State, Nigeria. International Journal of Environmental Research and

Public Health. 2021; 18(20):10744.
2. Adebusoye AS, Ogunleye AA, Adeyemo FO, Adegoke BOA. Barriers and facilitators of physical activity among secondary school adolescents in Nigeria: A qualitative study. BMC Public Health. 2022; 22(1):1-12.
3. Adeyemi A, Olatunji T. Infrastructure and sports participation in Nigeria: Evidence from southwestern states. Journal of African Development Studies. 2021; 13(2):45-62.
4. Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJ, Martin BW. Correlates of physical activity: Why are some people physically active and others not? The Lancet Public Health. 2021; 6(2):e100-e111.
5. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research (3rd ed.). SAGE Publications, 2020.
6. Downward P, Rasciute S. The economics of sports participation: A review of evidence. European Sport Management Quarterly. 2021; 21(3):321-339.
7. Eime RM, Charity MJ, Harvey JT, Payne WR. Participation in sport and physical activity: Associations with socio-economic status and health. BMC Public Health. 2020; 20(1):1-11.
8. Eze P, Anyanwu J, Okeke C. Physical activity trends and health outcomes in Nigeria. BMC Public Health. 2022; 22(1):1456.
9. Eze P, Anyanwu J, Okeke C. Public investment and utilization of sports infrastructure in Nigeria. African Journal of Economic Policy. 2023; 30(1):78-95.
10. Giles-Corti B, Moudon AV, Lowe M, Cerin E, Boeing G, Frumkin H, *et al*. What next? Expanding our view of city planning and global health. The Lancet Global Health. 2022; 10(6):e919-e920.
11. Greene JC. Mixed methods inquiry in social research. Jossey-Bass, 2021.
12. Grima S, Caruana L, Thalassinos E. Public sector investment and social welfare: A review. International Journal of Economics and Business Administration. 2021; 9(2):45-60.
13. Hoekman R, Breedveld K, Kraaykamp G. Sport participation and local sports infrastructure: A European perspective. International Journal of Sport Policy and Politics. 2021; 13(2):255-272.
14. Hoekman R, Breedveld K, Kraaykamp G. The impact of sport facilities on participation: A cross-national analysis. Sport Management Review. 2022; 25(3):456-470.
15. Nwankwo C. Public spending and sports development in Nigeria. African Economic Review. 2023; 15(1):89-104.
16. Nwankwo C. Community sports infrastructure and youth participation in Nigeria. Journal of Sport and Development Studies. 2024; 18(1):112-130.
17. Ogunleye AA, Owolabi OT. Public goods provision and social welfare in developing economies. Journal of Public Economics and Policy. 2022; 14(2):67-82.
18. Raza W, Forsberg B, Johansson C. The association between access to sports facilities and physical activity. BMC Public Health. 2022; 22(1):1-10.
19. Rivera M, Smith L, Brown K. Access to sport and recreation for priority populations: A systematic review. International Journal of Environmental Research and Public Health. 2024; 21(1):1-18.
20. Sallis JF, Owen N, Fisher EB. Ecological models of health behavior. Health Behavior and Health Education: Theory, Research, and Practice. 2021; 5:43-64.
21. Stiglitz JE. Economics of the public sector (4th ed.). W. W. Norton & Company, 2020.
22. Volf K, Pedersen KM, Van Bottenburg M. Sport policy and participation: A systematic review. International Journal of Sport Policy and Politics. 2022; 14(4):627-645.
23. World Health Organization. Global status report on physical activity 2022. WHO Press, 2022.
24. Zhu Y, Li H, Chen X. Community sports governance and physical activity participation: Evidence from developing countries. Journal of Sport Policy and Management. 2025; 17(2):201-220.