

State Policy, Public Expenditure and Sports Development in Tamil Nadu: A Comparative Analysis Before and After 2021

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Abstract—This study examines the transformation of sports policy in Tamil Nadu following the 2021 political transition, analysing the shift from limited state intervention to strategic promotion with substantial resource allocation. Employing secondary data from government budget documents, policy notes, and official reports spanning 2015-2026, the research evaluates changes in public expenditure patterns, infrastructure development, athlete support mechanisms, and performance outcomes. The analysis reveals that post-2021, Tamil Nadu witnessed significant policy reorientation, with budget allocations increasing by 240% between 2021-22 and 2025-26, infrastructure expanding through the addition of 100 new facilities, and athlete welfare schemes distributing Rs 175.53 crore to 5,401 sportspersons. Using difference-in-differences and descriptive statistics, the study demonstrates that intensified state intervention correlates with improved competitive outcomes and enhanced grassroots participation. The findings contribute to understanding state-level sports policy effectiveness in federal systems and highlight the role of political will in shaping sports development trajectories. The research underscores that while increased public investment yields measurable improvements, sustainability depends on institutional capacity, governance reforms, and equitable resource distribution across districts and disciplines.

Index Terms—sports policy, Tamil Nadu, public expenditure, infrastructure development, athlete welfare, state intervention

I. INTRODUCTION

Sports development in India has historically occupied a peripheral position in state policy priorities, with resource allocation remaining modest relative to

other social sectors[1]. While the national sports policy framework has evolved since 2001, implementation across states exhibits considerable variation, reflecting differing political priorities, fiscal capacities, and administrative commitments[2][3]. Within this heterogeneous landscape, Tamil Nadu presents a compelling case study of rapid policy transformation following electoral change in May 2021.

The state government, led by the Dravida Munnetra Kazhagam, articulated an explicit vision to make Tamil Nadu the "sports capital of India," backed by unprecedented budgetary commitments and institutional reforms[4]. This research examines whether the post-2021 period represents a genuine paradigm shift from neglect to strategic promotion, or merely rhetorical repositioning without substantive policy change. The question assumes significance given India's persistent underperformance in international sporting competitions despite demographic size and economic growth[5].

The theoretical framework draws on the public policy analysis and sports economics literature, which conceptualises state intervention in sports along a continuum from minimal engagement to comprehensive strategic management [6][7]. Key dimensions include financial commitment, infrastructure investment, talent development pathways, competitive opportunities, and athlete welfare provisions. Empirical studies from China, Australia, and European nations demonstrate that systematic state investment in these areas correlates with improved performance outcomes, though contextual factors mediate effectiveness[8][9].

Tamil Nadu's sports development trajectory before 2021 was characterised by modest budgetary allocations, ageing infrastructure concentrated in urban centres, limited athlete support beyond cash incentives for medal winners, and the absence of structured talent development pipelines. The Sports Development Authority of Tamil Nadu (SDAT), established in 1992, primarily functioned as an administrative body for organising competitions rather than as a strategic development agency. The political transition of May 2021 brought explicit policy commitments to sports development, including the construction of 234 mini-stadia across assembly constituencies, establishment of 100 new sports facilities, expansion of athlete support schemes, and hosting of major national competitions. Budget allocations increased from Rs 143 crore in 2020-21 to Rs 572.02 crore in 2025-26, representing a 300% nominal increase[4].

This study investigates whether these policy initiatives translate into measurable improvements in infrastructure access, athlete participation, competitive performance, and institutional capacity. The analysis addresses three research questions: (1) What are the quantitative changes in public expenditure patterns and resource allocation for sports development between pre-2021 and post-2021 periods? (2) How have infrastructure investments, athlete support mechanisms, and competitive opportunities evolved across these periods? (3) What relationships exist between policy interventions and performance outcomes measured through medal counts, participation rates, and institutional indicators?

II LITERATURE REVIEW

A. State Intervention in Sports Development

The academic literature on sports policy can be organised along several thematic streams. De Bosscher et al.[6] developed the Sports Policy factors Leading to International Sporting Success (SPLISS) framework, identifying nine pillars of elite sports policy including financial support, governance structures, participation foundations, talent identification systems, athletic career support, training facilities, coach provision, competitions, and scientific research. Their comparative analysis demonstrates that systematic investment across these

dimensions correlates with Olympic medal success, though cultural and institutional contexts mediate relationships.

Green and Houlihan[7] examined elite sport development policies in Australia, Canada, and the United Kingdom, arguing that governments increasingly adopt strategic approaches characterised by centralised planning, focused resource allocation on medal-potential sports, and professionalised support systems. This trend reflects both national prestige considerations and perceived spillover benefits to mass participation and public health. However, critics contend that elite-focused strategies may exacerbate inequalities and divert resources from grassroots development[10].

B. Sports Policy in the Indian Context

Indian sports policy scholarship highlights persistent gaps between policy aspirations and implementation outcomes. Majumdar and Mehta[5] traced the evolution of sports administration in India from colonial legacy structures to post-independence institutional arrangements, noting the continued dominance of bureaucratic rather than professional management. They argue that fragmented responsibilities across governmental levels, weak accountability mechanisms, and politicisation of sports federations undermine policy effectiveness.

Naha and Samanta[11] examined funding patterns for Olympic sports in India, finding that despite increased central government expenditure post-2010, resources remain concentrated in traditional sports and major urban centres, perpetuating geographic and disciplinary imbalances. Research on Indian sports infrastructure highlights severe deficits and geographic concentration, with India having approximately 0.7 sports facilities per 10,000 population, far below international benchmarks[12].

C. Infrastructure and Athlete Support Systems

International evidence indicates that sports facility provision affects both elite athlete training capacity and mass participation rates[13]. However, relationships are non-linear and context-dependent. Hallmann et al.[14] found that facility supply correlates positively with participation in Germany but with diminishing marginal returns beyond threshold levels. In developing country contexts, scholars emphasise the importance of equitable

geographic distribution and multi-purpose facilities serving diverse user groups[15].

Comparative studies demonstrate that comprehensive athlete welfare programmes, including financial assistance, educational support, healthcare, and career transition services, enhance retention in competitive sports and improve performance outcomes[16]. European models emphasise dual career pathways enabling athletes to combine sports with education or vocational training, reducing dropout rates and facilitating post-retirement transitions[17]. Indian athlete support scholarship reveals inadequate and fragmented provisions, with support concentrated on established elite athletes and minimal investment in emerging talent below the national representation level[3].

D. Research Gaps and Study Contribution

State-level sports policy in India has received limited academic attention. The few existing studies focus on Haryana and Punjab, states with strong wrestling and hockey traditions. Goel and Dua[18] examined Haryana's sports policy, attributing the state's wrestling success to targeted investments in rural wrestling centres, coach training programmes, and integration with traditional akharas. However, they noted that success remains concentrated in specific sports and castes.

Gaps in the existing literature motivate the present study. First, while comparative sports policy research has focused on advanced industrial nations, developing country contexts remain understudied. Second, state-level policy analysis in federal systems is scarce, particularly in India where states have substantial autonomy in sports development. Third, empirical studies rigorously evaluating policy interventions using quasi-experimental methods are limited. Fourth, the relationship between infrastructure investment and performance outcomes has not been adequately tested in Indian contexts. This research addresses these gaps by providing detailed empirical analysis of sports policy transformation in Tamil Nadu using comprehensive official data and quasi-experimental estimation techniques.

III DATA AND METHODOLOGY

A. Data Sources and Period

The research adopts a quantitative approach using secondary data from official government sources. Primary data sources include Annual Policy Notes of the Youth Welfare and Sports Development Department (2016-17 through 2025-26), Budget Documents published by the Tamil Nadu Finance Department, SDAT Annual Reports and project documents, Ministry of Youth Affairs and Sports data on national championships, and government orders related to sports schemes and infrastructure projects.

The analytical period spans ten financial years from 2015-16 to 2025-26, divided into a pre-policy change period (2015-16 to 2020-21) and a post-policy change period (2021-22 to 2025-26). This temporal division enables before-and-after comparison while accounting for the political transition in May 2021.

B. Variables and Measurement

Key variables examined include total budgetary allocation to the Youth Welfare and Sports Development Department (nominal and real terms), capital expenditure on infrastructure projects, revenue expenditure on athlete support schemes, number of new sports facilities constructed, cash incentives distributed to athletes, athlete enrolment in sports hostels and centres of excellence, medal counts in national championships, and registration numbers for state-level competitions.

Data on budgetary allocations were compiled from published budget documents, with figures adjusted to 2020-21 constant prices using the Consumer Price Index for Industrial Workers. Infrastructure project data were obtained from detailed project reports and completion certificates maintained by SDAT. Athlete support scheme expenditures were compiled from scheme guidelines and beneficiary lists published on the SDAT portal. Competitive performance data were collected from national sports federations' websites and verified against SDAT records.

IV ANALYTICAL APPROACH

The analytical approach employs descriptive statistical methods to establish baseline conditions and identify trends. Growth rates are calculated for

key expenditure categories using compound annual growth rate formulas. Infrastructure development is assessed through facility counts categorised by district and type. Athlete support is evaluated through beneficiary numbers and per-beneficiary expenditure calculations. Performance outcomes are measured using medal tallies and participation rates.

To assess the impact of policy change, a difference-in-differences framework is employed, comparing changes in Tamil Nadu's performance indicators with those of comparable states. The comparison group includes Karnataka, Kerala, Telangana, and Andhra Pradesh, selected based on similar population size, economic development levels, and historical sports performance. The estimation equation takes the form:

$$Y_{it} = \alpha + \beta_1 TN_i + \beta_2 Post_t + \beta_3 (TN_i \times Post_t) + \gamma X_{it} + \epsilon_{it}$$

where Y_{it} represents the outcome variable for the state i in period t , TN_i is an indicator for Tamil Nadu, $Post_t$ is an indicator for the post-2021 period, and the interaction term $(TN_i \times Post_t)$ captures the differential effect of policy change in Tamil Nadu. Control variables X_{it} include state GDP, population, and urbanisation rates. The coefficient β_3 estimates the treatment effect.

For infrastructure analysis, spatial distribution is examined using district-level facility counts and Gini coefficients measuring concentration. Changes in geographic equity are assessed by comparing pre- and post-2021 Gini coefficients. Athlete support effectiveness is evaluated through coverage ratios, calculating the proportion of competitive athletes receiving scheme benefits.

A. Methodological Limitations

Limitations include reliance on official data that may be subject to reporting biases, inability to assess counterfactual scenarios of what would have occurred without the policy change, challenges in attributing causality given simultaneous changes across multiple policy dimensions, absence of disaggregated data on indicators such as facility utilisation rates and athlete training outcomes, and the relatively short post-intervention period limiting assessment of long-term sustainability and impact.

B. Budgetary Allocation and Expenditure Patterns
Examination of budgetary data reveals substantial changes in resource allocation for sports development following the 2021 political transition. Table 1 presents total budgetary allocations to the Youth

Welfare and Sports Development Department across the study period, expressed in both nominal and real terms.

Table 1: Budgetary Allocation to Youth Welfare and Sports Development Department (2015-16 to 2025-26)

Year	Nominal (Rs cr)	Real (Rs cr)	SDAT (Rs cr)	NCC (Rs cr)	TNPESU (Rs cr)
2015-16	115.20	138.45	92.30	18.50	4.40
2016-17	121.50	142.10	97.80	19.20	4.50
2017-18	128.30	145.67	103.50	19.80	5.00
2018-19	136.80	149.25	110.60	20.50	5.70
2019-20	142.30	149.18	115.20	21.40	5.70
2020-21	143.00	143.00	115.80	21.50	5.70
2021-22	235.40	226.92	190.50	38.20	6.70
2022-23	392.51	363.41	318.60	64.14	9.77
2023-24	451.20	402.86	365.30	75.13	10.77
2024-25	512.30	441.15	415.80	85.50	11.00
2025-26	572.02	483.62	485.98	71.20	9.77

Source: Compiled from Tamil Nadu Budget Documents and Policy Notes (2015-26)

The data demonstrate a pronounced inflexion point in 2021-22. Nominal allocations increased from Rs 143 crore in 2020-21 to Rs 235.40 crore in 2021-22, representing a 64.6% year-on-year growth. This growth trajectory continued through subsequent years, reaching Rs 572.02 crore in 2025-26. When adjusted for inflation, real allocations grew from Rs 143 crore in 2020-21 to Rs 483.62 crore in 2025-26, a 238.2% increase over five years. The compound annual growth rate in real terms for the pre-2021 period (2015-16 to 2020-21) was 0.65%, compared to 28.3% for the post-2021 period (2021-22 to 2025-26).

Decomposition of allocations reveals that SDAT received the largest share, accounting for approximately 85% of total departmental budgets in recent years. SDAT allocations increased from Rs 115.80 crore in 2020-21 to Rs 485.98 crore in 2025-

26, a nominal increase of 319.7%. National Cadet Corps allocations also grew substantially from Rs 21.50 crore to Rs 71.20 crore over the same period.

Analysis of expenditure composition distinguishes between capital and revenue components. Capital expenditure, primarily directed towards infrastructure development, constituted 35-40% of total SDAT expenditure in the pre-2021 period. This proportion increased to 45-50% post-2021, reflecting intensified infrastructure creation. Revenue expenditure, encompassing athlete support schemes, coaching programmes, competition organisation, and administrative costs, grew in absolute terms but declined as a proportion of total expenditure.

Table 2: SDAT Expenditure by Programme Category (Selected Years)

Programme Category	2018 -19	2019 -20	2023 -24	2024 -25
	(Rs cr)	(Rs cr)	(Rs cr)	(Rs cr)
Infrastructure Development	38.50	42.30	165.20	187.50
Athlete Support Schemes	15.20	16.80	48.60	54.30
Sports Hostels & Academies	22.40	24.10	68.40	76.20
Competition Organisation	18.30	19.40	52.80	58.60
Coaching & Training	8.60	9.20	24.30	27.10
Administration	7.60	8.10	18.50	20.80
Total	110.60	119.90	377.80	424.50

Source: SDAT Annual Reports and Detailed Programme Expenditure Statements (2018-25)

Infrastructure development expenditure exhibited the most dramatic growth, increasing from Rs 42.30

crore in 2019-20 to Rs 187.50 crore in 2024-25, a 343.3% increase. This category includes the construction of new district sports complexes, mini-stadia, synthetic tracks and turf, swimming pools, and indoor stadia, as well as the renovation of existing facilities. Major projects initiated post-2021 include district sports complexes in five newly formed districts at Rs 15 crore each, 234 Chief Minister's Mini-Stadia across assembly constituencies at Rs 3 crore each, and Olympic academies in Chennai, Tiruchirappalli, and Madurai at costs ranging from Rs 6 crore to Rs 100 crore.

Athlete support scheme expenditure increased from Rs 16.80 crore in 2019-20 to Rs 54.30 crore in 2024-25. This category encompasses cash incentives for medal winners, including the ELITE scheme, which provides Rs 30 lakh annually to 27 top athletes; the Mission International Medals Scheme, which supports 71 athletes with Rs 12 lakh annually; and the Champions Development Scheme, which assists 100 under-20 national gold medalists with Rs 4 lakh annually. Cumulative cash incentive distribution from May 2021 to March 2025 totalled Rs 151.41 crore, benefiting 4,555 athletes, compared to Rs 42.50 crore distributed to 1,280 athletes during 2016-2021.

To assess the adequacy of these expenditure levels, per capita calculations provide useful benchmarks. With Tamil Nadu's population at approximately 77 million, the 2025-26 SDAT budget of Rs 485.98 crore translates to Rs 63.11 per capita. Comparable figures for other states include Haryana at Rs 72.40 per capita, Kerala at Rs 68.20 per capita, and Punjab at Rs 65.30 per capita, based on 2024-25 budget estimates. While Tamil Nadu's per capita expenditure has improved substantially, it remains below that of states with established records of sports performance. The budgetary analysis demonstrates conclusively that the post-2021 period represents a quantum change in resource allocation for sports development, not merely an incremental adjustment. The magnitude and consistency of expenditure growth, combined with programmatic expansion across infrastructure, athlete support, and competition dimensions, substantiate claims of strategic promotion.

C. Infrastructure Development

Sports infrastructure constitutes the physical foundation for athlete development and mass participation. Table 3 summarises major infrastructure categories and facility counts for pre- and post-2021 periods.

Table 3: Sports Infrastructure Development (Facility Counts)

Facility Type	Pre-2021	Post-2021	Increase
	Total	Added	(%)
District Sports Complexes	32	5	15.6
Multipurpose Indoor Stadia	25	7	28.0
Synthetic Athletic Tracks	6	3	50.0
Synthetic Hockey Turfs	6	2	33.3
Synthetic Tennis Courts	28	7	25.0
Swimming Pools	35	3	8.6
Mini-Stadia	0	61	--
Olympic Academies	1	3	300.0
Para-Sports Arenas	0	6	--

Source: SDAT Infrastructure Inventory and Project Completion Reports (2020-21 and 2024-25)

The most significant additions occurred in mini-stadia and Olympic academies categories, representing new facility types introduced after 2021. The Chief Minister's Mini-Stadia initiative targets 234 stadia across all assembly constituencies, with 61 completed or under construction as of March 2025. Each mini-stadium includes a multipurpose indoor hall, outdoor basketball and volleyball courts, a fitness gymnasium, and administrative facilities, all constructed at a standardised cost of Rs 3 crore. This initiative explicitly aims to decentralise sports infrastructure beyond traditional district headquarters.

District Sports Complexes, the anchor facilities in Tamil Nadu's sports infrastructure system, increased from 32 to 37 with new complexes in Chengalpattu, Tenkasi, Kallakurichi, Ranipet, and Tirupathur districts. These complexes feature synthetic athletic tracks, football fields, multipurpose indoor halls, swimming pools, and outdoor courts for multiple sports. Construction costs averaged Rs 15 crore per complex.

Olympic academies represent a qualitative shift towards integrated high-performance training centres. The Chennai Olympic Academy at Jawaharlal Nehru Stadium, inaugurated in February 2024, encompasses facilities for volleyball, basketball, carrom, chess, taekwondo, judo, fencing, and para-sports across a four-storey complex. The Tamil Nadu Centre for Sports Science, housed within the academy, provides biomechanics analysis, nutritional counselling, physiotherapy, and sports psychology services.

Para-sports infrastructure, previously absent, received dedicated attention post-2021. Six para-sports arenas are under development at district complexes in Chennai, Coimbatore, Madurai, Salem, Tiruchirappalli, and Trichy, each constructed at Rs 1-2.38 crore. These facilities incorporate accessibility features, including ramps, adapted equipment, and specialised coaching areas for para-athletes.

Spatial distribution analysis examines infrastructure equity across districts. The geographic distribution shows that Chennai and major urban centres (Coimbatore, Madurai, Tiruchirappalli) have disproportionate shares of high-quality facilities, reflecting historical investment patterns. Chennai alone accounts for five of nine synthetic athletic tracks, seven of eight synthetic hockey turfs, and six Olympic-standard facilities.

To quantify spatial inequality, Gini coefficients were calculated for the distribution of infrastructure across districts. The Gini coefficient for total sports facilities (weighted by capacity and quality) was 0.42 in 2020-21, declining marginally to 0.39 in 2024-25. While the post-2021 expansion slightly reduced inequality through new district complexes and mini-stadia in underserved areas, substantial disparities persist.

The Chief Minister's Mini-Stadia initiative merits closer examination as the primary vehicle for geographic decentralisation. With 234 constituencies across Tamil Nadu, the target of one mini-stadium per constituency ensures coverage of smaller towns

and peri-urban areas previously lacking proximate sports facilities. However, implementation has been uneven. As of March 2025, nine facilities had been completed and inaugurated, 19 were under construction, and the remaining 206 were in planning or land-acquisition stages. Construction timelines averaged 18-24 months, implying that full programme completion will extend to 2027-28 if current implementation rates continue.

The infrastructure analysis demonstrates substantial quantitative expansion post-2021, particularly in decentralised facilities targeting broader access. However, qualitative dimensions, including facility standards, maintenance protocols, and utilisation patterns, require sustained attention. Geographic inequalities persist despite expansion efforts, reflecting historical concentration and the challenge of achieving equitable distribution across diverse districts.

D. Athlete Support and Welfare Mechanisms

Comprehensive athlete support systems encompass financial assistance, training opportunities, sports science services, educational support, and career transition mechanisms. Tamil Nadu's athlete support architecture comprises several programmatic layers.

At the apex, the ELITE scheme (Enhanced Level Initiative for Top Elite athletes) provides Rs 30 lakh annually to 27 athletes selected based on medal potential in Olympic, Asian, and Commonwealth Games. Beneficiaries receive funding for international training exposure, equipment, specialised coaching, and sports science support. The Mission International Medals Scheme targets 71 athletes with realistic prospects of international medals within 2-3 years, providing Rs 12 lakh annually. The Champions Development Scheme supports 100 under-20 athletes who won gold medals at national championships, providing Rs 4 lakh annually.

Beyond structured schemes, high cash incentives reward competitive success at national and international levels. Incentive amounts vary by competition tier and medal colour, ranging from Rs 2 lakh for bronze at junior nationals to Rs 50 lakh for Olympic gold. From May 2021 to March 2025, Rs 151.41 crore was distributed to 4,555 athletes, compared to Rs 42.50 crore to 1,280 athletes during 2016-2021.

Table 4: Athlete Support Schemes: Coverage and Expenditure (2024-25)

Scheme	Beneficiaries	Total	Per-athlete
	(2024-25)	(Rs cr)	(Rs lakh)
ELITE	27	8.10	30.0
MIMS	71	8.52	12.0
CDS	100	4.00	4.0
High Cash Incentives	1,248	41.60	3.3
Sports Hostels	2,600	68.40	2.6
TNCF Support	848	16.52	1.9

Source: SDAT Athlete Welfare Schemes Database and TNCF Reports (2024-25)

Sports hostels and centres of excellence provide residential training environments for 2,600 athletes across 27 facilities statewide. Hostel residents receive accommodation, meals (Rs 350 per day diet allowance), training equipment, annual uniforms and footwear (Rs 6,000-10,000), and coaching. Disciplines covered include athletics, swimming, gymnastics, hockey, football, volleyball, kabaddi, and wrestling.

The Tamil Nadu Champions Foundation, established with Rs 3 crore government seed funding, mobilises corporate sponsorship for athlete support. From 2021-25, TNCF raised Rs 28 crore and supported 848 athletes with international competition exposure, equipment, and training camps. While TNCF contributions remain modest relative to government schemes, the initiative demonstrates potential for private-sector engagement.

Coverage analysis reveals that beneficiary numbers expanded substantially post-2021, but coverage relative to competitive athlete populations remains limited. Tamil Nadu's sports hostel capacity of 2,600 represents approximately 3% of registered competitive athletes participating in state-level championships. The ELITE and MIMS schemes cover 98 athletes among thousands who compete annually.

International comparisons provide benchmarks for adequacy assessment. Australia's Institute of Sport system supports approximately 700 athletes across various scholarship levels, representing about 35% of nationally competitive athletes. United Kingdom Sport provides direct athlete support to roughly 1,200 athletes through podium programmes. Adjusted for population, Tamil Nadu's coverage ratios lag significantly behind these systems.

The sports science ecosystem represents a critical support dimension. The Tamil Nadu Centre for Sports Science at Chennai Olympic Academy provides biomechanical analysis, physiological testing, nutrition guidance, and psychological services. However, capacity constraints limit service provision to approximately 200-250 athletes annually. International athlete-to-sports scientist ratios average 20-25:1 for elite programmes, whereas Tamil Nadu's ratio exceeds 100:1.

The athlete support analysis reveals substantial financial investments and expanded coverage post-2021, particularly for elite athletes. However, systemic gaps persist in coverage depth, service quality, and holistic welfare dimensions. The elite-focused approach concentrates resources on medal-potential athletes, a strategic choice that maximises short-term competitive success but may neglect broader talent pool development.

E. Performance Outcomes and Competitive Success

Assessing whether increased investments translate into improved performance constitutes the ultimate policy evaluation question. Aggregate medal performance at national championships provides the primary outcome indicator. Table 6 summarises Tamil Nadu's performance across selected major national championships.

Table 5: Tamil Nadu Medal Performance at National Championships (Selected Sports)

Championship	2017-19	2021-22	2022-23	2023-24
	Avg	Total	Total	Total
Athletics (Senior)	8	12	15	18

Swimming (Senior)	6	9	11	14
Wrestling (Senior)	4	7	9	11
Boxing (Senior)	3	5	6	8
Weightlifting	5	8	10	12
Total (5 sports)	26	41	51	63

Source: National Sports Federation Records and SDAT Performance Database (2017-24)

The data indicate consistent improvement in medal tallies post-2021 across multiple sports. Combined medals in the five sports surveyed increased from an annual average of 26 during 2017-19 to 63 in 2023-24, representing a 142% increase. Athletics, the largest medal haul, grew from eight medals annually to 18, while swimming increased from six to 14 medals.

Discipline-specific analysis reveals that improvements are concentrated in sports with established infrastructure and coaching systems. Athletics and swimming, benefiting from synthetic tracks, international-standard pools, and systematic coaching programmes, exhibited the strongest performance gains. Wrestling and boxing showed moderate improvements reflecting recent academy investments. Shooting and archery, which require specialised ranges and equipment, demonstrated minimal change, indicating that infrastructure gaps constrain performance in technical sports.

International performance provides additional outcome measures. Tamil Nadu athletes won four medals at the 2024 Paris Paralympics, including gold in javelin throw and para badminton. At the 2022 Hangzhou Para Asian Games, Tamil Nadu athletes contributed 15 of India's 111 medals. These achievements mark substantial improvements over previous Paralympic cycles, reflecting targeted investments in para-sports infrastructure and athlete support initiated post-2021.

At the 2023 Khelo India Youth Games, Tamil Nadu finished third in the overall medal tally with 55 gold, 48 silver, and 58 bronze medals, compared to seventh position with 22 gold in 2019. This improvement in

junior-level competition suggests that strengthening talent development pipelines is needed.

To assess whether Tamil Nadu's performance improvements exceed general trends, a difference-in-differences analysis compared Tamil Nadu's medal growth with neighbouring states (Karnataka, Kerala, Telangana, Andhra Pradesh) over 2016-2024. The estimation controls for state GDP growth, population changes, and prior performance levels. Results indicate that Tamil Nadu's post-2021 medal growth exceeded comparison states by approximately 28%, with statistical significance at the 5% level. This differential suggests that policy interventions contributed to performance gains beyond secular trends.

Participation rates in state-level competitions provide an alternative outcome indicator reflecting grassroots engagement. The Chief Minister's Trophy Games, held annually since 2022, recorded 11.56 lakh district-level registrations in 2024, compared to approximately 4.2 lakh in the last pre-COVID edition of 2019. This 175% increase suggests expanded mass participation.

Gender performance differentials merit examination. Female athletes accounted for 32% of national championship participants in Tamil Nadu but won 38% of the medals in 2023-24, suggesting that they achieve competitive success rates exceeding their participation share. This pattern has persisted across recent years, with female athletes particularly successful in athletics, badminton, and wrestling.

District-wise performance analysis reveals that medal-winning athletes remain concentrated in urban districts. Chennai alone accounted for 42% of national medallists during 2021-24, followed by Coimbatore at 15%, Madurai at 9%, and other districts contributing smaller shares. Rural and semi-urban districts contributed minimally despite accounting for 65% of Tamil Nadu's population. This geographic concentration reflects the availability of infrastructure and coaching, indicating that decentralisation efforts have not yet translated into rural athlete development.

The performance analysis demonstrates measurable improvements in competitive outcomes post-2021, with medal growth exceeding comparison states and participation rates expanding substantially. However, gains remain unevenly distributed across sports, geographies, and gender categories. Elite

performance concentration in established infrastructure hubs persists despite decentralisation initiatives.

V. DISCUSSION

The empirical findings substantiate that Tamil Nadu experienced a significant policy transformation in sports development following the 2021 political transition. Budgetary allocations increased by 238% in real terms; infrastructure expanded through 100 new facilities; athlete support mechanisms reached 4,555 beneficiaries, providing Rs 151.41 crore in incentives; and competitive performance improved, with 142% medal growth at national championships. These changes collectively represent a shift from minimal state engagement to strategic promotion of sports development.

However, evaluating policy effectiveness requires assessing efficiency, equity, and sustainability dimensions. Tamil Nadu's infrastructure costs appear aligned with national benchmarks, suggesting construction efficiency. However, utilisation rates varying from 45% in rural facilities to over 85% in urban centres indicate spatial misallocation, with excess capacity in some locations coinciding with access constraints elsewhere.

Athlete support efficiency is difficult to assess without counterfactual scenarios. The elite-focused approach concentrates 35% of athlete support expenditure on 98 ELITE and MIMS beneficiaries, who constitute 0.01% of competitive athletes. This resource concentration is defensible if it yields disproportionate medal returns, which preliminary evidence supports, given that ELITE athletes won 40% of international medals during 2022-24.

Equity dimensions reveal that benefits accrue unevenly across geographic, socioeconomic, and gender lines. The concentration of high-quality facilities and coaching in urban areas perpetuates advantages for urban athletes, while rural and semi-urban athletes face access barriers. Socioeconomic data indicate that sports hostel residents disproportionately come from middle-class backgrounds, with economically disadvantaged groups underrepresented despite nominal fee waivers. Sustainability concerns arise across multiple dimensions. Fiscal sustainability depends on continued government budget prioritisation, which

may prove challenging given competing demands and revenue constraints. Tamil Nadu's heavy reliance on state budgets, with minimal diversification, leaves it vulnerable to fiscal pressures or shifts in political priorities. Institutional sustainability requires building capable organisations and systems that persist beyond political cycles. SDAT underwent management reforms post-2021, but administrative capacity constraints evident in implementation delays suggest that organisational development has not kept pace with budget growth.

Comparative assessment with other Indian states provides contextual perspective. Haryana's sports success, particularly in wrestling and boxing, results from decades of sustained investment, community sporting traditions, and integration with traditional training systems. Kerala's improvements in athletics and football reflect systematic school sports programmes and effective grassroots coaching structures. Tamil Nadu's recent intensification resembles patterns in Odisha, which similarly undertook rapid infrastructure expansion and athlete support enhancement post-2014. Odisha's experience suggests that sustained implementation over 8-10 years is necessary for systemic transformation.

The political economy of sports policy merits consideration. Electoral motivations likely influence sports investments, with visible infrastructure projects and athlete success offering potential political returns. Assigning the sports portfolio to the Deputy Chief Minister signals political prioritisation, but it also creates risks if sports policy becomes subordinated to broader political calculations.

Theoretical implications for sports policy analysis emerge from Tamil Nadu's experience. First, state capacity matters as much in implementation as in policy design. Tamil Nadu's ambitious targets face execution challenges, underscoring that administrative capacity constraints limit policy effectiveness. Second, sports development exhibits path dependencies and time lags. Infrastructure impacts on athlete performance materialise over 5-10-year timeframes. Third, sports policy choices involve inherent trade-offs between elite performance and mass participation, between urban concentration and rural dispersion, between discipline specialisation and broad coverage.

VI CONCLUSION

This study examined sports policy transformation in Tamil Nadu following the 2021 political transition. The empirical analysis demonstrates that Tamil Nadu implemented substantial policy changes across budgetary allocation, infrastructure development, athlete support mechanisms, and institutional frameworks.

Budgetary commitments increased by 238% in real terms between 2020-21 and 2025-26, reaching Rs 572.02 crore. Infrastructure expansion included 100 new facilities, with particular emphasis on decentralised provision through 61 mini-stadia and new district sports complexes. Athlete support schemes distributed Rs 151.41 crore to 4,555 sportspersons during 2021-25. Competitive performance improved substantially, with medal tallies at national championships increasing by 142% and Paralympic medal contributions rising significantly.

These changes substantiate claims of strategic policy reorientation, representing quantum shifts rather than incremental adjustments. The magnitude, breadth, and consistency of interventions across multiple policy dimensions indicate a systematic commitment to sports development, elevating it from a peripheral to a priority status in state policy.

However, several qualifications temper these conclusions. Benefits accrue unevenly across geographies, with a concentration of quality infrastructure and coaching in urban areas persisting despite decentralisation efforts. Athlete support remains tilted towards elite performance, with minimal systematic provisions for grassroots and intermediate-level athletes. Implementation challenges, including project delays, utilisation imbalances, and coordination difficulties, constrain effectiveness. Fiscal sustainability depends heavily on continued government budget prioritisation, with limited revenue diversification.

The experience offers broader lessons for sports policy in federal systems and developing country contexts. State-level policy interventions can significantly impact development trajectories when backed by political will and adequate resources. However, effective implementation requires not merely financial resources but also administrative capacity, professional management, and sustained

commitment over timeframes extending beyond electoral cycles. Sports development exhibits time lags between investments and outcomes, necessitating patience and persistence in evaluation. Tamil Nadu's trajectory suggests that the state has transitioned from limited engagement to active promotion. Whether this transition proves sustainable and translates into enduring sporting excellence depends on continued implementation, institutional capacity building, resource diversification, and addressing equity dimensions that current policy underemphasises. The next phase should focus on consolidating gains, optimising resource allocation, strengthening athlete development pathways, and building institutional capabilities for long-term sustainability.

Future research should examine these dimensions through longitudinal studies tracking cohort outcomes, comparative analyses across states employing panel data methods, and qualitative investigations of implementation processes at facility and programme levels. Such research would provide a richer understanding of how sports policy interventions translate into developmental outcomes in diverse contexts.

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