ISSN 2320 – 0197

विदर्भ अर्थशास्त्र परिषदेची

तज्ज्ञ परीक्षित संशोधन पत्रिका

(Included in UGC CARE List Group -1)

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(ARTHAMIMANSA)

भारतीय सौर शके १९४७

(जानेवारी-जून २०२५ / खंड १७, अंक १)

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♦ संपादकीय पत्रव्यवहार♦

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विदर्भ अर्थशास्त्र परिषद कार्यकारिणी

(२०२५-२६)

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आजीव सदस्यता शुल्क : रू. १५०० /- आहे. ही रक्कम माजी सचिव डॉ. विठ्ठल घिनमिने, सहयोगी प्राध्यापक, श्री साईबाबा लोकप्रबोधन कला महाविद्यालय, वडनेर, ता. हिंगणघाट, जिल्हा वर्धा यांचेकडे "विदर्भ अर्थशास्त्र परिषद" या नावाने डिमांड ड्राफ्टने पाठवावी किंवा डॉ. विठ्ठल घिनमिने यांच्याशी ९६८९६४२४४९ या नंबरवर संपर्क साधावा.

☐ **प्रमुख संपादक – 'अर्थमीमांसा'**

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१) परिषद सभासद - २५० रू.
२) शैक्षणिक संस्था – ३५० रू.

अनुक्रमणिका
(INDEX)

संपादकीय .....

'अर्थमीमांसा' या संशोधन पत्रिकेचा खंड १७, अंक १ (जानेवारी-जून २०२५) वाचकांसाठी सादर करताना आनंद होत आहे. या अंकामध्ये आर्थिक, सामाजिक, औद्योगिक, शैक्षणिक आणि आरोग्य क्षेत्रांना व्यापणारे एकूण १७ महत्त्वाचे शोधनिबंध व एक ग्रंथ परिचयात्मक टीपण समाविष्ट करण्यात आले आहेत. या विविध लेखांच्या माध्यमातून वाचक व अभ्यासकांना विविध आर्थिक प्रश्नांचे विश्लेषण, त्यानुषंगाने धोरणनिर्मिती आणि विकासाच्या दृष्टीने उपयुक्त दिशा समजून घेता येईल असा विश्वास आहे.

डॉ. राशी अरोरा यांनी त्यांच्या शोधनिबंधात विदर्भाच्या औद्योगिक पिछाडीचा ऐतिहासिक आणि वस्तुनिष्ठ आढावा घेतला आहे. पूर्वी औद्योगिकदृष्ट्या संपन्न असलेल्या विदर्भाची आजची स्थिती आणि या क्षेत्राच्या पुनरुज्जीवनासाठी आवश्यक उपाय यावर चर्चा केली आहे. क्राती जैन आणि डॉ. जे. एन. शर्मा यांनी भारतातील २५ राज्यांमधील उत्पादन क्षेत्राच्या वृद्धीवर परिणाम करणाऱ्या विविध घटकांचे विश्लेषण केले असून, उत्पादन क्षेत्राच्या वृद्धीसाठी महत्त्वपूर्ण धोरणात्मक सूचना केल्या आहेत. तर, डॉ. नंदकुमार बोधगिरे यांनी सार्वजनिक क्षेत्रातील बँकांच्या आर्थिक कार्यक्षमतेचे वस्तुनिष्ठ विश्लेषण केले असून, वित्तीय स्थैर्याचे निकष निश्चित करून त्याचे धोरणात्मक महत्त्व अधोरेखित केले आहे.

डॉ. धीरज कदम व डॉ. दीपक चौधरी यांनी महाराष्ट्रातील बहुआयामी दारिद्र्याच्या क्षेत्रीय विषमतेचे विश्लेषण केले असून, दारिद्र्य निवारणासाठी प्रदेश-विशिष्ट धोरणात्मक उपाय योजण्याची आवश्यकता प्रतिपादित केली आहे. डॉ. बी. एन. हरीशा यांनी कर्नाटकच्या वित्तीय एकत्रीकरण धोरणांचा अभ्यास करून त्याचा राज्याच्या आर्थिक स्थैर्यावर झालेला परिणाम स्पष्ट केला आहे. तर डॉ. दिग्विजय पाटील, प्रा. एम. एस. देशमुख आणि अमानुएल गेब्रे यांनी भारतीय खाद्य प्रक्रिया क्षेत्राची वाढती क्षमता, त्याची जागतिक परिप्रेक्षातील भूमिका आणि त्यासमोरील आव्हाने यांचा विस्तृत आढावा घेतला आहे. प्रकाश सिंह आणि प्रा. रजनीश पांडे यांनी उत्तराखंडच्या औद्योगिक क्षेत्राची क्षमता, त्यासमोरील भौगोलिक आणि पर्यावरणीय आव्हाने आणि त्यावर मात करण्यासाठी आवश्यक धोरणात्मक सूचनांचा अभ्यास केला आहे. पारुल रात्रा व डॉ. जगदीप कुमार यांनी स्थानिक स्वराज्य संस्थांमध्ये डिजिटल तंत्रज्ञानाचा वापर करून शाश्वत विकास आणि पारदर्शकता कशी साध्य करता येईल यावर सखोल चर्चा केली आहे. डॉ. लक्ष्मण म्हस्के आणि महेश देशमुख यांनी स्टार्टअप इंडिया मोहिमेचा महाराष्ट्रातील उद्योजकतेवर झालेला परिणाम, MSME क्षेत्राची भूमिका आणि भविष्यातील उद्योजकतेसाठी आवश्यक धोरणात्मक सुधारणा सुचविल्या आहेत.

रजत कुमार महेश्वरी आणि डॉ. आर. के. मोर यांनी "Doctrine of Lost Grant" या कायदेशीर सिद्धांताचे आर्थिक परिणाम आणि त्याचे आर्थिक विकासाशी असलेले संबंध स्पष्ट केले आहेत. डॉ. विजय बनसोड यांनी राष्ट्रीय शैक्षणिक धोरण २०२० चे आर्थिक परिणाम आणि भविष्यातील आर्थिक प्रगतीसाठी आवश्यक धोरणात्मक बदल यावर चर्चा केली आहे. डॉ. रवि पाठेकर यांनी बालकामगार समस्येचा सामाजिक

आणि आर्थिक दृष्टिकोनातून व्यापक अभ्यास करून धोरणात्मक उपाययोजनांची गरज अधोरेखित केली आहे. डॉ. शायिन शेख आणि प्रा. नागार्जुन वाडेकर यांनी महाराष्ट्रातील सार्वजनिक आरोग्य व्यवस्थेची आर्थिक स्थिती आणि त्याच्या धोरणात्मक परिणामांची चर्चा केली आहे. तर डॉ. समित माहोरे यांनी जोन रॉबिन्सन यांच्या 'आर्थिक तत्त्वज्ञान' या ग्रंथाचे समकालीन आर्थिक विचारधारेत स्थान आणि महत्त्व यांचा समीक्षात्मक परिचय करून दिला आहे.

हा अंक सिद्ध करण्यासाठी सर्व लेखकांनी जे योगदान दिले त्याबद्दल त्यांचे आभार व्यक्त करतो. सोबतच, परिषदेचे माजी व वर्तमान कार्याध्यक्ष आणि अध्यक्ष, सचिव आणि कार्यकारिणीचे सर्व सदस्य या सर्वांची मला हा अंक सिद्ध करत असतांना मदत झाली; अर्थमीमांसाच्या संपादक मंडळाने योग्य ते मार्गदर्शन केले, त्याबद्दल विदर्भ अर्थशास्त्र परिषद, संपादकीय मंडळ आणि मुद्रण सहकाऱ्यांचे मी मनःपूर्वक आभार मानतो; आणि हा अंक आपल्या प्रतिक्रियेसाठी सादर करतो.

दिनांक : ३० जून २०२५
स्थळ : नागपूर

(डॉ. धीरज सु. कदम)
प्रमुख संपादक 'अर्थमीमांसा'

Vidarbha's Industrial Regression: A Case of Economic Exclusion in The State of Maharashtra

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Abstract:

Vidarbha in the past had shown a strong potential for industrial and economic growth. The region was a base for the growth of large-scale textile units like Empress Mills & Model Mills. It was the center for printing presses, including the Government's Central Press. Due to significant orange production, the cold storage units in Vidarbha gained ground. But today, in contrast to the historical healthy picture, its industry is in distress analogous to its agriculture. This being the case, it is crucial to factually establish that the industry of Vidarbha was a flourishing one along with studying the retrogressive transition of Vidarbha's industry from a prosperous to a distressed one, with an objective to understand the chief reasons for this transition along with deliberating on the possible solutions to revive its industry and economy.

Key Words: *Vidarbha's Industry, Economic Exclusion, Regional Inequality*

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I. Introduction

Maharashtra is geographically classified into five regions namely Konkan, Pune, Nashik, Marathwada and Vidarbha. Though Maharashtra is one of the richest states of India, all of its regions do not replicate the same story. The state is afflicted with the problem of growing regional disparities. The seriousness of this issue is substantiated by the State Government time and again constituting committees to study the nature and extent of regional imbalances, which signifies that the problem is a complicated with continual roots, and the inability of the public authorities in successfully addressing it.

From the five regions of Maharashtra, Vidarbha is one of the two regions (the other is Marathwada) suffering from severe regional backwardness. Even though Vidarbha, comprising of Nagpur and Amravati Divisions, occupies 31.6% (97,321 km ^{2}) of Maharashtra's land area and 21.3% of population, its Gross Domestic District Product is significantly lower than the economically developed Konkan, Pune and Nashik. Today, the region is not only infamous for its farmers' woes but its industry is also in a similar condition.

However, what is noteworthy is that historically the situation was not the same as Vidarbha's industry was not only progressive but showed immense growth potential due to:

i) The presence of rich minerals and resources as Vidarbha holds 2/3rd of Maharashtra's mineral resources and 3/4th of its forest resources (SIPVR, 2015-16),

ii) Trade advantage due to central geographical location in India, and
iii) The potential to develop into a power sector hub due to its rich coal base.

In contrast to the above, the state of affairs today is that:

i) Vidarbha's minerals remains untapped towards its growth (Bhagwat, 2013),
ii) It has not become the nucleus of nation's trade and commerce, and
iii) Though Vidarbha is a power hub with generation of 17,000 MW of power, it is far above its own requirement/ consumption of 1600 MW(Roy,2019). This excess power production is to supply uninterrupted power to other regions at its own expense as there are frequent power cuts in Vidarbha along with environmental degradation due to the thermal powers stations spread over the region.

The primary reason for the above mishandling of Vidarbha's resources is its annexation to Maharashtra in 1960. Despite strong voices against the move, the annexation was amidst strong assurances from governments of the time on the usage of the region's economic potential for the benefit of its own people. To the contrary, today the once 'resource-rich' and 'budget-surplus' Vidarbha is economically backward while those regions that showed budgetary deficit prior to their inclusion in Maharashtra are rich and prospering.

Research Objective & Method

The research uses extensive quantitative and qualitative secondary data to study the historical state of Vidarbha's economy, particularly its industry and its transition over time. Further, the research aims to factually study the impact of Vidarbha's annexation to Maharashtra, on its industrial growth along with presenting corrective measures.

II. Literature Review

Pande Committee (1968), studied regional disparities in India with Vidarbha emerging as one of the backward regions. Simultaneously, **MECD (1970)** suggested the need to promote agro-based industries in Vidarbha to solve the problem of sparse industrialization. Ignoring these early warning signs led to the setting up of **Dandekar & et.al. (1984**) committee, that found the backlog of expenditure to be much higher in Marathwada and Vidarbha, also indicating the same to be a prime reason for their economic backwardness. Failure in implementing Dandekar committee recommendations, led to constitution of **Indicators and Backlog Committee (1995),** which declared that the regional disparities had indeed increased from 1984 to 1994 in Vidarbha and Marathwada whereas reduced in rest of Maharashtra. **Mishra (2006),** proclaimed a deliberate neglect of Vidarbha by politicians, irrespective of political parties. **CAG Report (2006-07),** also established that Vidarbha's development funds were diverted for the progress of influential Western Maharashtra. **Kelkar Committee Report (2013),** broadly documented widening of regional disparities in Maharashtra with reference to Vidarbha and Marathwada.

The literature review validates economic backwardness of Vidarbha and the failure of successive governments to address this issue only intensifying it over time. However, the studies fail to factually travel through the historical progressive picture of Vidarbha's industry and economy to their present day despair i.e. their position 'prior

to' and 'after' Vidarbha's merger with Maharashtra. This study is being carried out to fill that identified research gap.

III. History of Vidarbha, Its Economy & Industry

A) History of Vidarbha

The erstwhile Central Provinces and Berar is today known as the region of 'Vidarbha'. *The Central Provinces and Berar* existed from 1936 to 1950 and was formed by the merger of the Central Provinces with the Province of Berar. The Central Provinces and Berar became the new Indian state of Madhya Bharat in 1950, merged with Madhya Pradesh in 1956, and then was transferred to Bombay State along with all Marathi speaking areas. In the year 1960, Bombay State was split along linguistic lines into the states of Maharashtra and Gujarat and Marathi speaking Vidarbha was annexed to Maharashtra.

B) Historical Profile of Vidarbha's Economy

Vidarbha showed a strong growth potential in the past, which is substantiated by its historical revenue and expenditure details, food surplus and the report of State Reorganization Commission as given below:

i) Revenue& Expenditure of Central Provinces & Berar

The Memorandum submitted by Dr. Aney to State Reorganization Commission supports the premise of 'Vidarbha was being economically sound' which is contrary to the claims that 'Vidarbha historically has been persistently an economically weak region' and not a region that has suffered because of its annexation to Maharashtra and subsequent political neglect. The memorandum indicates that despite some years of financial deficit, there were other favourable years when budgetary surplus existed. In 1946-47, this surplus was of Rs. 75 Lakhs and a significant Rs. 121 Lakhs in 1952-53 (Aney 1954), (Annexure 1).

ii) Vidarbha - A Surplus Region in Food Grains

The region's agriculture not only gave it self-sufficiency in food grains but surplus (a) to supply foodgrains to the deficit states of India and (b) to supply inputs to processing industries. Deshpande's (Deshpande, 1973) work on the 'Rice Milling Industry' validates Vidarbha as a food-grains surplus region as against its current agrarian woes. In fact, its yield in the commercial crop cotton was about 1/3rd of the total production in the textile power-house India, also implying healthy symbiotic relationship between agriculture and industry, as is crucial for overall economic development of a region.

iii) State Reorganization Commission Report 1955

The State Reorganization Commission Report 1955 opinioned that a separate state of Vidarbha be created, instead of it becoming part of Maharashtra. The Commission feared that the economically surplus region of Vidarbha, '*of crore and a half of rupees or possibly more',* may be given a step-motherly treatment in funds allocation and in other aspects with Bombay declared as the capital of Maharashtra and Nagpur having lost its capital and power status.

C) Historical Profile of Vidarbha's Industrial Sector- A Promising Picture

The first traces of industrialization in Vidarbha were as early as in 1877 when

Empress Mill was set up in Nagpur by Jamsetji Tata. This was the time when textile industry was the backbone of the country's industrial sector. This was also the time when in Vidarbha's Chanda district coal mining was reconnoitered. These initial seeds of industrialization mushroomed with time and diversified into other ancillary industries. It was only natural to believe that this initial advantage should have lead towards the region's industrial development.

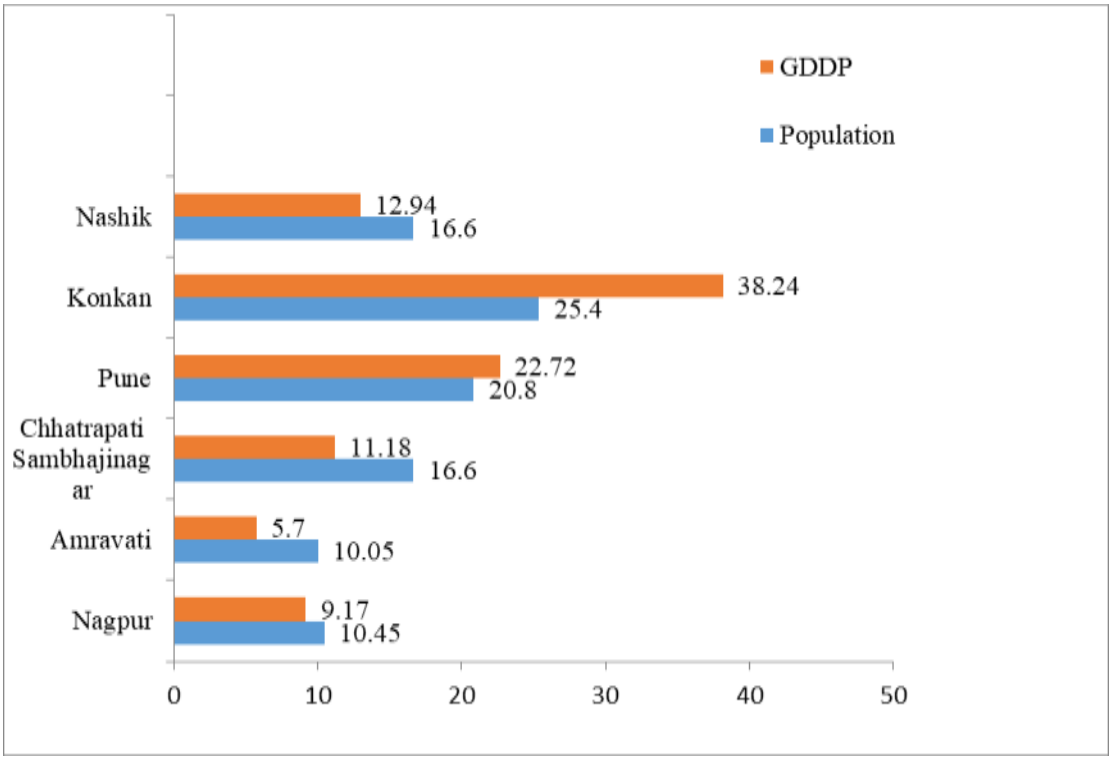
According to the A.I.M.O Monograph (1945), with rich mineral base the region was an attraction to several diverse industries and a good source of employment to the local population. The region's industry gave employment to 4, 64,737 persons with a population of 92.01 lakhs and 25.6 lakh literates (Census 1961). The NCAER (1963) survey had pronounced West, North Maharashtra and Nagpur Division as having greatest promise in attracting industries, along with advocating the State Government to provide support for the same.

IV. CURRENT ECONOMIC & INDUSTRIAL PROFILE OF VIDARBHA

A) Current Overall Economic Profile

The average share of the State's contribution is highest at 13.9% among all states in All-India nominal GDP. The State's Net State Domestic Product (at current prices) for the year 2020-21 stood at Rs.23,93,953 crore with the highest contribution coming from the Konkan division and lowest from Amravati and Nagpur divisions of Vidarbha. This is because the developed regions have the ability to contribute better to the State's Domestic Product (Annexure 2).

Chart 1: % Contribution of Divisions to State's GDDP and Population



Source: Economic Survey of Maharashtra 2019-20.

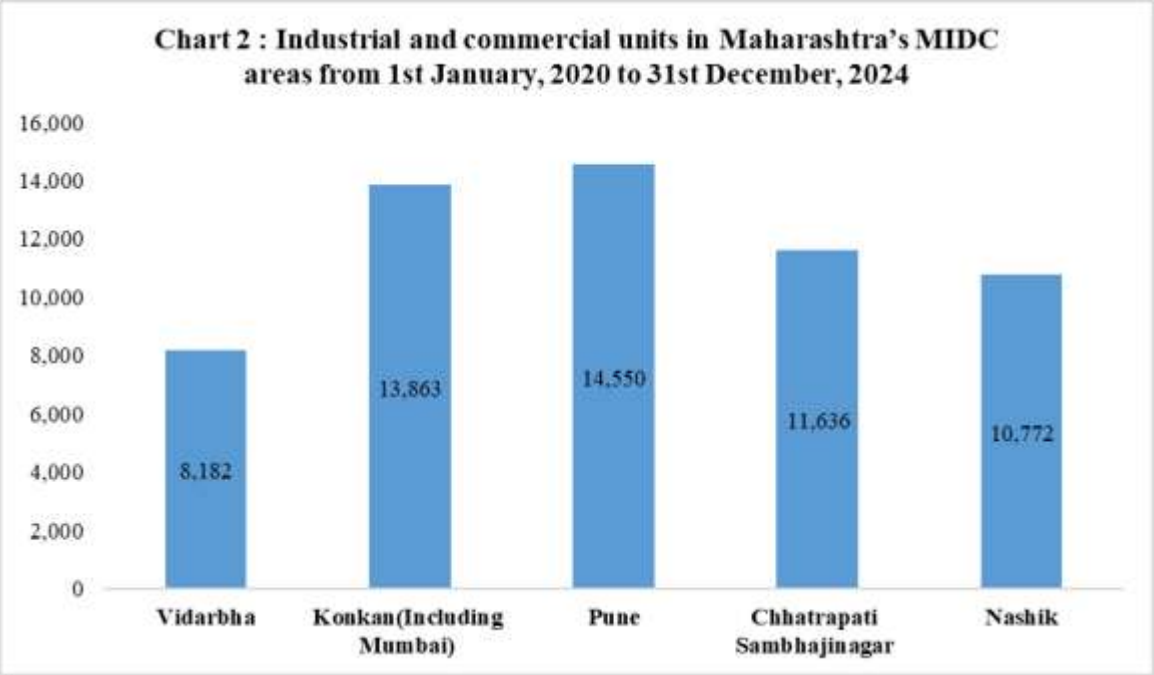
Analysis of the Chart- 1: Backward regions display a lower national income in comparison to their population base. The same is true for Vidarbha. The GDDP contribution of Konkan division is 150.55%(38.24/25.4) to its population, Pune's is 109.23% , Nashik's is 77.95 %, while that of Nagpur & Amravati divisions are in contrast to the developed regions at 87.75 % and 56.71% of their population respectively.

B) Current Industrial Profile

The current industrial profile of Vidarbha clearly shows the failure of the region to carry forward its legacy of a thriving industry. It is validated from the state of crucial indicators:

i) Presence of Industry

Industrial presence is insignificant in Vidarbha compared to the developed regions of Pune, Konkan, Nashik and Chhatrapati Sambhajinar. There are only 8,182 units in Vidarbha which are significantly lower than the other divisions, factually pointing out at Vidarbha's the industrial backwardness (Chart 2). This in turn has a direct negative impact on the region's employment potential and investments.



Source: Economic Survey of Maharashtra 2024-25

ii) Existence of Large Enterprises

Large scale industrial units are concentrated primarily in Konkan (Inclu. Mumbai) and Pune divisions. Compared to this, their presence is much lower in both Nagpur and Amravati divisions at 11% and 3.0% respectively (Annexure 3). Because of this insignificant presence of large enterprises, the region's ancillarisation and employment generation through them is adversely impacted.

iii) Growth of Medium, Small and Micro Enterprises (MSMEs)

The healthy growth of Medium, Small, and Micro Enterprises is another indicator of industrial progress. As shown in Annexure 4, the share of a number of Udyog Aadhaar MSMEs in Maharashtra is least in the Amravati division. Though the number of

Udyog Aadhaar MSMEs appears to be higher in Nagpur division compared to Chhatrapati Sambhajinagar and Nashik divisions, this deceptive numbers become clear with perusal of investment figures and employment generated through them, which is much less in Nagpur division as compared to Chhatrapati Sambhajinagar and Nashik divisions.

V. Political Neglect the Main Cause of Vidarbha's Industrial Regression

The reasons for industrial backwardness are inadequacy of crucial factors responsible for industrial growth like inadequacy of industrial estates, backlog in irrigational expenditure, high power tariff, insignificant presence of large scale units, etc. However, in Vidarbha's case the reason for this inadequacy can be attributed chiefly to the political neglect of the region by successive state governments, as factually elucidated below:

Prior to 1960, Vidarbha's Nagpur district had a political clout in C P & Berar Province. The Province's policies were framed keeping in mind its industrial and economic growth. With Vidarbha's annexation to Maharashtra in 1960, this advantage was lost. Over the years utter neglect of the region by successive governments has resulted in a backlog of resource allocation and economic backwardness. *Dandekar& et.al. (1984)* calculated this backlog at Rs. 3186.78 crores for Vidarbha. Though the report was not formally accepted by the State Government, however it responded by making paltry allocations to Vidarbha to remove regional imbalances. *Indicators and Backlog Committee (1997),* concluded that Vidarbha's backlog had increased to Rs. 6624.02 crores. Their suggestions for removal of the backlog though were accepted by the State Government, however the process of backlog removal was delayed till 2001-02. Since the efforts were not adequate and earnest, the same was pointed out by *Mishra (2006),* finding deliberate neglect of Vidarbha by politicians. The report specially studied the working of Article 371(2) of the Constitution and concluded that the Article 371 (2) had failed to give economic justice to Vidarbha. *CAG Report (2006-07),* also mentioned that Western Maharashtra benefited at the cost of Vidarbha which has been deprived of 70% of its funds. *Kelkar Committee Report (2013),* stated that Vidarbha, Marathwada, and tribal districts of Nasik division are far behind Mumbai and Pune divisions in terms of per capita income (PCI). *Report of The Inter Divisional Committee (2015),* examining the state of various factors crucial for industrialization in Vidarbha, pointed out that high power tariffs in Vidarbha are harming its industrial growth and thus requires lower power tariffs (from rest of Maharashtra) to compete with neighbouring states. This so far has not been successfully addressed to.

These studies factually point out to the deliberate political neglect of Vidarbha in funds allocation and economic development, which in turn is the main reason for Vidarbha's transition from historical prosperity to the present state of economic despair.

VI. Remedies to Vidarbha's Industrial Woes

Following are some suggestions to improve Vidarbha's economic and industrial prospects:

- Industrial power tariffs should be reduced in the region equivalent to the rates prevailing in the neighbouring states like Chhattisgarh and Andhra Pradesh.
- Improvement in ease of doing business with better governance from set-up stage to working process.
- Developing strong linkages between agriculture, industry and service sectors, similar to those that existed in the past.
- Developing enterprises connected with wildlife and eco-tourism as the region has a good presence of tigers in its forest, attracting tourists from around the world.
- Promoting growth of large scale units to provide industrial ancillarisation.
- Tackling the problem of safety and security in minerals and resource rich Gadchiroli district and its adjoining areas.
- Developing dry ports to promote exports from Vidarbha.
- Developing MIHAN (Multimodal International Passenger and Cargo Hub at Nagpur) into a national and international logistic hub.
- India has numerous examples where innovative PPP models were instrumental in developing backward areas. PPP model growth needs to be promoted in Vidarbha for building the crucial social and economic infrastructure like transportation, health care, education, power, etc.

VII. Exploring 'A Separate State of Vidarbha'

Vidarbha was merged with Maharashtra simply on the grounds of a common language without any social and economic rationalization. Over years, the political neglect and unequal distribution of development funds has all but eroded the region's economic health. To rectify this misdoing, it requires exclusive focusing towards the region's development which can only actualize with the creation of a separate state of Vidarbha. The prominent arguments in favour of this are:

- Vidarbha has surplus energy generation, minerals, cotton, rice, etc. But the same have not been utilized due to the lack of development funds.
- Smaller states are more efficient from administration and governance point of view.
- Vidarbha has the required infrastructure for a state as Nagpur had capital status in the past. It has The Reserve Bank of India's branch, Mumbai High court bench, Legislative Assembly, etc., and not to forget its location at the centre of India that provides it with good connectivity across India.
- Creating a separate state will enable Vidarbha to have its own policy making and to take long pending appropriate decisions towards reduction of power tariff rates for industry in particular, creating water reservoirs, dams, river connectivity, wells, etc., towards a permanent solution to the farmers' woes and other regional issues that so far have not been addressed.

VIII. Concluding Remarks

The above remedies can be instrumental in restoring the faith of industrial investors in the region and for creating a positive effect

for expansion and investment by new units. It is earnestly hoped that an early cognizance is taken of the above recommendations since it can assist the policy-makers and stakeholders in improving Vidarbha's industrial scenario.

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Annexures

Annexure 1: Details of Revenue & Expenditure of Districts of Vidarbha* (1946 to 1952-53) (in Lakhs)

	1946-47	1950-51	1951-52	1952-53
Revenue	5,35	7,59	8,94	9,60
Expenditure				
i)Ordinary (Overhead charges added/ deducted)	4,26	7,43	7,58	6,67
ii)Development	34	142	140	172
Surplus/Deficit	75	-126	-4	121

Source: The Memorandum submitted by Dr. Madhao Shrihari Aney to State Reorganization Commission (1954). *Districts constituting Vidarbha are Nagpur, Wardha, Chanda, Bhandara, Akola, Amraoti, Buldana and Yeotmal.

Annexure 2: Gross District Value Added & Per Capita Income of Maharashtra's Divisions

Divisions	Nagpur	Amravati	Chhatrapati Sambhajinagar	Pune	Konkan (Inclu. Mumbai)	Nashik
Population(in crores)(Total of State-11.24 crores) (Census 2011)	1.18	1.13	1.87	2.34	2.86	1.86
% Share	10.45	10.05	16.6	20.8	25.4	16.6
Nominal Gross District Domestic Product at current prices (Rs. crores 2020-21)(+)	2,48,922	1,55,566	3,03,210	6,16,254	10,36,950	3,50,782
% Share in GDDP of divisions (Rs. crores 2020-21)	9.17	5.7	11.18	22.72	38.24	12.94

Source: Economic Survey of Maharashtra 2021-22. (+) First revised estimate

Annexure 3: Division Wise Details of Large Enterprises (as on 31.12.2011**)**

Region	**Large Enterprises**	**% share**	**Employment**
Konkan (Inclu. Mumbai)	1,533	31.2	2,92,000
Nashik	6,65	13.6	1,52,000
Pune	1,490	30.3	4,07,000
Chhatrapati Sambhajinagar	5,38	10.9	1,11,000
Amravati	1,48	3.0	32,00
Nagpur	5,41	11	1,31,000
Maharashtra	**4,915**	**100**	**11,25,000**

Source: Industrial State Profile of Maharashtra 2013-14

Annexure 4: Division wise information of Udyog Aadhaar MSMEs (October, 2015 to December, 2019)

Division	**Udyog Aadhaar MSMEs**		**Employment**		**Investment**	
	Number	**Share In %**	**Number Lakh**	**Share In %**	**Amount In Crore**	**Share In %**
Mumbai	3,05,195	20.5	18.73	23.7	37,641	17.6
Konkan (Excl. Mumbai)	3,22,933	21.7	17.53	22.2	43,653	20.5
Nashik	1,31,371	8.8	6.52	8.2	23,255	10.9
Pune	3,36,317	22.6	20.41	25.9	62,575	29.3
Chhatrapati Sambhajinagar	1,52,955	10.2	7.56	9.6	22,604	10.6
Amravati	59,346	4.0	2.28	2.9	6,971	3.3
Nagpur	1,82,085	12.2	5.89	7.5	16,701	7.8
Total	**14,90,202**	**100.0**	**78.92**	**100.0**	**2,13,400**	**100.0**

Source: Economic Survey of Maharashtra-2019-20, pp 135

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Determinants of Manufacturing Output in India: Panel Data Analysis

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Abstract

This study investigates the determinants of manufacturing output in India for the period 2000 to 2019 considering 25 states of India. The study employed panel data regression analysis on secondary data extracted from EPWRF. Traditional panel data models of POLS, FEM and REM have been estimated along with the long-run FMOLS and DOLS models. As per the result, variables of total persons engaged, fixed capital, working capital, fuel consumed and output of service sector have positive and significant influence on output of the manufacturing sector in India but agriculture production have negative and significant impact on manufacturing output in long-run. Among the three models, the study found out that Fixed Effect model is the most appropriate model and as per the FMOLS and DOLS model there exist a long-term association between the variables.

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Section-I

1.1 Introduction

The manufacturing sector plays a crucial role in economic development, reflecting a country's level of progress through its modernity and performance. Both developed and developing nations focus on improving manufacturing through heavy investment, policies, and attracting FDI, which is believed to bring innovation, create jobs, and boost production in both consumer and capital sectors. Manufacturing is a key driver of wealth, job creation, and reduces disguised unemployment, particularly in countries like India, where it also helps bridge regional disparities, increase exports, and improve foreign currency reserves. India's manufacturing sector has grown rapidly due to favorable policies, rising consumer demand, skilled labor availability, and increased FDI.

However, the critical question remains: what factors determine manufacturing output across India's states? This study aims to identify these factors by analyzing 25 states with varying income levels, providing a comprehensive understanding of what influences manufacturing performance.

Present study aimed to determine various factors which affects manufacturing output in the sample of 25 states in India. Namely, we selected the economic variables which are elicited and are assumed to have a direct control over the dependent variable. We targeted a heterogenous country which compromises of all income group states, developed and developing states which will give an accurate picture of determinants which affect manufacturing output.

Section 2

2.1 Literature Review

Attention may be drawn on the fact which explains the factors determine the economic output has been remarkable. Much of the number of studies has attempted to pursue the relationship between factors that determine manufacturing output.

Studies by *Farhad Hussain, Sun Jianfu and Muhammad Kamran (2023), Nahaian Bin Abdullah (2022), Aragaw Eshetie Aguade (2022), Larrisa Batrancea, Malar Mozhi Rathnaswamy and Ioan Batrancea (2021), Sazan Taher Saeed (2017), Reenu Kumari and Anil Kumar Sharma (2015)* used econometric models including POLS, fixed effect, random effect and Hausman test to analyze the effect of macroeconomic variables on the growth of manufacturing industries. These studies have also applied panel data regression models by using panel data for different time period, and also used several variables like the study of Farhad Hussain used corporate tax, and interest rate, exchange rate, stock market development and a public debt while the study of Aragaw Eshetie Aguade (2022) used Ownership, firm-size, advertising intensity and import intensity, firm size, government and advertising intensity as independent variables. Study of Reenu Kumari and Anil Kumar Sharma (2015) used several explanatory variables like market size, trade openness, infrastructure, inflation, interest rate, human capital and research and development. All these studies have revealed that manufacturing sector growth rate was substantially influenced by economic indicators such as imports, exports, gross capital formation. Labour force participation rate negatively impacts manufacturing economic growth while institutional, capital formation and advancement of technology has a positive relation with manufacturing economic growth. All the above studies used POLS, fixed effect model and random effect model to check the association between the variables and to check the appropriateness of the models the studies applied Hausman Test.

This study is divided into four sections: the first section is related with introduction, second sections deal with review of literature, third section consist data and data source, econometric modelling and the last section which is fourth sections is related with results and conclusion.

Section 3

3.1 Data Nature and Source

In this study, panel data has been used for 25 states of India for the period 2000 to 2019. The data was extracted from EPWRF (Economic and Political Weekly Research Foundation). These 25 states are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu Kashmir, Jharkhand, Karnataka, Kerela, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orrisa, Punjab, Rajasthan, Tripura, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.

The present study considers Manufacturing Output as dependent variable and Total Persons Engaged, Working Capital, Fixed Capital, Fuel Consumed, Agriculture Production and Service Sector output as the independent variables. For this purpose, panel data has been used because it

contains numerous advantages in terms of accuracy and measurability compared to time series or cross section data and moreover it includes more variables and more information as compared to pure time series or cross section data.

3.2 Model Specification

The panel data regression model is expressed as below:

$Y_{it}= \alpha + \beta X_{it} + \mu_{it}$

Where i= 1, 2,…N for cross-section and t= 1,2,…..T for years. Y is the dependent variable and X is the independent variable.

Considering the dependent and independent variable, the model is specified as:

GVO= f (TPE, WC, FIC, FC, AP, SS)

Where, GVO – gross value added of manufacturing output, TPE- total persons engaged, WC- working capital, FIC- fixed capital, FC- fuel consumed, AP- agriculture production and SS- output of service sector.

Taking ln (natural logarithm) the model becomes:

$\ln GVO_{it}= \beta_1 + \beta_2 \ln TPE_{it} + \beta_3 \ln WC_{it} + \beta_4 \ln FIC_{it} + \beta_5 \ln FC_{it} + \beta_6 \ln AP_{it} + \beta_7 \ln SS_{it} + \mu_{it}$

This specified model has been considered for estimation the traditional panel data models as described below:

Pooled Ordinary Least Squares Model, Fixed Effect Model and Random Effect Model.

3.3 **Description of variables used in the study-**

In this study, the dependent variable is the Gross Value of Output (GVO), which includes the ex-factory value of products, by-products, semi-finished goods, work-in-process, receipts for industrial and non-industrial services, and the sale value of electricity generated. The independent variables include:

1. **Total Persons Engaged (TPE)**: Refers to all individuals engaged in work related to the manufacturing process, including administrative, technical, and clerical staff.
2. **Working Capital (WC)**: Represents the physical inventory held by the factory, including lubricants, fuel, and other items on the closing day of the financial year.
3. **Fixed Capital (FIC)**: Depreciated value of fixed assets like land, plant, machinery, buildings, and transport equipment owned by the factory.
4. **Fuel Consumed (FC)**: The total purchase value of fuel products such as lubricants, electricity, and water consumed during the accounting year.
5. **Agriculture Production (AP)**: The total output from primary sector activities such as farming, mining, and forestry, including crops, livestock, and other agricultural products.
6. **Output of Service Sector (SS)**: Represents the tertiary sector, which focuses on services such as hospitality, tourism, healthcare, transport, and finance.

Pooled Ordinary Least Square Method (POLS)

It assumes that the data set is homogenous. The intercept is assumed to be same for all the states.

Static pool OLS model can be shown as follows-

$$lnGVO_{it} = \beta_1 + \beta_2\, lnTPE_{it} + \beta_3\, lnWC_{it} + \beta_4\, lnFIC_{it} + \beta_5\, lnFC_{it} + \beta_6\, lnAP_{it} + \beta_7\, lnSS_{it} + \mu_{it}$$

i= 1, 2, 3…...25, stands for 25 states
t=1,2,3…., stands for time period 2000 to 2019
the constant intercept assumption assumes that all 25 states are same and there is no substantial state specific and temporal effect. However, Pooled OLS should be used when fixed effect is not appropriate.

Fixed Effect Model

Fixed effect least square dummy variable model because it allows for heterogeneity among the subject as it allows different intercept for each entity. In the below model α_i is the intercept term which represent cross section state effect.

$$lnGVO_{it} = \alpha_i + \beta_1\, lnTPE_{it} + \beta_2\, lnWC_{it} + \beta_3\, lnFIC_{it} + \beta_4\, lnFC_{it} + \beta_5\, lnAP_{it} + \beta_6\, lnSS_{it} + \varepsilon_{it}$$

There is no constant term in the fixed effect model, instead of constant term now we have an individual-specific component α_i that determines a unique intercept for each state.

Random Effect Model

It is also known as error components model, in this method the individual effects are randomly distributed across cross-sectional units, and in order to capture individual effect, the regression model is specified with an intercept term representing am over all constant term.

$$lnGVO_{it} = \mu_i + \beta_2\, lnTPE_{it} + \beta_3\, lnWC_{it} + \beta_4\, lnFIC_{it} + \beta_5\, lnFC_{it} + \beta_6\, lnAP_{it} + \beta_7\, lnSS_{it} + u_{it}$$

In random effect model the individual specific model α_i is not used parameter and even its not being estimated but it is considered as random variable as μ.
To test the appropriateness of the estimated models, different test has been applied.

Section 4

4.1 Estimation and Analysis of Results

Panel Ordinary Least Square Model (POLS)

Table1

Dependent variable: lnGVO

Method: Panel least square

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.127793	0.156606	0.816019	0.4149
LnTPE	0.239675	0.022592	10.60866	0.0000
LnWC	0.213071	0.017447	12.21252	0.0000
LnFIC	0.386571	0.027338	14.14021	0.0000
LnFC	0.149964	0.027310	5.491212	0.0000
LnAP	-0.218761	0.025240	-8.667073	0.0000
LnSS	0.343752	0.028333	12.13270	0.0000
R-squared	0.988275		F-statistic	6714.925
Adj. R-squared	0.988128		Prob. (F-stat)	0.000000

Source: Authors estimation

Table 1 represents the result of panel ordinary least square method; table revealed the linkage between all the explanatory variables and manufacturing output is significant. Independent variables have positive and significant impact on

manufacturing output. On the other hand, variable like agriculture production have negative and significant influence on

manufacturing output.

Only a variable fuel consumed have negative and insignificant impact on net value added. Value of R-squared depicts that 98% of the variation in dependent variable can be explained by selected independent variables in dataset. The prob F stat value which is 0.0000 suggest that model is good fit.

Fixed Effect Model

Table 2

Dependent variable: lnGVO

Method: Fixed effect model

Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
C	2.337318	1.096992	2.130660	0.0337
LnTPE	0.383821	0.038926	9.860173	0.0000
LnWC	0.067745	0.012752	5.312297	0.0000
LnFIC	0.252070	0.027532	9.155624	0.0000
LnFC	0.155649	0.033024	4.713233	0.0000
LnAP	-0.069385	0.047757	-1.452872	0.1470
LnSS	0.188743	0.058313	3.236734	0.0013
R-squared	0.996766		F-statistic	2736.131
Adj. R-squared	0.996402		Prob (F-stat)	0.000000

Source: Authors estimation

The table shows results of fixed panel data which resembles with that of POLS, because all the explanatory variables have linked with dependent variables. All the variables like total persons engaged, working capital, fixed capital, fuel consumed and output of service sector have positive and significant impact on manufacturing sector. 1% increase in total person engaged, working capital, fixed capital, material consumed, fuel consumed and service sector will increase the manufacturing output by 38%, 6.0%, 25.2%, 15.5% and 18.8% respectively.

On the other hand, independent variable like agricultural production have negative and insignificant impact on manufacturing output. An increase of 1% in agriculture output will decrease the manufacturing output by 14.7% but it will not affect significantly.

Value of R-squared depicts that 99% of the variation in dependent variable can be explained by selected independent variables in dataset. The prob F stat value which is 0.0000 suggest that model is good fit.

Redundant Fixed Effect Test

Table 3

Effect Test	**Stat**	**Prob.**
Cross-section F	43.4415	0.0000
Cross-section Chi-square	593.07051	0.0000

Source: Authors estimation

The results of redundant fixed effect test which measures the best appropriate test out of POLS and FEM. The hypotheses to

measure the appropriate test are as followed –

H0: Pooled ordinary least square method is appropriate

H1: Fixed effect model is appropriate

The results and interpretation are based on most appropriate model which is determined on the basis of F and Chi-square test. As per the table, the prob value (0.0000) which is less then 0.05, therefore we reject the null hypotheses and conclude that fixed effect model is appropriate than POLS model.

Random Effect Model

Table 4

Dependent variable: lnGVO

Method: Random effect model

Variable	**Coefficient**	**Std. Error**	**t-stat.**	**Prob.**
C	-0.423	0.277	-1.527	0.127
LnTPE	0.22006	0.030	7.306	0.000
LnWC	0.10974	0.0131	8.3535	0.000
LnFIC	0.29563	0.0263	11.250	0.000
LnFC	0.31124	0.0298	10.435	0.000
LnAP	-0.22952	0.0320	-7.164	0.000
LnSS	0.44692	0.034612	12.91210	0.000
R-squa	0.972303		F-stat	2796.693
Adj. R-squa	0.971955		Prob (F-stat)	0.000

Source: Authors estimation

Table 4 represents the outcomes of random effect method which indicates that gross value of output of manufacturing sector is positively and significantly influenced by total persons engaged, working capital, fixed capital, material consumed, fuel consumed and output of service sector as similar to fixed effect model.

A 1 % increase in total persons engaged, working capital, fixed capital, fuel consumed and service sector will increase the manufacturing output by 22.0%, 10.9%, 29.5%, 31.1% and 44.69% respectively. Furthermore, just one variable like agricultural production have negative and significant impact on gross value of output of manufacturing sector.

Value of R-squared depicts that 97% of the variation in dependent variable can be explained by selected independent variables in dataset. The prob F stat value which is 0.0000 suggest that model is good fit.

Hausman Test

Table 5

Hausman Test

Test Summary	Chi-sq Statistic	Prob.
Hausman test	19.782693	0.0030

Source: Authors estimation

Hausman test was performed to choose between random and fixed effect method which is appropriate method. The null hypotheses is framed as random effect is more appropriate and consistent then fixed effect method. If p value is less than 0.05, then we reject the null hypotheses and say fixed effect method is appropriate at 5% level of significance.

As per the table 5, the p value (0.0030) is less than 0.05, therefore we reject the null hypotheses and say fixed effect model is more appropriate and consistent than random effect model at 5% level of significance.

Robustness of the Model

1. **FMOLS (Fully-Modified Ordinary Least Square Model)**

Table 6

Dependent Variable: lnGVO

Long-run covariance estimation

Method: FOLS (Fully Ordinary Least Square Method)

Variable	Coefficient	Std. Error	t-statistic	Prob.
LnTPE	0.24391	0.0534	4.5692	0.000
LnWC	0.11564	0.0179	6.4735	0.000
LnFIC	0.27125	0.0375	7.2393	0.000
LnFC	0.32784	0.0445	7.3736	0.000
LnAP	-0.19919	0.0499	-3.991	0.000
LnSS	0.43188	0.0560	7.7083	0.000
R-squar	0.996039			
Adj. R-squared	0.995757			

Source: Authors estimation

The above table shows the result of FOLS (Fully modified least square method) which depicts the long-term association between explanatory variables and gross value of output of manufacturing sector. It was done by applying long-run covariance estimates: Bartlett Kernel, Newey-West fixed bandwidth).

The result depicts short run panel data regression, as all the independent variables except agriculture production have influenced manufacturing output in positive and significantly. This denotes that there is long run cointegration between the dependent variables and manufacturing output.

The only variable agricultural production has negative and significant impact dependent variable. Value of R-squared depicts that 97% of the variation in dependent variable can be explained by selected independent variables in dataset.

2. DOLS (Dynamic Ordinary Least Square Model)

Table 7

Dependent variable: lnGVO

Long Run Covariance Estimation

Method: DOLS (Dynamic Ordinary Least Square Method)

Variable	Coefficient	Std. Error	t-statistic	Prob.
LnTPE	0.23874	0.0589	4.0465	0.000
LnWC	0.14186	0.0225	6.3047	0.000
LnFIC	0.32801	0.0479	6.8435	0.000
LnFC	0.30166	0.0605	4.9883	0.000
LnAP	-0.18686	0.0576	-3.246	0.001
LnSS	0.35247	0.064	5.5072	0.000
R-squa.	0.997775			
Adj. R-squared	0.996328			

Source: Authors Estimation

The above table shows the result of DOLS (Dynamic Ordinary Least Square method) which depicts the long-term relationship between dependent and independent variable.

the table shows long run covariance estimation done through Bartlett kernel, Newey -West bandwidth test used for covariance estimation.

The result of DOLS (Dynamic Ordinary Least Square Method) is similar to FMOLS method in which independent variables like total persons engaged, working capital, fixed capital, fuel consumed and output of service sector have a positive and significant impact on output of manufacturing sector.

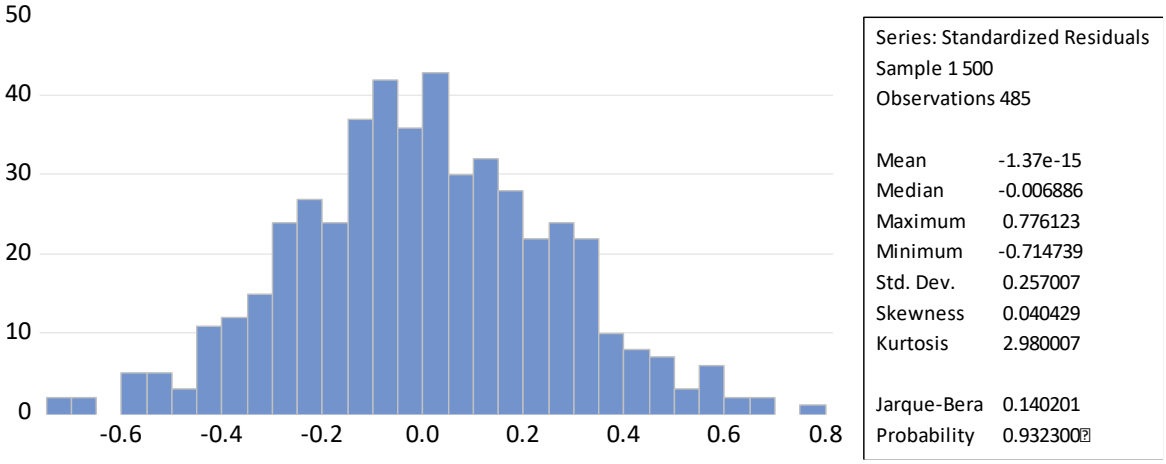
On the other hand, agriculture production has a negative and significant impact on manufacturing sector.

Value of R-squared depicts that 99% of the variation in dependent variable can be explained by selected independent variables in dataset.

Diagnostic Test

1. Normality test

Fig. 1



Source: Authors estimation

We have estimated Normality of the residuals through Jarque Bera test, the hypotheses for normality are as under follows-

H0: Residuals are normally distributed

H1: Residuals are not normally distributed

In the above fig. 1 the p value (0.932300) which is greater than 0.05, therefore we failed to reject the null hypotheses which means we accept the null hypotheses and conclude that the residuals are normally distributed.

2. Cross-sectional dependence test

Several tests have been proposed to check the cross-sectional dependence test however it is the LM test which is commonly used among these tests, the following hypotheses is followed as under-

H0: There is no cross-sectional dependence

H1: There is cross-sectional dependence

The result of test indicates that we reject the null hypotheses as p value is less than 0.05, and it has been determined that is cross-sectional dependency in the series.

Table 6
Residual cross-section dependence test

Test	Statistic	Prob.
Breusch-Pagan LM	759.5066	0.0000
Pesaran scaled LM	18.75928	0.0000
Bias-corrected scaled LM	18.10139	0.0000
Pesaran CD	-2.48393	0.0130

Source: Authors estimation

This result can be explained as a shock that occurs in any state participating in the test will affect other state as well.

Section 5

5.1 Discussion and conclusion

This study analyzes the short-term and long-term relationships between the dependent variable (gross value of manufacturing output) and several independent variables across 25 states of India from 2000 to 2019. Data was sourced from the EPWRF website. The states included are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Punjab,

Rajasthan, Tripura, Tamil Nadu, Uttar Pradesh, Uttarakhand, and West Bengal.

The study uses panel data regression analysis with three methods: Panel Ordinary Least Squares (POLS), Fixed Effect, and Random Effect models. The independent variables include total persons engaged, working capital, fixed capital, fuel consumed, agricultural production, and output of the service sector. Fixed effect redundant and Hausman tests were applied to determine the best model.

The results indicate that all independent variables positively and significantly affect the gross value of manufacturing output. However, agricultural production negatively impacts manufacturing output in the Random Effect and POLS models, while its effect is negative but insignificant in the Fixed Effect model.

After applying the Hausman test, the Fixed Effect method was identified as the most appropriate and consistent model. Diagnostic tests, including the Jarque-Bera normality test, confirmed that residuals were normally distributed, and LM tests revealed cross-sectional dependency, meaning changes in one state affect others.

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Assessing the Financial Performance of Public Sector Banks in India: An ANOVA-Based Study (2010–2020)

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Abstract:

The current article examines the financial performance of all public sector banks in India from 2010 to 2020. This research selected the following variables: the ratio of interest income to total assets, the ratio of net interest income to total assets (net interest margin), the ratio of non-interest income to total assets, the ratio of operational profits to total assets, and the ratio of non-performing assets to total assets. Additionally, return on Equity (ROE), Return on Investments, Capital Adequacy Ratio - Tier I and Tier II, and the ratio of net non-performing assets to net loans are used to assess bank financial performance. Secondary data is taken and analyzed using the ANOVA technique. The study also highlights year-wise financial performance differences among public banks during 2010 to 2020.

Keywords: *Ratio of interest income to total assets, Ratio of net interest income to total assets (Net Interest Margin), Ratio of non-interest income to total assets, Ratio of operating profits to total assets, Ratio of non-interest income to total assets, return on equity, Return on investments, Capital adequacy ratio*

==========

I. Introduction:

Sound financial decisions and efficient resource allocation are key drivers of a country's economic development, with the financial sector playing a crucial role. According to Neeraj Hatekar and Sanjay Singh (2014), the relationship between economic growth and the financial system depends on its size and structure. In India, banks mobilize household savings and extend loans, significantly impacting the economy. Post-liberalization in 1991, competition intensified with the entry of private and foreign banks. T. Narayanaswamy and A.P. Muthulakshmi (2014) analyzed the efficiency of private banks from 2008–2013 using data envelopment analysis. Biswa N. Bhattacharyay (1989) highlighted challenges like service marketing and complexity post-1990s. A financial comparison from 2007–2012 showed SBI leading in earnings per share (EPS), while HDFC excelled in return on equity, price-earnings ratio, and profit margin. (P. Hanumantha Rao & Subhendu Dutta, 2014).

II. Research Objectives:

1) To measure the financial performance of public sector banks in India
2) To make a comparative analysis among public sector banks in India during 2010 to 2020 selecting some financial variables.

III. Research Hypotheses:

1. H01: There is no significant relationship among public sector banks in terms of their financial performance.
2. H02: There is no significant year-wise relationship among public sector banks in their financial variables.

IV. Research Methodology:

This study used a quantitative approach to assess the financial performance of 12 public sector banks in India from 2010 to 2020. Relying on secondary data from annual reports and official sources, the analysis focused on key financial ratios such as interest income to total assets, NIM, non-interest income, ROA, ROE, CAR, and NPAs. ANOVA was applied to identify significant year-wise differences and trends across banks, highlighting profitability, efficiency, and risk management. The findings aimed to offer a clear picture of the financial health of public sector banks over the decade.

The study included 12 public sector banks (PSBs) that existed consistently throughout the 2010–2020 period. In cases where banks underwent mergers during or after this period (e.g., the merger of Bank of Baroda with Vijaya Bank and Dena Bank in 2019), only the data pertaining to the parent bank (e.g., Bank of Baroda) was considered for consistency. Merged entities were not treated as separate units post-merger; the analysis is based on consolidated data of the primary institution wherever applicable, to maintain continuity and comparability across the full study period.

V. Financial Ratio Data Analysis and Results:

1. Ratio of Interest Income to Total Assets: This ratio reflects banks' dependence on interest from loans for financing. A high ratio is generally favorable (though an excessively high ratio may not always be ideal), while a low ratio may suggest reliance on non-interest sources of financing.

2. Ratio of Net Interest Income to Total Assets (Net Interest Margin): NIM measures the net return on a bank's earning assets, including investment securities, loans, and leases. It is calculated as the ratio of interest income less interest expenditure to earning assets.

NIM = Net interest income / Earning assets

Net interest income = Interest income - Interest expense

3. Ratio of Non-Interest Income to Total Assets: This ratio is used by banks and financial institutions to determine how much of their revenue comes from non-interest sources. Non-interest income includes revenue generated from fees, service charges, penalties, and other non-core activities, rather than interest on loans and deposits.

4. Ratio of Operating Profits to Total Assets: The operational profit ratio represents the amount of money a firm earns from its activities. It indicates the financial sustainability of a company's core operations prior to any financial or tax implications.

5. Return on Assets (ROA): The term "return on assets" (ROA) refers to a financial ratio that measures a company's profitability in comparison to its total assets. Corporate management, analysts, and investors may use ROA to evaluate

how effectively a firm uses its assets to generate profits.

$$Return\ on\ Assets = \frac{Net\ Income}{Total\ Assets}$$

6. Return on Equity (ROE): ROE measures a company's financial performance. It is computed by dividing net income by shareholder equity. Because shareholders' equity equals a company's assets less its debt, ROE is a technique for displaying a company's return on net assets. ROE is seen as a measure of a company's profitability and efficiency in generating earnings. The greater the ROE, the better a company's management is at generating revenue and growth from its equity financing.

$$\text{ROE} = \frac{Shareholder\ Equity}{Net\ Income}$$

7. Return on Investments (ROI):

ROI is a performance metric used to assess the efficiency or profitability of an investment, or to compare the efficiency of various investments. ROI attempts to directly evaluate the amount of return on a certain investment compared to its cost. The original investment amount, ongoing maintenance expenses, and the cash flow generated by the investment are all important considerations in determining ROI.

$$\text{ROI} = \frac{\text{Current Value of Investment} - \text{Cost of Investment}}{\text{Cost of Investment}}$$

8. Capital Adequacy Ratio (CAR): The CAR, also known as the capital-to-risk weighted assets ratio (CRAR), measures how effectively a bank can meet its commitments. This ratio compares a bank's capital to its risk-weighted assets and is used by regulators to assess the bank's likelihood of collapse. CAR protects depositors and promotes the stability and efficiency of financial institutions globally.

9. Capital Adequacy Ratio - Tier I: Tier 1 capital is the core capital in a bank's reserves used to finance business operations for its customers. It includes common stock, reported reserves, and some other assets. Along with Tier 2 capital, the level of a bank's Tier 1 capital reserves is used to determine the institution's financial strength.

10. Capital Adequacy Ratio - Tier II: Tier 2 capital is one component of a bank's required reserves. It includes revaluation reserves, hybrid instruments, and subordinated term loans. Tier 2 capital is considered less safe than Tier 1 capital because it is more difficult to liquidate.

11. Ratio of Net NPA to Net Advances: NPAs can be calculated as a proportion of total advances. This ratio provides an estimate of how much of the overall advances are unrecoverable. The GNPA (Gross Non-Performing Assets) ratio is calculated as the ratio of total GNPA to total advances. The NNPA ratio is calculated by dividing net NPA by total advances.

$$NPA\ Ratio = \frac{Non\text{-}Performimg\ Assets}{Total\ Loans} \times 100$$

Public Sector Banks

Table 1. Ratio of Interest Income to Total Assets.

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State bank of India	6.74	6.81	7.16	6.93	7.44	7.94	8.12	8.25	8.32	7.15	7.04
Bank of India	6.61	6.60	6.16	6.36	6.80	7.29	7.39	7.62	7.74	6.95	7.14
Bank of Maharashtra	6.90	6.76	7.03	7.53	8.50	8.97	9.44	9.24	8.61	7.54	7.28
Canara Bank	6.90	7.14	6.87	7.28	8.00	8.41	8.75	8.67	8.69	7.64	7.74
Central bank of India	6.86	6.89	7.29	7.72	8.39	8.78	8.76	8.78	8.71	7.76	7.30
Indian Bank	7.26	7.20	7.27	7.60	8.19	8.34	8.71	9.14	9.30	8.39	8.32
Indian Overseas bank	6.82	7.08	7.24	7.56	8.40	8.54	8.73	8.91	8.98	7.81	8.13
Punjab and Sind Bank	7.57	7.68	7.56	8.20	8.73	8.93	9.11	9.57	9.15	7.88	8.03
Punjab National bank	6.70	6.66	6.46	6.81	7.46	8.03	8.40	8.94	8.72	8.00	7.88
Uco Bank	6.49	6.42	6.27	6.86	7.56	7.98	8.33	8.84	8.51	7.56	7.65
Union Bank of India	7.13	6.94	6.97	7.62	8.19	8.73	8.81	8.75	8.44	7.63	7.47
Bank of Baroda	6.78	6.63	6.17	6.18	6.36	6.25	6.45	7.08	7.37	6.87	6.61

Source of Data: www.iba.org.in

The ratio of interest income to total assets from 2010 to 2020 highlights differences in asset utilization among public sector banks. SBI and Canara Bank showed stable and higher ratios, indicating strong core banking performance. In contrast, Bank of Baroda showed a declining trend post-2013, suggesting possible inefficiencies or revenue shifts. Banks like Bank of Maharashtra had fluctuating but generally higher ratios, reflecting a greater reliance on interest income. Overall, the data reveals varied efficiency levels and risk profiles across PSBs.

Table 2. ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	30.84752	11	2.80432	28.09859	4.73E-27	1.876732
Columns	55.37862	10	5.537862	55.488	2.38E-38	1.917827
Error	10.97832	110	0.099803			
Total	97.20446	131				

The ANOVA results reveal statistically significant differences across both row and column factors. The F-values for rows (28.10) and columns (55.49) far exceed their respective critical values, with extremely low P-values, indicating strong significance. Hence, the null hypotheses are rejected, confirming notable variations across both dimensions in the dataset.

Table 3. Ratio of Net Interest Income to Total Assets (Net Interest Margin)

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	2.57	2.48	2.43	2.44	2.60	2.86	2.93	3.06	3.38	2.86	2.35
Bank Of India	2.38	2.21	1.70	1.91	1.91	1.91	2.11	2.16	2.26	2.49	2.30
Bank Of Maharashtra	2.57	2.33	2.15	1.98	2.53	2.74	2.77	2.92	3.00	2.67	1.99
Canara Bank	1.85	2.21	2.03	1.74	1.77	1.86	1.98	2.00	2.17	2.56	2.35
Central Bank Of India	2.22	2.06	1.98	2.06	2.29	2.41	2.33	2.30	2.35	2.71	1.54
Indian Bank	2.58	2.63	2.66	2.44	2.24	2.35	2.49	2.98	3.36	3.62	3.41
Indian Overseas Bank	2.08	2.12	2.21	1.99	1.92	1.92	2.15	2.26	2.52	2.72	2.51
Punjab And Sind Bank	1.96	2.05	2.12	2.17	2.17	1.75	1.85	2.14	2.12	2.49	2.42
Punjab National Bank	2.17	2.23	2.01	2.16	2.41	2.87	3.14	3.17	3.21	3.50	3.12
Uco Bank	2.18	1.93	1.40	1.60	1.98	2.29	2.77	2.42	2.27	2.56	1.87
Union Bank Of India	2.19	2.08	1.98	2.08	2.11	2.30	2.37	2.63	2.73	2.88	2.35
Bank Of Baroda	2.45	2.46	2.19	1.98	1.84	1.92	1.98	2.28	2.56	2.76	2.35

Source of Data: www.iba.org.in

The Net Interest Margin (NIM) data from 2010 to 2020 shows significant variation among public sector banks. SBI experienced a steady decline in NIM, dropping from 3.38% in 2012 to 2.57% in 2020. Indian Bank maintained a relatively strong NIM, peaking in 2011 and stabilizing around 2.58% by 2020. Punjab National Bank and Bank of Maharashtra had mostly stable NIMs with slight fluctuations, while Canara Bank showed a consistent decline from 2.56% to 1.85%, indicating weakening interest income efficiency over time.

Table 4 ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	8.906455	11	0.809678	12.7256	3.12E-15	1.876732
Columns	7.084982	10	0.708498	11.13537	6.2E-13	1.917827
Error	6.99885	110	0.063626			
Total	22.99029	131				

In this ANOVA analysis, both the rows and columns factors exhibit significant differences. The F-value for rows is 12.7256 with a P-value of 3.12E-15, which is substantially lower than the critical value (F crit = 1.876732). Similarly, the F-value for columns is 11.13537 with a P-value of 6.2E-13, also well below the critical value (F crit = 1.917827). These results indicate that both row and column categories have statistically significant differences. Consequently, the null hypotheses for both rows and columns are rejected, demonstrating that there are significant variations among the row and column groups in the data.

Table 5. Ratio of Non-Interest Income to Total Assets.

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	1.19	1.03	1.45	1.40	1.26	1.18	1.10	1.11	1.12	1.39	1.48
Bank Of India	1.05	0.75	0.93	1.10	0.59	0.70	0.84	0.90	0.90	0.84	1.05
Bank Of Maharashtra	0.99	0.96	0.95	0.94	0.66	0.71	0.71	0.88	0.76	0.72	0.91
Canara Bank	1.10	1.00	1.16	1.33	0.89	0.88	0.87	0.80	0.82	0.94	1.18
Central Bank Of India	1.06	0.73	0.80	0.90	0.63	0.63	0.69	0.67	0.63	0.64	1.05
Indian Bank	1.12	0.71	1.02	1.05	0.90	0.72	0.78	0.84	0.94	1.06	1.42
Indian Overseas Bank	1.32	1.69	1.51	1.29	0.90	0.76	0.84	0.85	0.84	0.79	0.91
Punjab And Sind Bank	0.86	0.74	0.55	0.58	0.48	0.45	0.49	0.51	0.59	0.70	0.84
Punjab National Bank	1.16	0.96	1.20	1.29	0.94	1.02	0.89	0.90	1.00	1.07	1.33
Uco Bank	1.23	0.68	0.50	0.89	0.65	0.83	0.60	0.50	0.56	0.62	0.78
Union Bank Of India	1.01	0.91	1.06	1.16	0.92	0.96	0.85	0.89	0.98	0.95	1.11
Bank Of Baroda	0.92	0.84	0.94	0.99	0.72	0.64	0.74	0.73	0.85	0.88	1.11

Source of Data: www.iba.org.in

The ratio of non-interest income to total assets shows varied performance among public sector banks. SBI consistently leads with higher ratios, peaking at 1.48% in 2010 and remaining strong in subsequent years. Indian Overseas Bank and Punjab National Bank also show relatively better performance in certain years. In contrast, Punjab and Sind Bank and UCO Bank report lower ratios, indicating limited success in non-interest income generation. Banks like Bank of Maharashtra and Central Bank of India show a declining trend, highlighting challenges in income diversification.

Table 6. ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	3.65332	11	0.33212	18.95979	9.99E-21	1.876732
Columns	1.965357	10	0.196536	11.21967	5.11E-13	1.917827
Error	1.926878	110	0.017517			
Total	7.545555	131				

In this ANOVA analysis, both the row and column factors show significant effects. The F-value for rows is 18.95979 with a P-value of 9.99E-21, which is much smaller than the critical value (F crit = 1.876732), indicating a significant effect of the row factor. Similarly, the F-value for columns is 11.21967 with a P-value of 5.11E-13, also well below the critical value (F crit = 1.917827), suggesting a significant effect of the column factor. Therefore, we reject the null hypotheses for both rows and columns, indicating that there are significant differences among the row and column groups in the data.

Table 7. Ratio of Operating Profits to Total Assets.

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank of India	1.79	1.55	1.93	2.01	1.96	2.10	1.91	2.14	2.47	2.23	1.82
Bank Of India	1.80	1.31	1.16	1.57	0.98	1.26	1.64	1.78	1.82	1.72	1.88
Bank of Maharashtra	1.71	1.37	1.39	1.14	1.53	1.67	1.58	2.07	1.81	1.16	1.25
Canara Bank	1.32	1.61	1.59	1.57	1.30	1.34	1.50	1.50	1.67	2.03	2.09
Central Bank of India	1.26	0.95	0.83	0.97	0.76	1.18	1.16	1.27	1.28	1.32	1.25
Indian Bank	2.20	1.83	2.12	1.90	1.53	1.59	1.66	2.01	2.63	2.95	2.96
Indian Overseas Bank	1.38	2.02	1.47	1.40	1.03	1.19	1.54	1.64	1.77	1.85	1.46
Punjab And Sind Bank	1.05	1.25	1.09	1.25	1.27	0.81	0.91	1.22	1.07	1.62	1.79
Punjab National Bank	1.84	1.69	1.39	2.10	1.78	2.07	2.21	2.33	2.54	2.68	2.70
Uco Bank	2.07	1.24	0.60	1.23	1.47	2.02	2.26	1.77	1.64	1.79	1.37
Union Bank of India	1.76	1.53	1.63	1.73	1.44	1.58	1.57	1.94	2.11	2.00	2.05
Bank Of Baroda	1.69	1.80	1.70	1.61	1.27	1.44	1.54	1.81	2.13	2.19	1.95

Source of Data: www.iba.org.in

The operating profit to total assets ratio from 2010 to 2020 highlights performance differences among public sector banks. SBI consistently shows strong operational efficiency, peaking at 2.47% in 2012. Indian Bank also performed well in the early years, while Central Bank of India had lower ratios, notably dipping to 0.76% in 2016. Banks like Bank of Maharashtra and Canara Bank experienced fluctuating trends, and Punjab National Bank and UCO Bank showed variable but generally favorable ratios in the later years.

Table 8. ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	12.30212	11	1.118375	15.42673	9.18E-18	1.876732
Columns	5.169324	10	0.516932	7.130504	1.41E-08	1.917827
Error	7.974551	110	0.072496			
Total	25.446	131				

The ANOVA results show that both the row and column factors have a significant impact. The row factor has an F-value of 15.42673 with a P-value of 9.18E-18, which is much smaller than the critical value (F crit = 1.876732), indicating a highly significant effect. The column factor also shows a significant effect with an F-value of 7.130504 and a P-value of 1.41E-08, which is lower than the critical value (F crit = 1.917827). Both P-values are significantly less than typical significance levels (e.g., 0.05), leading us to reject the null hypotheses for both factors. This suggests that there are significant differences among the row and column groups in the dataset.

Table 9. Return on assets (ROA)

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank of India	0.38	0.02	-0.19	0.41	0.46	0.68	0.65	0.97	0.88	0.71	0.88
Bank Of India	-0.43	-0.84	-0.91	-0.24	0.94	0.27	0.51	0.65	0.72	0.82	0.70
Bank Of Maharashtra	0.23	-3.01	-0.73	-0.86	0.07	0.33	0.30	0.74	0.55	0.47	0.70
Canara Bank	-0.32	0.06	-0.75	0.20	-0.52	0.55	0.54	0.77	0.95	1.42	1.30
Central Bank of India	-0.35	-1.70	-1.61	-0.80	-0.48	0.21	-0.47	0.44	0.26	0.70	0.66
Indian Bank	0.26	0.12	0.53	0.67	0.36	0.54	0.67	1.02	1.31	1.53	1.67
Indian Overseas Bank	-2.95	-1.35	-2.33	-1.21	-0.97	-0.16	0.23	0.24	0.52	0.71	0.53
Punjab And Sind Bank	-0.91	-0.47	-0.69	0.20	0.34	0.13	0.35	0.44	0.65	0.90	1.05
Punjab National Bank	0.04	-1.25	-1.60	0.19	-0.61	0.53	0.64	1.00	1.19	1.34	1.44
Uco Bank	-0.96	-1.84	-1.88	-0.75	-1.25	0.48	0.70	0.33	0.69	0.66	0.87
Union Bank of India	-0.53	-0.59	-1.07	0.13	0.35	0.49	0.52	0.79	0.79	1.05	1.25
Bank Of Baroda	0.06	0.06	-0.34	0.20	-0.78	0.49	0.75	0.90	1.24	1.33	1.21

Source of Data: www.iba.org.in

The Return on Assets (ROA) data from 2010 to 2020 shows significant variation in performance among public sector banks. SBI maintained a generally positive but fluctuating ROA, while Bank of India, Bank of Maharashtra, and Central Bank of India reported negative ROAs in several years, indicating financial strain. In contrast, Canara Bank and Indian Bank demonstrated stronger ROA, reflecting better asset management. Indian Overseas Bank and UCO Bank consistently showed low or negative ROAs, signaling persistent profitability challenges.

Table 10. ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	19.32812	11	1.757101	8.638546	7.47E-11	1.876732
Columns	62.56162	10	6.256162	30.75756	1.88E-27	1.917827
Error	22.37427	110	0.203402			
Total	104.264	131				

The ANOVA results indicate that both the row and column factors have a significant impact. The row factor has an F-value of 8.638546 with a P-value of 7.47E-11, which is well below the critical value (F crit = 1.876732). This suggests that the row factor has a statistically significant effect on the dependent variable. Similarly, the column factor has an F-value of 30.75756 and a P-value of 1.88E-27, also significantly lower than the critical value (F crit = 1.917827), indicating a highly significant effect. Given these results, we reject the null hypotheses for both factors. This implies that there are significant differences among the rows and columns in the dataset.

Table 11. Return on Equity (ROE)

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	6.40	0.39	-3.21	6.31	7.30	10.62	10.03	15.43	15.72	12.62	14.80
Bank Of India	-6.92	-14.37	-18.23	-5.04	-19.50	5.57	10.14	12.25	14.00	15.79	12.56
Bank Of Maharashtra	4.71	-61.01	-13.23	-16.98	1.19	5.84	5.61	13.66	9.91	9.68	16.35
Canara Bank	-5.92	0.97	-12.19	3.44	-8.86	8.79	8.95	12.08	15.36	23.20	22.48
Central Bank Of India	-5.56	-30.56	-28.96	-13.96	-8.07	3.65	-8.12	7.31	4.57	13.49	15.01
Indian Bank	3.63	1.70	7.07	8.41	4.54	6.94	8.97	13.89	17.19	19.27	20.18
Indian Overseas Bank	-52.45	-25.23	-46.63	-23.23	-18.51	-2.86	4.06	4.47	9.88	12.73	9.63
Punjab And Sind Bank	-17.54	-9.15	-12.07	3.32	5.81	2.29	6.25	7.66	11.21	16.39	21.40
Punjab National Bank	0.63	-23.24	-29.54	3.30	-10.27	8.17	9.75	15.70	19.80	22.60	24.12
Uco Bank	-13.32	-26.72	-32.02	-14.64	-22.33	9.57	14.45	6.76	13.83	14.36	22.08
Union Bank Of India	-9.62	-11.43	-21.39	2.37	6.34	9.32	9.48	13.52	13.05	17.96	21.65
Bank Of Baroda	0.84	0.97	-5.81	3.44	-13.48	8.96	13.36	15.07	20.64	23.47	21.86

Source of Data: www.iba.org.in

The Return on Equity (ROE) data from 2010 to 2020 highlights significant fluctuations among public sector banks. SBI maintained relatively stable performance with a 6.40% ROE in 2020, while banks like Indian Overseas Bank and UCO Bank showed deeply negative ROEs, indicating financial stress. Canara Bank had periods of strong returns, whereas banks such as Bank of India and Punjab National Bank experienced high volatility and frequent negative ROEs. The overall trend reflects inconsistent profitability and varying financial stability across the sector.

Table 12. ANOVA Result:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	4950.604	11	450.0549	6.283887	5.72E-08	1.876732
Columns	20559.51	10	2055.951	28.70619	2.79E-26	1.917827
Error	7878.251	110	71.62046			
Total	33388.36	131				

The ANOVA results indicate significant differences across both row and column factors. The row factor shows an F-value of 6.28 and the column factor an even higher F-value of 28.71, both with extremely low P-values, well below their respective critical values. These findings confirm that both factors significantly impact the dependent variable, leading to the rejection of the null hypotheses for both rows and columns.

Table 13. Return on Investments.

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	6.77	7.34	7.70	7.19	8.00	8.03	8.52	8.20	7.88	6.71	6.20
Bank Of India	6.99	7.00	6.91	7.35	7.50	8.07	8.05	8.01	8.27	6.76	7.46
Bank Of Maharashtra	7.16	7.14	7.21	7.56	7.93	7.25	7.41	7.77	7.04	6.94	6.54
Canara Bank	6.89	7.36	7.08	7.32	8.02	7.92	8.27	8.17	7.59	7.36	7.18
Central Bank Of India	7.40	7.42	7.33	8.15	7.25	7.63	7.26	7.25	7.64	7.17	7.07
Indian Bank	7.22	7.40	7.36	7.33	8.41	7.81	8.41	8.12	7.67	7.07	7.26
Indian Overseas Bank	7.12	7.26	6.84	6.91	8.18	7.32	7.58	7.48	7.57	6.88	6.92
Punjab And Sind Bank	7.85	7.77	8.04	8.11	7.34	7.68	7.40	7.41	7.59	7.00	7.18
Punjab National Bank	6.93	7.01	7.21	7.30	7.82	7.22	7.50	7.55	7.10	6.52	6.46
Uco Bank	6.86	6.98	7.14	7.26	7.64	7.52	7.33	7.42	7.12	6.25	6.00
Union Bank Of India	7.59	7.21	7.44	8.64	8.68	8.06	8.33	7.92	7.57	7.10	7.15
Bank Of Baroda	6.74	7.40	7.12	8.47	9.00	8.10	7.32	7.32	8.00	7.20	6.43

Source of Data: www.iba.org.in

The Return on Investments (ROI) data from 2010 to 2020 indicates generally strong and stable performance among public sector banks. SBI, Bank of India, and Bank of Maharashtra maintained consistent ROIs in the 6–8% range. Union Bank of India and Bank of Baroda stood out with higher ROIs in later years, peaking at 8.68% and 9.00% respectively. UCO Bank and Canara Bank recorded slightly lower but still competitive ROI levels.

Table 14. ANOVA Result:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	5.656172	11	0.514197	3.986146	6.81E-05	1.876732
Columns	17.1959	10	1.71959	13.33055	4.75E-15	1.917827
Error	14.18958	110	0.128996			
Total	37.04164	131				

The ANOVA results indicate significant differences across both row and column factors. The row factor has an F-value of 3.99 and the column factor 13.33, both with P-values far below their critical values. This confirms that both rows and columns significantly affect the dataset, leading to the rejection of the null hypotheses for both factors.

Table 15. Capital Adequacy Ratio.

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	13.06	12.72	12.60	13.11	13.12	12.00	12.44	12.92	13.86	11.98	13.39
Bank Of India	13.10	14.19	12.94	12.14	12.01	10.73	9.97	11.02	11.95	12.17	12.94
Bank Of Maharashtra	13.52	11.86	11.01	11.18	11.20	11.94	10.79	12.59	12.43	13.35	12.78
Canara Bank	13.65	11.90	13.22	12.86	11.08	10.56	10.63	12.40	13.76	15.38	13.43
Central Bank Of India	11.72	9.61	9.04	10.94	10.40	10.90	9.87	11.49	12.40	11.64	12.23
Indian Bank	14.12	13.21	12.55	13.64	13.20	12.86	12.64	13.08	13.47	13.56	12.71
Indian Overseas Bank	10.72	10.21	9.26	10.49	9.67	10.11	10.78	11.85	13.32	14.55	14.78
Punjab And Sind Bank	12.76	10.93	11.25	11.05	10.91	11.24	11.04	12.91	13.26	12.94	13.10
Punjab National Bank	14.15	9.73	9.20	11.66	11.28	12.21	11.52	12.72	12.63	12.42	14.16
Uco Bank	11.70	10.70	10.94	10.93	9.63	12.17	12.68	14.15	12.35	13.71	13.21
Union Bank Of India	12.81	11.78	11.46	11.79	10.56	10.22	10.80	11.45	11.85	12.95	12.51
Bank Of Baroda	13.30	13.42	12.13	12.24	13.18	12.61	12.28	13.30	14.67	14.52	14.36

Source of Data: www.iba.org.in

The Capital Adequacy Ratio (CAR) data from 2010 to 2020 reflects the capital strength of public sector banks. SBI consistently maintained a CAR above 12%, indicating strong financial stability. Canara Bank and Indian Bank also showed healthy CARs in recent years. In contrast, Indian Overseas Bank and Central Bank of India had lower CARs in earlier years, pointing to weaker capital positions. Banks like Bank of Maharashtra and Punjab National Bank exhibited notable fluctuations, reflecting inconsistent capital management and regulatory adherence.

Table 16. ANOVA Result:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	59.17797	11	5.379816	6.630409	2.07E-08	1.876732
Columns	81.80348	10	8.180348	10.08195	7.46E-12	1.917827
Error	89.25238	110	0.811385			
Total	230.2338	131				

The ANOVA results indicate significant effects from both the row and column factors. The row factor has an F-value of 6.630409 with a P-value of 2.07E-08, which is far below the critical value (F crit = 1.876732), showing a significant difference among rows. Similarly, the column factor presents an F-value of 10.08195 and a P-value of 7.46E-12, also below the critical value (F crit = 1.917827), indicating a significant effect of columns.

Consequently, both null hypotheses for rows and columns are rejected, confirming that there are significant differences attributable to both factors in the dataset.

Table 17. Capital Adequacy Ratio - Tier I

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank Of India	11.00	10.65	10.36	10.35	9.92	9.60	9.72	9.49	9.79	7.77	9.45
Bank Of India	9.90	11.07	9.73	8.90	9.03	8.17	7.24	8.20	8.59	8.33	8.48
Bank Of Maharashtra	10.67	9.91	9.01	9.01	9.02	8.76	7.44	7.57	8.31	8.02	6.41
Canara Bank	10.12	9.04	10.30	9.77	8.80	8.02	7.68	9.77	10.35	10.87	8.54
Central Bank Of India	9.33	7.49	7.01	8.62	8.20	8.05	7.37	8.09	7.79	6.31	6.83
Indian Bank	12.08	11.29	11.33	12.20	12.08	10.61	10.24	10.88	11.13	11.02	11.13
Indian Overseas Bank	8.21	7.85	7.17	8.21	7.75	7.30	7.47	7.80	8.35	8.16	8.67
Punjab And Sind Bank	9.58	9.50	9.85	9.14	9.29	8.48	7.62	8.38	8.55	8.35	7.68
Punjab National Bank	11.91	7.49	7.12	8.91	8.41	9.30	8.87	9.76	9.28	8.44	9.11
Uco Bank	8.98	8.64	8.94	8.27	7.63	9.05	8.71	9.06	8.09	8.52	7.05
Union Bank Of India	10.75	9.48	9.03	9.02	8.14	7.50	7.54	8.23	8.37	8.69	7.91
Bank Of Baroda	10.71	11.55	10.46	9.93	10.79	9.87	9.28	10.13	10.83	9.99	9.20

Source of Data: www.iba.org.in

The CAR-Tier I data from 2010 to 2020 highlights differences in capital strength among public sector banks. SBI showed a steady rise from 7.77% to 11.00%, indicating improved capital adequacy. Bank of Maharashtra also saw a gradual increase, while Bank of India experienced fluctuations. Central Bank of India and Indian Overseas Bank had lower but relatively stable Tier I ratios. In contrast, Canara Bank and Indian Bank maintained strong and consistent ratios, with Indian Bank reaching 12.08% in 2020. Bank of Baroda displayed steady Tier I capital, reflecting sound capital management.

Table 18. ANOVA Result:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	121.5969	11	11.05426	20.83475	3.64E-22	1.876732
Columns	37.46167	10	3.746167	7.060667	1.71E-08	1.917827
Error	58.36253	110	0.530568			
Total	217.4211	131				

The ANOVA results reveal that both the row and column factors have a statistically significant effect. The row factor has an F-value of 20.83475 with a P-value of 3.64E-22, which is significantly less than the critical value (F crit = 1.876732), indicating a strong rejection of the null hypothesis for rows. Similarly, the column factor has an F-value of 7.060667 and a P-value of 1.71E-08, also well below the critical value (F crit = 1.917827), leading to a rejection of the null hypothesis for columns. Thus, both hypotheses regarding rows and columns are rejected, suggesting that there are significant differences associated with both factors in the data.

Table 19. Capital Adequacy Ratio - Tier II

PSB	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
State Bank of India	2.06	2.07	2.24	2.76	3.20	2.40	2.72	3.43	4.07	4.21	3.94
Bank Of India	3.20	3.12	3.21	3.24	2.98	2.56	2.73	2.82	3.36	3.84	4.46
Bank Of Maharashtra	2.85	1.95	2.00	2.17	2.18	3.18	3.35	5.02	4.12	5.33	6.37
Canara Bank	3.53	2.86	2.92	3.09	2.28	2.54	2.95	2.63	3.41	4.51	4.89
Central Bank of India	2.39	2.12	2.03	2.32	2.20	2.85	2.50	3.40	4.61	5.33	5.40
Indian Bank	2.04	1.92	1.22	1.44	1.12	2.25	2.40	2.20	2.34	2.54	1.58
Indian Overseas Bank	2.51	2.36	2.09	2.28	1.92	2.81	3.31	4.05	4.97	6.39	6.11
Punjab And Sind Bank	3.18	1.43	1.40	1.91	1.62	2.76	3.42	4.53	4.71	4.59	5.42
Punjab National Bank	2.24	2.24	2.08	2.75	2.87	2.91	2.65	2.96	3.35	3.98	5.05
Uco Bank	2.72	2.06	2.00	2.66	2.00	3.12	3.97	5.09	4.26	5.19	6.16
Union Bank Of India	2.06	2.30	2.43	2.77	2.42	2.72	3.26	3.22	3.48	4.26	4.60
Bank Of Baroda	2.59	1.87	1.67	2.31	2.39	2.74	3.00	3.17	3.84	4.53	5.16

Source of Data: www.iba.org.in

The Tier II Capital Adequacy Ratio data from 2010 to 2020 shows considerable variation among public sector banks. SBI maintained a relatively stable Tier II ratio, ranging between 2.06% and 4.21%. In contrast, Bank of Maharashtra exhibited significant fluctuations, with ratios from 1.95% to 6.37%, indicating inconsistent capital buffer management. Central Bank of India and Indian Overseas Bank also showed variability, while Bank of Baroda and Punjab National Bank had generally stable ratios with occasional changes, reflecting a more controlled capital approach.

Table 20. ANOVA Result:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	22.44274	11	2.040249	5.714271	3.15E-07	1.876732
Columns	114.451	10	11.4451	32.0551	3.64E-28	1.917827
Error	39.2749	110	0.357045			
Total	176.1686	131				

The ANOVA results indicate that both the row and column factors significantly affect the outcome. The row factor has an F-value of 5.714271 and a P-value of 3.15E-07, which is much smaller than the critical value (F crit = 1.876732). This allows us to reject the null hypothesis for rows, suggesting that there are significant differences related to the row factor. Similarly, the column factor has an F-value of 32.0551 with a P-value of 3.64E-28, which is significantly less than the critical value (F crit = 1.917827). Therefore, the null hypothesis for columns is also rejected, indicating significant differences associated with the column factor. In summary, significant effects are observed for both row and column factors.

Table 21. Ratio of Net NPA to Net Advances

PSB	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
State Bank of India	2.23	3.01	5.73	3.71	3.81	2.12	2.57	2.10	1.82	1.63	1.72
Bank Of India	3.88	5.61	8.28	6.90	7.79	3.36	2.00	2.06	1.47	0.91	1.31
Bank Of Maharashtra	4.77	5.52	11.24	11.76	6.35	4.19	2.03	0.52	0.84	1.32	1.64
Canara Bank	4.22	5.37	7.48	6.33	6.42	2.65	1.98	2.18	1.46	1.10	1.06
Central Bank of India	7.63	7.73	11.10	10.20	7.36	3.61	3.75	2.90	3.09	0.65	0.69
Indian Bank	3.13	3.75	3.81	4.39	4.20	2.50	2.26	2.26	1.33	0.53	0.23
Indian Overseas Bank	5.44	10.81	15.33	13.99	11.89	5.68	3.20	2.50	1.35	1.19	2.52
Punjab And Sind Bank	8.03	7.22	6.93	7.51	4.62	3.55	3.35	2.16	1.19	0.56	0.36
Punjab National Bank	5.78	6.56	11.24	7.81	8.61	4.06	2.85	2.35	1.52	0.85	0.53
Uco Bank	5.45	9.72	13.10	8.94	9.09	4.30	2.38	3.17	1.96	1.84	1.17
Union Bank of India	5.49	6.85	8.42	6.57	5.25	2.71	2.33	1.61	1.70	1.19	0.81
Bank Of Baroda	3.13	3.33	5.49	4.72	5.06	1.89	1.52	1.28	0.54	0.35	0.34

Source of Data: www.iba.org.in

The Net NPA to Net Advances data from 2010 to 2020 highlights significant differences in asset quality among public sector banks. SBI maintained a stable, moderate ratio, indicating effective NPA management. In contrast, Bank of Maharashtra and Indian Overseas Bank showed high ratios in recent years, reflecting asset quality issues. Central Bank of India and Punjab and Sind Bank also recorded elevated ratios, especially in 2020. Meanwhile, Bank of Baroda and Indian Bank maintained lower, more stable ratios, suggesting stronger control over non-performing assets.

Table 22. ANOVA Result:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	196.4216	11	17.85651	8.551896	9.43E-11	1.876732
Columns	985.9286	10	98.59286	47.21841	3.16E-35	1.917827
Error	229.6819	110	2.088017			
Total	1412.032	131				

The ANOVA results show significant differences for both row and column factors. The row factor has an F-value of 8.55 and the column factor 47.22, with both P-values far below their critical values. This leads to the rejection of the null hypotheses, confirming that both factors significantly influence the variation in the dataset.

Findings: The study assessed the financial performance of Indian public sector banks from 2010 to 2020 using key financial ratios. ANOVA results revealed significant differences across banks and years. SBI and Indian Bank showed strong performance across several metrics, while banks like Bank of Maharashtra and Indian Overseas Bank struggled, particularly with high NPAs and low ROA. Overall, the findings highlight ongoing challenges in asset quality and profitability among PSBs.

Conclusion: The financial performance of public sector banks in India between 2010 and 2020 reveals significant disparities in operational efficiency, profitability, and asset management. Banks such as the State Bank of India (SBI) and Indian Bank consistently demonstrated stable financial health, maintaining robust metrics like return on assets (ROA), net interest margin (NIM), and capital adequacy ratios. These banks also managed to control non-performing assets (NPAs) more effectively than their counterparts. Conversely, banks like the Bank of Maharashtra and Indian Overseas Bank struggled with high levels of NPAs and inconsistent returns, adversely impacting their profitability and overall financial stability. The analysis highlights that while some public sector banks adapted well to the changing financial landscape, others lagged behind, grappling with inefficiencies and asset quality issues. This underscores the critical need for reforms focusing on improved risk management, better capital adequacy, and strategies to reduce NPAs. The study provides valuable insights for policymakers, regulators, and bank managers to enhance the financial resilience and operational efficiency of public sector banks, ensuring long-term sustainability and growth.

Research Implications: This research has practical implications for policymakers, financial regulators, and bank management. The findings indicate the importance of improving asset quality, particularly in managing non-performing assets, as a way to enhance the financial stability of public sector banks. For policymakers, the study suggests that reforms aimed at strengthening the capital adequacy of weaker banks and improving their operational efficiency could help mitigate the financial risks associated with high NPAs. Additionally, the study emphasizes the significance of diversifying income sources beyond interest-based revenue, as banks with higher non-interest income exhibited better financial resilience.

Limitations of the Study and Scope for Further Research: This study is limited by its reliance on secondary data and a narrow set of financial ratios, potentially overlooking broader aspects of bank performance. It also does not account for external macroeconomic influences like policy changes or economic cycles. Future research could address these gaps by including more financial indicators, assessing external factors, or comparing public and private sector bank performance over the same period.

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A Regional Overview of Maharashtra's Progress in Multidimensional Poverty Alleviation

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Abstract:

Although Maharashtra is considered an industrially advanced state, regional disparities and the challenge of multidimensional poverty remain significant. This research paper presents a regional analysis of the changes in the Multidimensional Poverty Index, Headcount Ratio, and Intensity of Poverty in Maharashtra during the period from 2015–16 (NFHS-4) to 2019–21 (NFHS-5). Utilizing data from NITI Aayog's National MPI Progress Review (2023) and IIPS population projections (2021), it compares Maharashtra's six administrative divisions: Konkan, Pune, Nashik, Aurangabad, Amravati, and Nagpur. The findings reveal that although Maharashtra's overall MPI decreased by 49%, this decline is not uniform across all regions. Urban and industrial divisions like Pune and Nagpur achieved notable success in poverty reduction, while divisions such as Nashik, Konkan, and Amravati continue to show concerning levels of deprivation. The study underscores that poverty is not merely a matter of low income but is linked to multidimensional deprivations. Therefore, poverty eradication requires more than just statistical reduction—it demands region-specific, impact-driven, and socially inclusive policies. To achieve social justice, equal opportunity, and sustainable development in the state, there is a need to shift the policy focus from *reducing the number* of the poor to *reducing the intensity* of their poverty.

Keywords: *Multidimensional Poverty Index (MPI); Headcount Ratio (HCR); Intensity of Poverty (A); Regional Disparities; Deprivation; Inclusive Development; Poverty Reduction; Sustainable Development Goals (SDGs)*

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1. Introduction:

Maharashtra is one of the progressive and economically significant states in India. It has been at the forefront of industrial development and has made notable efforts towards various socio-economic reforms. However, the nature and intensity of poverty vary considerably across different regional divisions of the state. Viewing poverty solely from an economic perspective is not sufficient, as it also encompasses dimensions such as education, health, livelihood opportunities, and social security.

The concept of 'Multidimensional Poverty' focuses on these diverse aspects of people's lives. It includes indicators such as the health of individuals within a household,

their level of education, and their standard of living.

The Government of India has set poverty eradication as a major target for achieving the Sustainable Development Goals (SDGs) by the year 2030. Maharashtra, too, has implemented various poverty alleviation policies at the state level through multiple schemes. However, considering the existing regional disparities within the state, it becomes insightful to examine whether this inequality is reflected in the rate and extent of poverty reduction across different regions.

2. The Concept of Multidimensional Poverty

In recent years, there has been significant debate surrounding the determination of poverty lines based on calorie intake or consumption expenditure standards. Notably, concerns have arisen about how governments may alter poverty thresholds to statistically reduce the number of poor people. Consequently, many economists now advocate for abandoning the conventional poverty line approach altogether. These poverty lines fail to capture the diverse dimensions of poverty. For instance, while they may reflect income shortfalls, they present only a partial picture of human deprivation. The absence of education, healthcare, and other essentials may not necessarily be directly related to income poverty. Therefore, to truly understand poverty, one must consider these various forms of deprivation.

In reality, poverty is a condition marked by a lack of opportunities to lead a decent life. This aligns with the concept of ***human poverty***, which goes beyond income metrics to emphasize the necessity of a satisfactory standard of living, freedom of choice, and a life of dignity and self-respect.

In response to these limitations, the **United Nations Development Programme (UNDP)**, in its *1997 Human Development Report*, introduced the ***Human Poverty Index (HPI)*** as an alternative to the World Bank's income-based poverty measure. The HPI focused on deprivation in three essential dimensions of human life: a short life span, lack of knowledge, and a decent standard of living. According to the *Human Development Report 2009*, India's HPI value was 28%, placing it at 88th out of 135 countries, indicating the widespread nature of human poverty.

In 2010, the HPI was replaced by the ***Multidimensional Poverty Index (MPI)***, developed by ***Sabina Alkire*** and ***James Foster***, and adopted by UNDP. This index measures overlapping deprivations across three core dimensions - **health, education, and standard of living** (UNDP, 2010).

Concept of Multidimensional Poverty Multidimensional poverty encompasses deprivations in health, education, and living standards (Alkire & Foster, 2011). To calculate MPI, the proportion of people suffering from multidimensional poverty is multiplied by the average intensity of deprivation experienced by poor households — reflecting the ***intensity of poverty***. MPI adopts the same three components found in the Human Development Index (HDI), but disaggregated into **10 indicators**, with equal weights assigned to each dimension.

(1) Education Dimension – 2 Indicators:

(a) No household member aged 10 or above has completed at least six years of schooling.
(b) At least one school-age child (6–14 years) is not enrolled in school.

(2) Health Dimension – 2 Indicators:

(a) At least one household member is undernourished.
(b) One or more children in the household have died.

(3) Standard of Living Dimension - 6 Indicators:

(a) **Cooking Fuel**: Use of dung, wood, crop residue, or charcoal.
(b) **Sanitation**: Lack of improved toilet facilities or use of shared toilets.
(c) **Drinking Water**: The source is over 30 minutes away round-trip.
(d) **Housing**: Dirt floor, or walls/roof made of substandard materials.
(e) **Electricity**: No access to electricity.
(f) **Assets**: The household does not own a car or motorized vehicle, and owns at most one asset from a list (radio, TV, telephone, bicycle, motorcycle, refrigerator).

To identify multidimensionally poor households, a ***deprivation score*** is calculated for each household based on these indicators. A household is considered ***multidimensionally poor*** if its deprivation score is ***33.3% or higher***. If the score is ***between 20% and 33.3%***, the household is deemed ***vulnerable to multidimensional poverty***. If the score is ***50% or more***, the household is classified as ***severely multidimensionally poor***.

This approach offers a nuanced, comprehensive understanding of poverty, moving beyond income to reflect the **multiple deprivations that people face simultaneously in their daily lives**.

As discussed earlier, the value of the MPI is obtained by multiplying two indicators:

(a) Headcount Ratio (H):

This represents the proportion of the population that is multidimensionally poor.

$$H = q/n$$

Where:
q = number of people identified as multidimensionally poor

n = total population

(b) Intensity of Poverty (A):

This is the *weighted average of deprivation* faced by the poor. It is calculated by taking the sum of the deprivation scores (C) of poor households and dividing it by the number of poor people.

$$A = \Sigma_i C / q$$

Using this formula, the *deprivation score (C)* of the poor is determined.
Therefore, the Multidimensional Poverty Index (MPI) is calculated using the formula:

$$MPI = H.A$$

According to the Human Development Report (HDR) 2014, 55.3% of India's population (approximately 632 million people) were living in multidimensional poverty. Additionally, 27.8% of the population were living in severe

multidimensional poverty, indicating deprivation in more than half of the weighted indicators.

3. Multidimensional Poverty Index (MPI) Adopted by NITI Aayog:

The ***NITI Aayog***, in collaboration with the ***United Nations Development Programme (UNDP)*** and the **Oxford Poverty and Human Development Initiative (OPHI)**, has developed India's ***National MPI***. NITI Aayog's National MPI includes global indicators plus India-specific maternal health and financial inclusion indicators. It provides state and district-level multidimensional poverty monitoring aligned with SDG targets (NITI Aayog, 2023).

The report titled *"National Multidimensional Poverty Index: A Progress Review 2023"* presents multidimensional poverty estimates for **36 states/union territories** and **707 administrative districts** in India, using ***12 indicators***. These estimates are based on the data from the ***National Family Health Survey – 5 (NFHS-5), 2019–21*** and offer a comparative analysis with data from ***NFHS-4 (2015–16)***. The report not only provides the ***Headcount Ratio (H)*** - the percentage of the population that is multidimensionally poor; but also analyses the ***Intensity of Poverty (A)*** using a comprehensive methodology.

The National MPI largely follows the structure of the global MPI. While it retains the original **10 global indicators**, it also adds two new India-specific indicators:

1. **Maternal Health** (under the Health dimension): A woman who has given birth in the last five years had fewer than four antenatal care visits or no trained professional present at the time of delivery.
2. **Bank Account** (under the Standard of Living dimension): No member of the household has a bank or post office account.

Income is typically considered an input-based indicator — assuming that income enables access to essential needs. However, the availability of income does not necessarily ensure good health or education. Recognizing this, economists have developed ***output-based indices***, such as the MPI, to complement income-based poverty measures. Hence, the MPI is not a substitute for income or consumption poverty measurement but a **complementary tool** to better understand the complex nature of deprivation.

4. Nature of Regional Imbalance in Maharashtra and Its Reflection in Poverty

Maharashtra's geographical and cultural landscape is highly diverse, and this diversity gives rise to **regional disparities** across its administrative divisions, which further widen by the political dominance of western Maharashtra. These imbalances are clearly reflected in the **extent and nature of poverty** across the state.

4.1 Key Features of Regional Divisions:

Konkan Region: Certain areas have advanced due to industrial development and tourism. However, poverty remains

acute in remote tribal areas due to lack of infrastructure and opportunities.

Marathwada: Frequent droughts, water scarcity, and a high proportion of small and marginal farmers have led to chronic economic distress. There is low investment in health and education.

Vidarbha: Agricultural instability and farmer suicides have contributed to high poverty in rural areas, although urban centers like Nagpur show better socio-economic conditions.

Western Maharashtra: Comparatively developed with balanced growth in agriculture and industry. However, underdevelopment persists in some rural pockets.

4.2 Manifestations of Regional Imbalance in Poverty:

1. Significant disparities in the availability of education, healthcare, and employment opportunities.
2. Stark differences in standard of living between rural and urban areas.
3. Unequal distribution of benefits from industrial growth.
4. Water scarcity and agricultural failure in regions like Marathwada and Vidarbha are core contributors to sustained poverty.

5. Objectives and Research Methodology of the Study

The primary objective of this study is to understand the **regional patterns of multidimensional poverty in Maharashtra**. Although the state has witnessed overall progress, there exists a clear **inter-regional disparity** in poverty levels, intensity, and types of deprivation.

The study seeks to:

- Analyse multidimensional poverty by region (administrative divisions).
- Compare changes across ***three core MPI components: Headcount Ratio (H), Intensity (A)***, and the composite ***MPI value***.
- Identify which regions have shown improvement and which continue to lag.

This research is primarily based on **secondary data analysis**, utilizing data from *National MPI Progress Review Report – 2023* (by NITI Aayog); UNDP and IIPS datasets.

District-wise and region-wise data have been examined to track **absolute and relative changes** between NFHS-4 (2015–16) and NFHS-5 (2019–21). Through a comparative and analytical approach, the study seeks to **highlight the regional imbalance** in the progress of poverty reduction and to provide **policy recommendations** for addressing these disparities.

6. Analysis:

6.1 Maharashtra's Status in the Multidimensional Poverty Index (MPI) Compared to India

According to the report *"National Multidimensional Poverty Index: A Progress Review 2023"* published by NITI Aayog in July 2023, **135 million people (13.5 crore)** in India moved out of multidimensional poverty between 2015–16 and 2019–21.

Table 1: Comparative Changes in MPI – India vs. Maharashtra

Year	India MPI (NFHS-4)	Maharashtra MPI (NFHS-5)	Change in MPI (%)
2019–21	0.066	0.033	44%
2015–16	0.117	0.065	49%

Source: Author's calculation based on NITI Aayog's *National Multidimensional Poverty Index: Progress Review 2023* report.

In India, the ***headcount ratio*** (percentage of people in multidimensional poverty) declined from **24.85% to 14.96%**, while the ***intensity of poverty*** dropped from **47.14% to 43.34%**. The overall MPI fell from **0.117 to 0.066**, indicating that **44% of the poor population in India escaped multidimensional poverty**.

In Maharashtra, **approximately 8.74 million (87.37 lakh)** people were lifted out of multidimensional poverty during this period. The headcount ratio dropped from **14.80% to 7.81%**, and the intensity from **43.76% to 41.77%**.

While the state's overall progress in poverty alleviation is encouraging compared to the national average, it is equally important to examine the **inter-regional and district-level disparities** within Maharashtra to gain a clearer understanding of the inclusiveness of this progress.

6.2 Region-Wise Population in Multidimensional Poverty and Its Reduction in Maharashtra

Table 2: Regional-Wise Multidimensional Poor Population and Poverty Reduction in Maharashtra

Region	MPI Population (2015–16)	MPI Population (2019–21)	People Lifted Out of Poverty	% Reduction
Konkan	3,357,244	1,331,899	2,025,344	60%
Pune	2,241,677	1,057,669	1,184,009	53%
Nashik	4,719,413	3,083,701	1,635,712	35%
Aurangabad	4,645,220	2,335,434	2,309,786	50%
Amravati	2,155,582	1,125,981	1,029,602	48%
Nagpur	1,438,073	552,868	885,205	62%
Total	18,557,209	9,487,552	9,069,657	49%

Source: Author's calculations based on *NITI Aayog's MPI Progress Review Report 2023* and *IIPS Population Projection Report 2021*

According to NITI Aayog, a total of **8.74 million people in Maharashtra** exited multidimensional poverty between 2015–16 and 2019–21. The region-wise analysis, based on IIPS 2021 population projections, shows that, the highest poverty reduction was observed in the **Nagpur (62%)** and **Konkan (60%)** divisions. **Nashik (35%)** and **Amravati (48%)** divisions showed **relatively lower progress** in poverty

reduction. At the state level, the overall poverty reduction during this period was 49%**.**

This indicates that **Nashik and Amravati divisions** continue to lag behind compared to other regions, highlighting the need for **targeted policy interventions** to address regional disparities.

6.3 Multidimensional Poverty Headcount Ratio Across Divisions in Maharashtra

Although Maharashtra is one of the most progressive and industrially advanced states in India, regional socio-economic disparities continue to persist**.** The intensity, nature, and pace of poverty alleviation vary significantly across the state's different administrative divisions. Against this backdrop, it becomes essential to analyse the Multidimensional Poverty Headcount Ratio (HCR) at the regional level to design more effective policy interventions.

Based on the data from the National Family Health Surveys (NFHS-4: 2015–16 and NFHS-5: 2019–21), the NITI Aayog's 2023 report presents a division-wise analysis of multidimensional poverty in Maharashtra. While the overall poverty levels have declined significantly, regional disparities remain stark**.**

Table 3: Division-wise Headcount Ratio of Multidimensional Poverty in Maharashtra

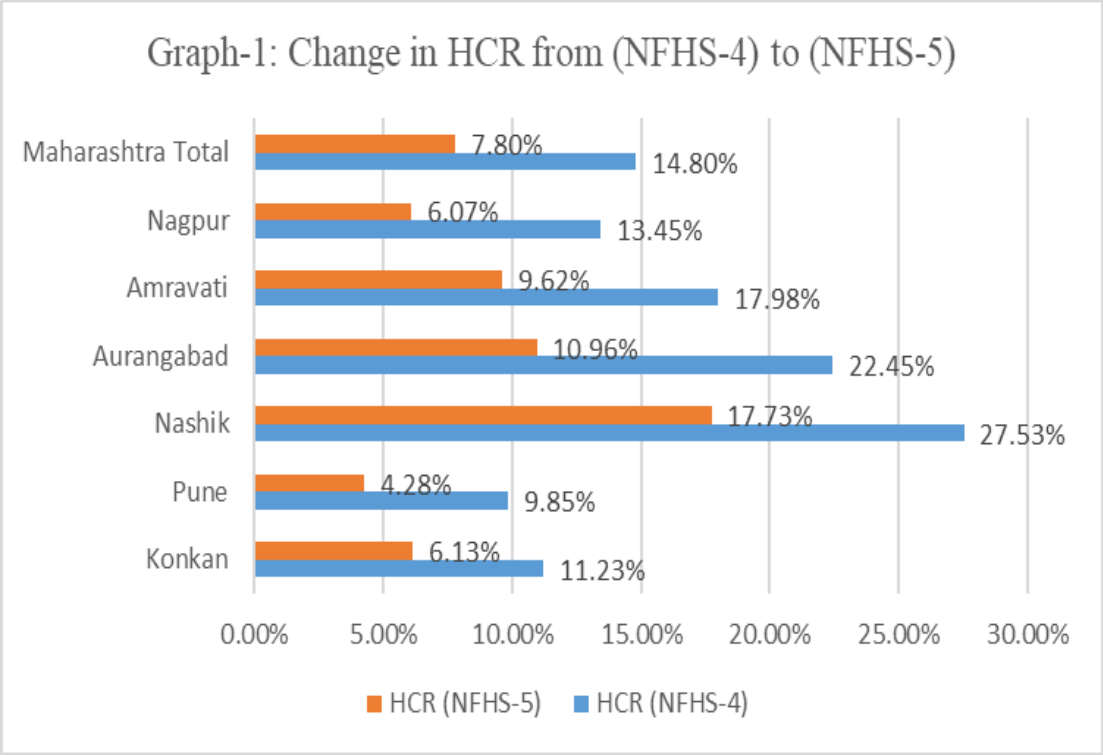
Division	HCR (NFHS-4)	HCR (NFHS-5)
Konkan	11.23%	6.13%
Pune	9.85%	4.28%
Nashik	27.53%	17.73%
Aurangabad	22.45%	10.96%
Amravati	17.98%	9.62%
Nagpur	13.45%	6.07%
Maharashtra Total	**14.8%**	**7.8%**

Source: Author's calculation based on NITI Aayog's *National Multidimensional Poverty Index: Progress Review 2023* and IIPS Population Projection Report 2021.

According to Table 3, the overall Multidimensional Poverty Headcount Ratio (HCR) in Maharashtra was 14.8% in 2015–16, which decreased to 7.8% in 2019–21. This indicates that nearly 49% of the population moved out of multidimensional poverty during this period. While this decline is certainly a positive sign, the differences across divisions remain striking.

The Pune (4.28%), Nagpur (6.07%), and Konkan (6.13%) divisions have shown comparatively better progress in reducing poverty. This can be attributed to greater industrialization, urbanization, and

improvements in education and health infrastructure, which have significantly helped reduce poverty.



On the other hand, the Nashik (17.73%), Aurangabad (10.96%), and Amravati (9.62%) divisions still report relatively high poverty levels. Contributing factors include drought conditions, agricultural dependency, a large number of small/marginal farmers, and lack of adequate health and educational services.

Chart 1 (bar chart) clearly illustrates the reduction in HCR between 2015–16 and 2019–21 for each division. Pune and Nagpur stand out for their significant reduction (about 5–7%), whereas poverty remains relatively high in Nashik and Aurangabad.

Interestingly, while HCR has declined in all divisions, some divisions now contribute more to the state's total poor population, which highlights that poverty alleviation progress is not uniform and varies across regions.

6.4 Directional Changes in Multidimensional Poverty by Headcount Ratio

While tracking the progress of multidimensional poverty in Maharashtra, it is not sufficient to examine only the reduction in Headcount Ratio (HCR). HCR tells us what proportion of the population has moved out of poverty, but it is equally important to observe the relative contribution of each division to the state's total multidimensional poor population. A division may show declining poverty levels but still contribute a higher share to the overall state poverty, which may serve as a policy warning.

Table 4: Relative Contribution to State Poverty & Directional Change

Division	Share in State MPI Poor (NFHS-4)	Share in State MPI Poor (NFHS-5)	Directional Change
Konkan	18.1%	14.0%	Decline
Pune	12.1%	11.1%	Decline
Nashik	25.4%	32.5%	Increase
Aurangabad	25.0%	24.6%	Decline
Amravati	11.6%	11.9%	Increase
Nagpur	7.7%	5.8%	Decline
Maharashtra	**100%**	**100%**	-

Source: Author's calculations based on NITI Aayog's *National Multidimensional Poverty Index: Progress Review 2023* and IIPS Population Projection Report 2021

According to Table 4, the relative share of Nashik and Amravati divisions in the state's poor population has increased, which is concerning. Although their respective HCR values have declined, other divisions have achieved faster progress, resulting in a larger proportional share of poverty concentrated in Nashik and Amravati.

In Nashik, the HCR declined from 27.53% to 17.73%, but its share in state poverty increased from 25.4% to 32.5%. This indicates that although poverty reduced, the rate of reduction was slower than in other divisions. Districts such as Nandurbar, Dhule, and Jalgaon continue to contribute significantly due to persistently high poverty.

In Amravati, the HCR dropped from 17.98% to 9.62%, but the share in state poverty increased slightly from 11.6% to 11.9%, suggesting a relatively slower pace of poverty alleviation compared to other divisions.

On the other hand, Konkan, Pune, and Nagpur showed both a decline in HCR and a decrease in their share of the state's poor population. For example, Nagpur's share dropped from 7.7% to 5.8%, indicating effective and faster poverty reduction.

Although Aurangabad's HCR declined, its share in state poverty remained nearly unchanged (25.0% to 24.6%), which implies that its pace of improvement was modest, and comparable to the state average.

This analysis highlights that it is not enough to consider HCR alone when evaluating progress. Monitoring relative contributions of each division to the state's total poverty is equally important. The increasing shares of Nashik and Amravati call for targeted policy attention, as these regions lag in terms of poverty alleviation. Conversely, Pune, Konkan, and Nagpur stand out as success models and may be considered for replication in other regions.

However, to sustain this success and address growing regional inequalities,

division-specific planning and strategic policy interventions are imperative.

6.5. Regional Status of Poverty Intensity

While analysing multidimensional poverty, it is not sufficient to consider only the *Headcount Ratio (HCR). Intensity of Poverty (A)* is an equally important indicator, which reflects the nature and degree of deprivation experienced by poor households. Poverty intensity represents the average deprivation index of the poor population. That is, even if the proportion of the poor is relatively low in a district or region, the intensity index reveals how many and what types of deprivations the poor population faces. If the headcount ratio is decreasing but the intensity remains high, it indicates that the deprived sections of society are still deprived of many essential services and opportunities.

Table 5: Regional Status of Poverty Intensity (NFHS-4 to NFHS-5)

Region	NFHS-4 (2015–16)	NFHS-5 (2019–21)	Absolute Decrease (%)
Konkan	42.8%	40.5%	▼ 2.3%
Pune	40.7%	39.6%	▼ 1.0%
Nashik	47.7%	43.0%	▼ 4.7%
Aurangabad	41.9%	40.4%	▼ 1.5%
Amravati	42.1%	40.9%	▼ 1.3%
Nagpur	40.2%	38.7%	▼ 1.5%

Source: Author's calculation based on NITI Aayog's National Multidimensional Poverty Index Progress Review Report 2023.

According to NITI Aayog's report "National Multidimensional Poverty Index – Progress Review 2023", between NFHS-4 and NFHS-5, the poverty intensity decreased in all regions of Maharashtra. However, this decline is marginal. As per Table 5, the state average intensity has decreased by only 1.99%, which is significantly lower than the 6.99% decline in the headcount ratio.

Nashik Division – Highest Decline in Intensity (4.7%) - Intensity dropped from 47.7% (2015–16) to 43% (2019–21), the highest reduction. Despite this, the division still records the highest intensity among all. Districts like **Nandurbar** and **Dhule**, which are tribal-dominated, hilly, and economically backward, continue to suffer from severe deprivation in **education, nutrition, healthcare, and sanitation.** Notably, Nandurbar's intensity fell from 53.76% to 46.22%, yet it remains one of the most deprived districts in Maharashtra.

Konkan Division – Expected Improvement (2.3%) - Poverty intensity declined notably in Mumbai and its suburbs: from 42.97% to 35.74% in Mumbai Suburban and from 39.73% to 37.84% in Mumbai. However, rural districts like Ratnagiri and Sindhudurg still face deprivation in cooking fuel, housing quality, and healthcare facilities.

Pune Division – Relative Stability (1.0%) - Though developed districts like Pune, Kolhapur, Sangli, and Satara saw a decline in intensity, some surprising trends emerged. Satara's intensity rose from 40.33% to 40.84%, and Pune's from 39.45% to 40.05%, suggesting that even economically prosperous regions have marginalized groups deprived of basic services.

Aurangabad Division – Slow Progress in Marathwada (1.5%) - Repeated droughts, heavy dependence on agriculture, and poor access to health and education have kept intensity high in **Aurangabad, Beed, Parbhani, and Hingoli**. **Parbhani** showed a rise in intensity from 40.35% to 41.08%, indicating worsening deprivation. This reflects the need for outcome-based policies rather than input-based ones.

Amravati Division – Mild Decline (1.3%) - Located in western Vidarbha, this division continues to suffer from multidimensional deprivation. **Buldhana, Washim, and Yavatmal** face persistent issues due to agricultural instability and lack of education and health infrastructure. Although the headcount ratio declined, the drop in intensity was marginal.

Nagpur Division – Urban Momentum Led to Decline (1.5%)- Nagpur district saw a reduction in intensity from 38.02% to 34.18%. However, in **Wardha**, intensity increased from 40.48% to 40.95%. This suggests that although multidimensional poverty has declined, deprivation persists, indicating gaps in service delivery.

The reduction in poverty intensity is occurring very slowly compared to the decrease in the headcount ratio. While it is encouraging that the number of poor people is decreasing, those still under the poverty line are experiencing deeper, more intense, and widespread deprivation. Hence, efforts to eradicate poverty should not be limited to reducing numbers. Rather, enhancing the quality of life through improvements in healthcare, education, sanitation, housing, nutrition, and financial inclusion is crucial. Targeted interventions focusing on reducing the degree of deprivation are the need of the hour to make poverty alleviation meaningful and sustainable.

6.6. Analysis of Changes in the Multidimensional Poverty Index (MPI) from 2015–16 to 2019–21:

The Multidimensional Poverty Index (MPI) is not merely income-based, but a comprehensive and realistic measure of economic deprivation that encompasses three key dimensions—health, education, and standard of living. Adopted by UNDP and OPHI post-2010, this methodology is officially applied in India at state and district levels through the National MPI, with NITI Aayog's support since 2021.

In the case of Maharashtra, there was a significant decline in MPI between 2015–16 (NFHS-4) and 2019–21 (NFHS-5), reflecting the state's socioeconomic advancement. However, this progress is not uniform across regions, and regional disparities are clearly evident.

Table 6: Regional MPI Changes in Maharashtra

Region	NFHS-4 (2015–16)	NFHS-5 (2019–21)	Change (%)
Konkan	0.048	0.031	▼35%
Pune	0.040	0.017	▼58%
Nashik	0.136	0.078	▼43%
Aurangabad	0.094	0.045	▼52%
Amravati	0.076	0.040	▼47%
Nagpur	0.055	0.023	▼58%
Maharashtra	0.065	0.033	▼49%

Source: Calculations based on NITI Aayog's National Multidimensional Poverty Index Progress Review Report, 2023.

The overall MPI for Maharashtra fell from 0.065 in 2015–16 to 0.033 in 2019–21, a 49% reduction—surpassing the national average (44%). This indicates substantial success in poverty alleviation efforts.

Pune & Nagpur, both regions saw a Most Successful (58%) drop in MPI. Pune's development is driven by education, healthcare, entrepreneurship, and urbanization. Nagpur, as Vidarbha's administrative, medical, and educational hub, also saw notable improvement. Example: Nagpur's MPI dropped from 0.026 to 0.004. Aurangabad Better than expected Improvement (52% drop), despite geographic and social challenges in Marathwada, policy interventions led to a 52% reduction. Example: Beed's MPI dropped from 0.097 to 0.051.

Amravati division showed balanced progress (47% drowp), although poverty headcount declined, deprivation persists in some districts. Example: Yavatmal's MPI decreased from 0.103 to 0.043. Nashik division showed improvement, but still high MPI, while Nashik's MPI declined from 0.136 to 0.078, it remains the highest in the state. Districts like Dhule, Jalgaon, and Nandurbar still lack basic services. Example: Nandurbar's MPI fell from 0.280 to 0.153, still alarming.

Konkan showed least reduction (35%), although Mumbai has an extremely low MPI (0.005), deprivation persists in the rural, hilly, and tribal areas of Konkan.

7. Summary and Conclusion:

Despite being an industrially advanced state, Maharashtra displays significant regional disparities in multidimensional poverty. This study shows that between 2015–16 and 2019–21, MPI in Maharashtra dropped by 49%, exceeding the national average. However, this reduction is uneven across regions. Analysis of headcount, intensity, and MPI reveals- Highest reductions occurred in Pune, Nagpur, and Aurangabad. Slower progress in Nashik and Konkan regions. Districts such as Nandurbar, Dhule, Jalgaon, Parbhani, Beed, Satara, and Wardha continue to exhibit high MPI or poverty intensity.

The Key Causes of Regional Disparity: include the remote, hilly terrain in districts like Nandurbar, Gadchiroli, and Ratnagiri, which obstructs access to essential services such as health, education, and infrastructure. Additionally, recurrent droughts, farm distress, and inadequate irrigation facilities significantly fuel poverty in Marathwada and parts of Vidarbha. Tribal populations in areas like Nandurbar, Dhule, and Gadchiroli experience deep-rooted social and economic marginalization, further widening the disparities. The stark contrast between better access to services in cities such as Mumbai, Pune, and Nagpur, reflected in their lower Multidimensional Poverty Index (MPI), and the delivery failures in rural regions exacerbates regional inequalities. Furthermore, digital and financial exclusion, characterized by the lack of banking facilities, UPI access, and postal accounts, severely limits economic opportunities for people in rural areas.

Policy Intervention Areas: Addressing regional disparities in multidimensional poverty in Maharashtra demands targeted policy interventions. Key policy areas include enhancing infrastructure in remote, hilly districts such as Nandurbar, Gadchiroli, and Ratnagiri to improve access to essential health, education, and social services. In drought-prone Marathwada and agriculturally unstable Vidarbha, policies should focus on improving irrigation facilities, promoting drought-resistant agricultural practices, and strengthening rural livelihoods. Social and economic marginalization among tribal populations in Nandurbar, Dhule, and Gadchiroli necessitates culturally sensitive and inclusive development programs. Moreover, addressing delivery failures of services in rural regions while replicating successful models from cities like Mumbai, Pune, and Nagpur will help mitigate urban-rural disparities. Promoting digital and financial inclusion by enhancing access to banking, digital payment solutions, and postal services in rural areas is crucial for fostering economic opportunities and alleviating poverty.

Maharashtra has made commendable progress in reducing multidimensional poverty. However, this progress is uneven. To eliminate regional disparities, an integrated, inclusive, and targeted approach is essential. The government must focus not just on reducing the *number* of the poor but also on improving the *quality* of poverty — by addressing deprivation in health, education, nutrition, housing, and financial access.

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A Study on Fiscal Consolidation Strategy of Karnataka

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Abstract

In Karnataka fiscal forms were brought to the forefront with the medium term fiscal plan (MTFP) during 2000-05. MTFP is an annual document which has fiscal targets and policies for budgetary exercise. The most important thing is, in 2002, Karnataka is the first state to establish Karnataka Fiscal Responsibility Act (KFRA). It is the statuary backup to the MTFP. Karnataka is on a fiscal consolidation path and borrowed money public findings at the time of Economic slowdown. after implementing KFRA. It had recorded revenue surplus and fiscal deficit was within 3 per cent of GSDP. As per the government of India guidelines state devoted to fiscal consolidation path.

Key words: *Medium Term Fiscal Plan, Karnataka Fiscal Responsibility Act, GSDP*

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1. Introduction

In Karnataka fiscal forms were brought to the forefront with the medium term fiscal plan (MTFP) during 2000-05. MTFP is an annual document which has fiscal targets and policies for budgetary exercise. The most important thing is, in 2002, Karnataka is the first state to establish Karnataka Fiscal Responsibility Act (KFRA). It is the statuary backup to the MTFP. Karnataka is on a fiscal consolidation path and borrowed money public findings at the time of Economic slowdown. after implementing KFRA. It had recorded revenue surplus and fiscal deficit was within 3 per cent of GSDP. As per the government of India guidelines state devoted to fiscal consolidation path.

2. Importance of the Study

The constitutional assignment in India will lead to an imbalance between state-level revenue capabilities and expenditure demands. The Constitution allows for the assignment of funds, the sharing of some centrally imposed taxes' earnings with the States, and the distribution of grants from the Consolidated Fund of India to the States. The Karnataka state has made significant efforts to rationalize and simplify the tax and non-tax resources since 1996-97. There has been some improvement in the state's budgetary resources in the recent years. The proposed study examined the state's tax and non-tax revenue resources and the policies pursued to rationalize the tax and non-tax revenue system. Karnataka derives its finances mainly from the own tax, own non-tax revenue, public debt, capital resources, share in central taxes, grants from the centre, public account and contingency account. The present study attempted to analyze how fiscal transfers have helped the process of fiscal consolidation through fiscal correction strategy with the help of KFRA and MTFP in respect of Karnataka.

3. Objectives of the Study

The study is devoted to the following objectives

1. To examine the trends of financial transfers from the central government to Karnataka.
2. To study the problems and issues relating to revenue sharing and grants-in-aid between Centre and the State on the recommendations of successive finance commissions and to find out how these transfers have affected the equity and efficiency.
3. To analyse how the reform process has impacted the centre-state financial relations in India, especially in Karnataka.
4. To analyse how fiscal transfers have helped the process of fiscal consolidation through fiscal correction strategy in respect of Karnataka.
5. To summarize the recommendations of State Finance Commissions of Karnataka and suggests measures for restructuring their working in a liberalized regime.

4. Hypothesis of the Study

Following were the hypothesis framed for the study:

1. In the post reforms period, Karnataka is on the path of fiscal consolidation
2. Fiscal transfers from center have helped Karnataka in terms of attaining fiscal health
3. The recent finance commissions have given scientific devolution criteria.
4. Present federal fiscal setup leads to both vertical as well as horizontal fiscal imbalances.

5. Methodology of the Study

Data Source

The present study was based on secondary data. The data was collected from various sources like Statistical Abstracts of India; Indian Public Finance Statistics; Reports of successive Finance Commissions; State Finance Commissions Reports; Economic Surveys of Government of India; Annual Budgets of the Central and State Governments; Five-Year Plan Documents; Bulletins published by Reserve Bank of India and so on.

Time Period

The present study covered a time period of 18-19 years from 2000-01 to 2017-18. This entire time period is called as economic reforms periods. During this period various ups and downs have taken place in different macroeconomic indicators, not only in India but also world over. Impact of these fluctuations are covered in the present study.

Analytical Techniques

Statistical tools like Ratios, Percentages, and Growth rates were used along with them Correlations, Regression, and different indices were worked. For pictorial presentation meaningful graphs, diagrams were depicted and Paired ‘t’ test was used for testing of hypothesis.

6. Conceptual Framework

Fiscal consolidation at the sub-national level in India has been undertaken under a rule based framework through the enactment of Fiscal Responsibility and Budget Management (FRBM) legislations by states. There are subtle variations across the states in terms of design and features of the Acts. This study discusses (a) the key aspects of the fiscal consolidation process of the State (b) the literature on fiscal consolidation and its link with growth (c)

the impact of fiscal consolidation on growth in the states (d) sources and composition of fiscal consolidation. The mainstream advocacy for fiscal consolidation has essentially hinged around prudent housekeeping, especially in the aftermath of periods of fiscal profligacy either to accelerate growth or to reduce public debt and limit its adverse impact on output and growth after the fiscal stimulus. A cut in government spending, if perceived as durable, implies a permanent reduction in the future tax burden, generating positive expectations among various economic agents. Empirical evidence suggests that design and timing are critical to the success of fiscal consolidation. Fiscal adjustment is found to have a higher likelihood of success if it is expenditure based. However, expenditure-based fiscal consolidation is also found to slow growth down when there are credit supply restrictions. A gradual fiscal consolidation based on a mix of revenue and expenditure measures can support growth, while reducing public debt. Higher initial levels of debt may also increase the probability of government pursuing successful fiscal consolidation. Recent 73rd and 74th constitutional amendments in India providing more powers in making policy desertion to the local governments, Village Panchayath, municipality and corporations metropolitans may demand for the sources or transfers from centre to the local level for providing public good and merit goods. Conditional resource transfers from the centre to the states can be made for this purpose hens state finance commission can facilitates transfers down to the local governments.

Fiscal Responsibility Legislation (FRL)

Main objective of FRL is to ensure fiscal sustainability, equity and fiscal management and achieving sufficient revenue surplus, greater transparency in fiscal operations and conduct of fiscal policy in a MTFP. The fiscal responsibility and budget management (FRBM) act, 2003 implemented 2004, mandates the union government to eliminate revenue deficit by 2009 and to reduce fiscal deficit to 3 per cent by 2008. The rules under FRBM act notified the target for reduction in revenue and fiscal deficit. Karnataka was the first state to implement fiscal responsibility legislation followed by Tamil Nadu, Kerala and Andhra Pradesh. There is only one limitation with Karnataka's FRL that is obscene of independent assessment body to review the fiscal scenario. Karnataka was able to reduce non developmental expenditure growth after the reforms. State did achieve fiscal consultation for better economic growth.

The Fiscal Responsibility and Budget Management (FRBM) Act, 2003

The committee on fiscal responsibility legislation was Constituted on 17th January, 2000 to go into various aspects of the fiscal system and recommended a draft legislation on fiscal responsibility. This was followed by an announcement in the budget 200-2001 for a strong institutional mechanism embodied in a fiscal responsibility act and to bring necessary legislative proposals Accordingly, fiscal responsibility and budget management bill 2000 was introduced in Lok Sabah in December 2000.

Karnataka fiscal responsibility (KFRA) Act, 2002

Karnataka is the active state which initiated many fiscal reforms. KFRA is also a one among them. The main objective of the Karnataka fiscal responsibility act is to bring revenue deficit to zero, fiscal deficit

to 3 per cent of the GSTP and another important objective of the fiscal reforms is to target at minimize in the deficit and debt as a proportion to the GDP. Karnataka Fiscal Responsibility Act amended in 2011. The act provided that the fiscal deficit during the year 2010-11 can exceed the limit but not more than 3.44 per cent of GSDP as a part of counter crisis measures.

Indian Constitution is designed beautifully for federal sector. On the one hand it provides Supremacy to the federal government**,** on the other hand it contains provisions to state governments to fight with central government for their needs. So Constitution is both rigid and flexible for the attainment of fulfilling national interest as well as local needs. In the same way federal fiscal system also has been designed and reformed over the period of time according to the necessity of Indian federal system.

7. Results, Analysis and Discussion

Finance Commissions' Recommendations

The third state Finance Commission had recommended that the devolution of sources to local self governments must be 36 per cent (Rs. 4701 crores in 2001-02) of non-loan gross own revenue receipts. Out of this 15 per cent is meant for urban local bodies and 85% to the PRIs. This is recommended for the period from 1996-97 up to 2001. Non Loan Gross Own revenue receipts of Karnataka has increased from Rs. 8024 crores in the Year 1997-98 to Rs. 13059 crores in the year 2001-02. Devolution to ULBs projected for the year 2001-02 was Rs. 705 crores, Plan devolutions to PRIs was Rs. 1297 crores, non-Plan was Rs. 2699 crores to PRIs. Proportion of ULB devolution in SFC recommendation raised from 10% in 1997-98 to 15 per cent in the year 2001-02.

Fourth State Finance Commission Recommendations

The fourth state finance commission FSFC was formed by the Karnataka Government under the constitutional provision of article 243 (1) and (y) in December 2015 with the chairmanship of Sri. C.G. Chinnaswamy, Sri. H.D. Amarnathan and Dr. H Shashidhar were the members.

Table 1. Criteria and Weightage

Sr. No	Criteria	Weightage (%)
01	Population	40
02	Area	20
03	Scs and STs Population	20
04	Illiteracy rate	20

Source: Fourth State Finance Commission Report, 2015. GoK

The finance commission made attempt to analyze fallowing issues.

- State's revenue capacity
- Development commitment
- Strengthening democracy
- Financial management

First state finance commission was on the view of federal fiscal relations at the state and decided to have gap filling method from transfers so it adopted pragmatic normative approach which observes the philosophy that "any person living anywhere in karnataka should get atleast basic needs average transfers worked out in this commission was 38.98%. The second state finance commission modified the concept of the non-loan net own revenue resources and implemented it. Second State Finance Commission evolved a devolution frame work allocation from the 11th

Finance Commission of India. Second Finance commission adopted a balanced financial allocation approach. The third state finance commission recommended separate devolution component to PRIs. Fourth State Finance Commission considers some measures to mobilise resources based on the available fiscal data. Fiscal and non-fiscal measures cover some aspects. The dependence on the state government for the funds to its financial autonomy. Importance source of revenue is property tax which has to be reformed. Tax based must be widened. Revenue from enterprises and non tax is expected reforms in audit and accounts must be done. Measures to be taken to improve the revenues of PRIs. The biggest challenge before the 4th state Finance Commission is the inconsistency of data from fragmented sources of information. The commission recommended reforms in tax administration by tax regulation authority (TRA).

Research Findings

In Karnataka fiscal forms were brought to the forefront with the medium term fiscal plan (MTFP) during 2000-05. MTFP is a annual document which has fiscal targets and policies for budgetary exercise. The most important thing is, in 2002, Karnataka is the first state to establish Karnataka Fiscal Responsibility Act (KFRA) It is the statuary backup to the MTFP.

Main objective of FRL is to ensure fiscal sustainability, equity and fiscal management and achieving sufficient revenue surplus, greater transparency in fiscal operations and conduct of fiscal policy in a MTFP. The fiscal responsibility and budget management (FRBM) act, 2003 implemented 2004, mandates the union government to eliminate revenue deficit by 2009 and to reduce fiscal deficit to 3 per cent by 2008. The rules under FRBM act notified the target for reduction in revenue and fiscal deficit. Karnataka was the first state to implement fiscal responsibility legislation followed by Tamil Nadu, Kerala and Andhra Pradesh. There is only one limitation with Karnataka's FRL that is obscene of independent assessment body to review the fiscal scenario. Karnataka was able to reduce non developmental expenditure growth after the reforms. State did achieve fiscal consultation for better economic growth.

Karnataka is the active state which initiated many fiscal reforms. KFRA is also a one among them. The main objective of the Karnataka fiscal responsibility act is to bring revenue deficit to zero, fiscal deficit to 3 per cent of the GSTP and another important objective of the fiscal reforms is to target at minimize in the deficit and debt as a proportion to the GDP. Karnataka Fiscal Responsibility Act amended in 2011. The act provided that the fiscal deficit during the year 2010-11 can exceed the limit but not more than 3.44 per cent of GSDP as a part of counter crisis measures.

According to thirteenth Finance Commission recommendations Karnataka's inter se share was 4.328 per cent. Average devolution as percent of GSDP in Karnataka was 2.69. The deferent between 13th finance Commission and Twelfth Finance Commission was 0.48 per cent. Share in service tax was 4.397 per cent. Karnataka's pre devolution non plan revenue surplus (deficit) was Rs. 24652.CrorePost devolution non plan revenue surplus (deficit) of Karnataka was Rs.41640 crores. Karnataka state government and had sought assistance to rehabilitees more than 30,000 miner irrigation tanks. Commission recommended an amount of Rs. 350 crores for this

purpose. Total Finance Commission transfers to Karnataka state was Rs. 74376.3 crore.

Considering all Factors, The Fourteenth Finance Commission (FC-XIV) increased the share of tax devolution to 42 per cent of the sharable tax pool which serve the too objectives of increasing the flow of non conditional transfer to the states. Inter se the share of Karnataka state, according to the recommendations of 14th Commission, was 4.713 per cent from divisible pool. Share of Karnataka state in service tax from divisible pool was 4.822 per cent. Pre Devolution revenue deficit of Karnataka Projected for the year 2019-20 is Rs. 4125 crores out of total state deficit will be Rs. 634347 crores. Post devolution revenue deficit (surplus) for the year 2019-20 will be Rs. -44874 crore. Out of total all state deficit of Rs. 34206 crores.

Fiscal Targets

For the union government, the limit on fiscal deficit will be 3 per cent of GDP From the year 2016-17. Fiscal deficit of all states must be of 3 per cent of GSDP.

Karnataka's Share in Transfers by the Fourteenth Finance Commission

For the Year 2015-16, the transfers to Karnataka was Rs. 448554 crores and it would be Rs. 202368 crores in 2019-20. The Important thing in the Fourteenth Finance commission is that almost eighteen states including Karnataka will not get any revenue deficit grants according to the recommendations.

Karnataka's Major Fiscal indicators (Projected relative shares to total transfers from Union)

- The total revenue receipts of the state have raised from Rs. 78176 crore to Rs. 146033 crores in 2017-18.
- State's own tax revenue registered an annual growth rate of 11.77% in 2012 and 12.02% in 2018.
- State own tax revenue was 62.81% in 2017-18. State non tax revenue was 4.68 %.
- Devolution from finance commission was 21.74%. and grants from the centre was 10.77% in the year 2017-18.
- The share of the devolution from the Centre to state has been increased over the period of time.
- The revenue expenditure was 82.15% in 2012-13 and it has decreased to 80.25% in total expenditure share in the year 2017-18.

Fiscal responsibility and budgetary management act mandates for center and states to limit their gross fiscal deficit to 3 per cent of GDP and GSDP respectively. Revenue deficits are to be neutral are negative according to the norms of FRL. Karnataka is one among the states which are sustaining these fiscal targets. Karnataka is procuring progressive fiscal health by adapting the guidelines of Karnataka fiscal responsibility act. And the state has achieved GFD to 3 per cent of its GSDP and negative revenue deficit to its GSDP.

Major Findings

- Tax revenue as percent of total revenue receipts was very high as 83.9% in 2016-17 compared to non-tax revenue which is only 16.1% in total revenue receipts. So the tax revenue is playing a great role in the fiscal scenario of the state.

- Compound annual growth rate of State's Own Tax Revenue (SOTR) for the period of 19 years was 16.3%.
- In social services revenue of education as percent to social services has increased from 32.6% in 2000-01 to 39.8% in 2016-17. Revenue of health raised from 23.8% in 2000-01 to 31.3% in 2016-17.
- .Industries have the revenue of 77.8% of total revenue in economic services in 2016-17
- Efforts to attain grater inclusion of development, Karnataka's expenditure on social sector jumped by about 268% in this decade (March 31st 2019). In fact the first five years of this decade the expenditure made by the India government, jumped by 20%.
- The ratio of social sector expenditure in development expenditure is very high of 57.4% in 201-17 compared to 41.3% for total expenditure. It can be concluded that the proportion of social sector expenditure has ratio to development expenditure is very high as more than half. In total expenditure also the share of social sector expenditure is very much considerable which indicates Karnataka's focus on social security and welfare of the society.
- In terms of capital account social sector expenditure accounts for nearly ¼ of the development expenditure and also nearly same in the total capital outlay.
- Capital expenditure concentrated more on education other than other components of social sector over the period of time.
- Non-tax revenue receipts of housing were 59% to non-plan revenue expenditure in 2000-01 and declined to 25% in 2014-15. The year 2014-15 onwards we don't have any category of plan and non-plan expenditure as per the guidelines from FC and expert committee. Karnataka has made a year marked achievement by maintaining its fiscal indicators below the targeted level. Among southern states Karnataka is in the forefront for achieving fiscal targets by FRBM Act.
- Gross Fiscal Deficit as a percent of GSDP in Karnataka as been declined from 3.9% in 2000-01 to 2.5% inn 2016-17 except the year 2001-02 which was raised to 5.2%. Revenue deficits as a percent of GSDP accounts for 1.7% in 2000-01 and it declined to -1.0 % in the year 2004-05. From their onwards revenue deficits of Karnataka had negative trend are neutral. There was -0.1% of RD in 2016-17. It is clear from the data that Karnataka is on the track with over coming fiscal deficit as well as revenue deficit at the prescribed level given by the Karnataka fiscal responsibility act 2002.
- Over the period of time there has been a drastic change in transfers from union to Karnataka. Share in central taxes has percent share of gross devolution and transfers was raised from 49.5% in 2000-01 to 62% in 2016-17. The same trend is repeated in grants also. Grants from the center as percentage share of gross devolution and transfers increased from 29.8% in 2000-01 to 33.9% in 2016-17. But the trend in loans from the center was reversed. Loans from the center was 20.7% in 2000-01 which was drastically declined to 4.1% in 2016-17.

The share in central tax to the state governments limit is raised from 32% in 13th Finance Commission to 42% in 14th

Finance Commission recommendation. By this way all the states are eligible to get maximum share from the center. Karnataka is one among these states which achieved fiscal targets by its own revenue as well as shares from center.

8. Testing of Hypothesis

Following is important Hypothesis framed for the study. And it was tested with statistical technique of Paired 't' test with MINITAB Software.

Fiscal transfers from center have helped Karnataka in terms of attaining fiscal health

Null Hypothesis (H_0): There is no difference between Pre-Devolution Transfers and Post Devolution Transfers. **$\mu 1 = \mu 2$**

Alternative Hypothesis (H_1) : There is a significant difference between Pre-Devolution Transfers and Post Devolution Transfers . **$\mu 1 \neq \mu 2$**

H0: **$\mu 1 = \mu 2$**

H1: **$\mu 1 \neq \mu 2$**

Paired T-Test and CI: Before Transfers, After Transfers

Descriptive Statistics

Sample	N	Mean	S.D.	SE Mean
After Transfers	19	68355	48234	11066
Before Transfers	19	45762	30455	6987

Estimation for Paired Difference

Mean	StDev	SE Mean	95% CI for μ_difference
22593	18034	4137	(13901, 31285)

μ_difference: mean of (After transfers – Before transfers)

Test

Null hypothesis	H_0: μ_difference = 0.05
Alternative hypothesis	H_1: μ_difference ≠ 0.05

T-Value	P-Value
5.46	0.05

Mean difference between After transfers and Before Transfers are not equal. Calculated T –Value is 5.46 % with 95% Confidence Interval (CI). P-Value is 0.05 which is highly significant. So the Null Hypothesis (H0) could be rejected.

Conclusion

Karnataka is the 8th Largest state in India in terms of geographical area and also 8th Largest state by population. The state population is 6.11 crore according to 2011 census. AS decadal Growth of population is 16 per cent. GSDP in 2015-16 is rupees 7,35,975 crore. Karnataka is on a fiscal consolidation path and borrowed money public findings at the time of Economic slowdown. After implementing KFRA it had recorded revenue surplus and fiscal deficit was within 3 per cent of GSDP. As per the government of India guidelines state deviated from fiscal consolidation path.

Karnataka's FRL is unique when it comes to fiscal management principle. Karnataka Fiscal Responsibility Act specifies 17 principles which include maintaining debt at prudent level, managing guarantees and liabilities prudently and borrowings to be used for capital formation, maintaining integrity of tax system and pursuing expenditure policies that would provide impetus to economic growth, poverty reduction and improvement in human

welfare. It also includes aspects of inter-generational equity, publishing the information. Fiscal Responsibility principles of other states suggest the fiscal targets to be achieved. FRLs specifies targets on Revenue deficit, primary deficit and Gross fiscal deficit prescribed by the governments.

Karnataka Government amended Karnataka Fiscal Responsibility Act during 2009 and 2011. Fiscal deficit target as per cent of GSDP increased to 3.5 per cent for 2008-09 as single time relaxation to meet the expenditure. Further target is raised to 4 % in 2009-10.

First state finance commission was on the view of federal fiscal relations at the state and decided to have gap filling method from transfers so it adopted pragmatic normative approach which observes the philosophy that "any person living anywhere in Karnataka should get atleast basic needs average transfers worked out in this commission was 38.98%. The second state finance commission modified the concept of the non-loan net own revenue resources and implemented it. Second State Finance Commission evolved a devolution frame work allocation from the 11th Finance Commission of India. Second Finance commission adopted a balanced financial allocation approach. The third state finance commission recommended separate devolution component to PRIs. Fourth State Finance Commission considers some measures to mobilise resources based on the available fiscal data. Fiscal and non-fiscal measures cover some aspects. The dependence on the state government for the funds to its financial autonomy. Importance source of revenue is property tax which has to be reformed. Tax based must be widened. Revenue from enterprises and non tax is expected reforms in audit and accounts must be done. Measures to be taken to improve the revenues of PRIs. The biggest challenge before the 4th State Finance Commission is the inconsistency of data from fragmented sources of information. The commission recommended reforms in tax administration by tax regulation authority (TRA).

In the federal country like India federal transfers policies affect the state revenue and expenditure policies. State's optimum fiscal policy based on the rules applied by the transferring funds to the state level governments. Three important criteria such as revenue effort, distance criteria and deficit financing are considered to estimate the weight assigned to the states. Our constitution provides independent revenue raising capacities and spending power state governments. The universal truth is that vertical imbalance and horizontal imbalances in taxing power is the common phenomena. To overcome these lag, the Constitution itself makes provision for transfers to states. Special category states get maximum benefits in terms of specific grants by the center. In Karnataka also revenue effort has been made by the government to tackle all types of deficits. Revenue maximization mechanism and expenditure minimizing policy is the key instrument for government to achieve the fiscal targets and make fiscal health in the state. The entire thing can be explained in the table 4.16. This table shows how fiscal transfers made Karnataka to be fiscally prudent. Over the period of time there has been a drastic change in transfers from union to Karnataka. Share in central taxes has percent share of gross devolution and transfers was raised from 49.5% in 2000-01 to 62% in 2016-17.

The same trend is repeated in grants also. Grants from the center as percentage share of gross devolution and transfers increased

from 29.8% in 2000-01 to 33.9% in 2016-17. But the trend in loans from the center was reversed. Loans from the center was 20.7% in 2000-01 which was drastically declined to 4.1% in 2016-17. According to the 11th, 12th Finance Commission recommendations all the states should avoid getting loan from center so that they would be far away from debt trap. So that 2005-06 onwards loans from the center was negative and some extent very negligible in the recent years. At the outset loans from the center were not promoted. Alternatives to this center raised grants to the state governments. The share in central tax to the state governments limit is raised from 32% in 13th Finance Commission to 42% in 14th Finance Commission recommendation. By this way all the states are eligible to get maximum share from the center. Karnataka is one among these states which achieved fiscal targets by its own revenue as well as shares from center.

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Levels of Women Work Participation and Unemployment: A Study of Government Initiatives in India

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Abstract:

A nation`s level of economics activity is significantly influenced by the size of its workforce. Considering that women make up half of the nation`s population, their involvement in economic activities is essential. Women`s participation in the workforce not only influences economic development but it also has an impact on their lives in terms of opportunities and benefits. In this context, this paper aims to provide an overview of women`s (age 15 and above) participation in workforce in India. This paper examines the trends and patterns of women unemployment and Women Worker Population Ratio from 2015-16 to 2023-24 in India. The main finding of this paper is that, WWPR is much lower than its male counterparts i.e., 76.3 percent for males and 40.3 percent for females in 2023-24. Additionally, this paper provides an in-depth evaluation of the significant initiatives, the government has implemented to reduce unemployment rates in India. In last, our paper raises the concern about women`s falling workforce participation and makes policy recommendations for boosting productive employment and decreasing women unemployment. Secondary sources of data were used in this study, obtained from National Sample Survey Organization and annual Periodic Labour Force Survey for the year 2015-16 to 2023-24.

Keywords: *Women, Unemployment, Women Worker Population Ratio, Government Initiatives.*

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I. Introduction:

India is renowned for having significant social, cultural and economic disparities because of its social structure built on male dominance. The World Economic Forun (WEF) has released its latest Global Gender Gap report (2023), in which India is rated 127th out of 146 countries. In India, women make up almost half of the population, hence their contribution to the country`s economy is significant and productive *(Himanshi & Rajeshwari, 2021).* Unemployment is the biggest issue faced by the local economy in India. The unemployment rate in India rose from 6.8 percent in January 2024 to 8 percent in February 2024 *(CMIE`S Consumer Pyramids Household Survey).* When gender-specific statistics are analyzed, the greater discrepancy is seen at the individual level, as the unemployment rate for men decreased from 4.4 percent to 3.2 percent in 2023-24, whereas it decreased from 3.3 percent to 3.2 percent for women during this period *[Periodic Labour Force Survey*

(PLFS)]. According to an *International Monetary Fund (IMF, 2015)* analysis, if the proportion of female workers rises to match that of male workers, India`s GDP may grow by 27 percent. Its particularly alarming to see that woman`s wage employment participation has been significantly lower than men`s i.e., 76.3 percent for males and 40.3 percent for females in 2023-24 *(PLFS, 2023-24).* Some researchers have brought up the fact that although women participate in a wide range of economic activities, the bulk of their efforts are not given the credit they deserve because of the widespread underreporting of women`s work. Furthermore, women`s contribution to the households are undervalued in economic survey and non-economic activities carried out within households are typically not documents. Undoubtedly, women`s domestic contribution are vital, but we cannot empower our half of the population if they are not included in economic activities. So, there is an urgent need to understand the ways in which women`s activities are changing, their low rate of workforce participation, their rising unemployment rate and the causes of high unemployment. In this context, this paper analyses the trends and patterns of women unemployment rate in India from 2015-16 to 2023-24 and reasons behind it. Regarding this unemployment situation, the administration has been concerned for a while. Numerous initiatives have been introduced by the Centre, State and Local governments to combat unemployment, such as the Aatmanirbhar Bharat Yojana, National Rural Livelihood Mission (NRLM), Deen Dayal Upadhaya Grameen Kaushal Yojana, Mahatma Gandhi National Rural Employment Guarantee Act, Pradhan Mantri Mudra Yojana and others. In this regard, the current study assesses the effectiveness of government initiatives aimed at reducing women`s unemployment in India.

Objectives of the Study: In this context, the present study aims to achieve the following objectives:

1) To analyses the trends and patterns of women unemployment and Women Worker Population Ratio in India from 2015-16 to 2023-24. Further this paper explores the causes of such trends.
2) To conduct an in-depth assessment of important initiatives implemented by the government for women unemployment and their performance.
3) To give suggestions to eliminating the problem of women unemployment.

Research Methodology: Data was acquired from secondary sources to meet the objectives of this study. Data was gathered from Journals, Newspapers, Research Papers, Articles and from numerous websites managed by the Centre and State governments including various round data of NSSO (National Sample Survey Organization), Centre for Monitoring Indian Economy (CMIE), International Monetary Fund (2015), World Economic Forum (WEF), International Labour Organization (ILO, 2014), Census of India (2011), Ministry of Labour and Employment, GOI, Labour Bureau Survey.

This research paper is organized into four sections. The present section (Section I) provides an overview of women unemployment including the objectives of the study, research methodology and literature reviews. Section II presents the trends and patterns of women

unemployment in India from 2015-16 to 2023-24 and reasons behind it. The detailed assessment of the significant initiatives taken by the government to reduce women unemployment is provided in section III. Conclusion and recommendations are provided in the final section (Section IV).

II. Trends and Patterns of Women Unemployment and Women Worker Population Ratio (WWPR) in India from 2015-16 to 2023-24.

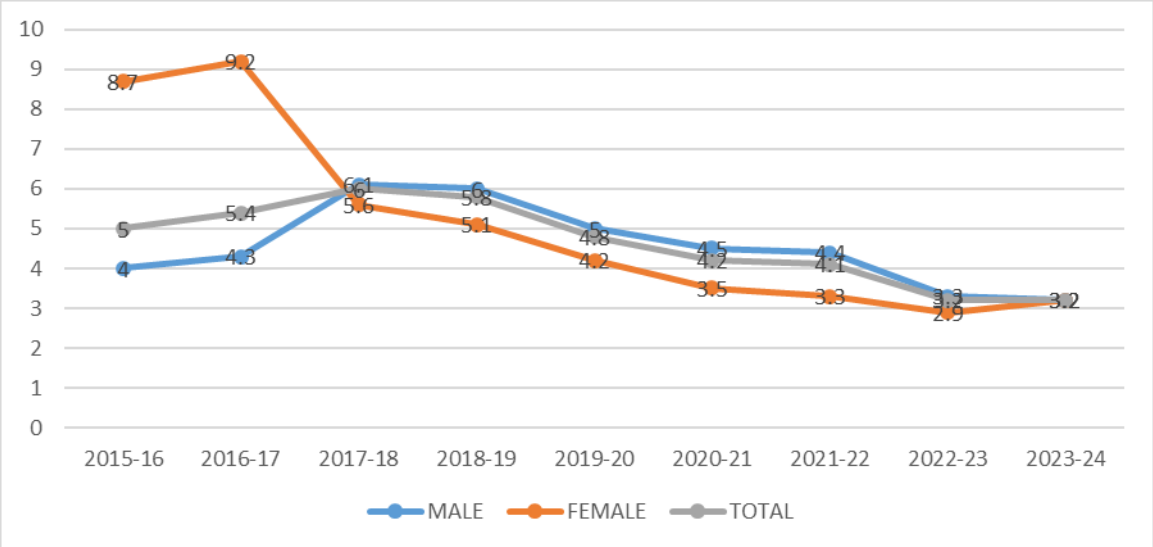
Unemployment is the state in which a person who is looking for work, is not able to find it. The below table 1 showcases the conditions of unemployment for male and female in India from 2015-16 to 2023-24. The current situation depicts that total unemployment rate in India is 3.2 percent while for male it is 3.2 percent and for female it is also 3.2 percent. However, there was a hike in 2016-17, which shows that unemployment rate for women was 9.2 percent, while for men it was only 4.3 percent. After 2016-17, it can be seen that the unemployment rate of women is less than the unemployment rate of men every year. On the other hand, it can also be seen that the unemployment rate for men is decreasing faster than that of women.

Table:1 Unemployment Rate (in percent) in usual status estimated from PLFS 2015-16 to 2023-24 for age group 15 years and above.

YEAR	MALE	FEMALE	TOTAL
2015-16	4.0	8.7	5.0
2016-17	4.3	9.2	5.4
2017-18	6.1	5.6	6.0
2018-19	6.0	5.1	5.8
2019-20	5.0	4.2	4.8
2020-21	4.5	3.5	4.2
2021-22	4.4	3.3	4.1
2022-23	3.3	2.9	3.2
2023-24	3.2	3.2	3.2

Source: PLFS Various Round Report from 2015-16 to 2023-24.

Fig. 1: Unemployment Rate (in %) in usual status estimated from PLFS 2015-16 to 2023-24



Source: PLFS Various Round Report from 2015-16 to 2023-24.

In this research paper, an attempt has been made to determine the level of Worker Population Rate in India between 2015-16 to 2023-24.

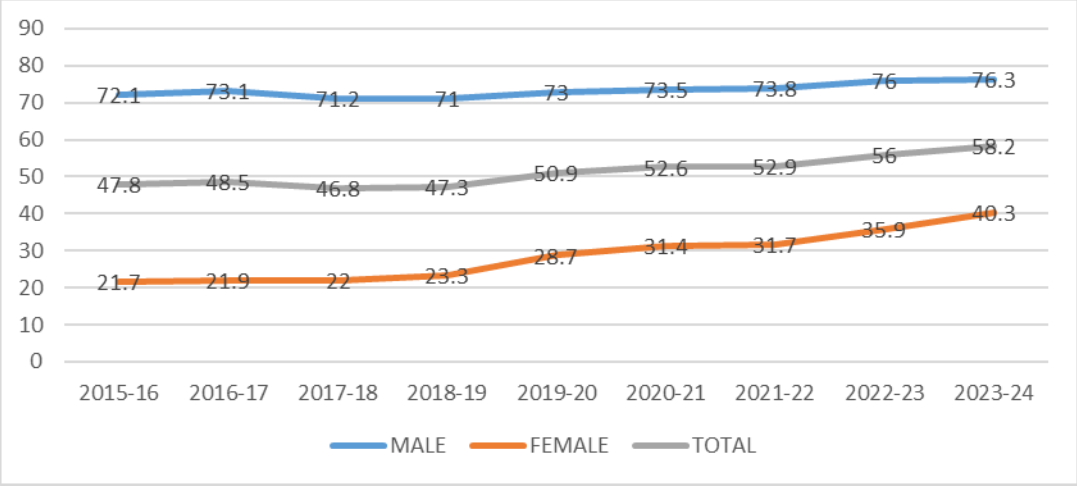
Table: 2 Worker Population Rate (in percent) in usual status for age group 15 and above from year 2015-16 to 2023-24.

YEAR	MALE	FEMALE	TOTAL
2015-16	72.1	21.7	47.8
2016-17	73.1	21.9	48.5
2017-18	71.2	22.0	46.8
2018-19	71.0	23.3	47.3
2019-20	73.0	28.7	50.9
2020-21	73.5	31.4	52.6
2021-22	73.8	31.7	52.9
2022-23	76.0	35.9	56.0
2023-24	76.3	40.3	58.2

Source: PLFS Various Round Report from 2015-16 to 2023-24.

As table and figure 2 shows that, the total worker population rate in India is 58.2 percent in 2023-24, while for male it is 76.3 percent and for female it is only 40.3 percent which is half of its male counterparts. If we compare the male workforce data in the table provided, there has not been a noticeable shift in the workforce pattern throughout that time. In the total workforce, male participation is greater in every year data. In a similar vein, the percentage of women who work is lower overall, rising from 21.7 percent in 2025-16 to 40.3 percent in 2023-24. There is a significant imbalance in the workforce between men and women, with men having access to greater career options across a wider range of economic sectors. It is also noticed that on the one side unemployment rate among females is declining and another side worker population rate of female is persistently increasing. However, a little decline in unemployment is noticed in the most recent round of PLFS data but not satisfactory.

Fig. 2: Worker Population Rate (in percent) in usual status for age group 15 and above from year 2015-16 to 2023-24



Source: PLFS Various Round Report from 2015-16 to 2023-24.

In a nutshell, it is noticed that women`s participation in economic activities is decreasing in India, which is concerning for both women`s empowerment and nation`s economy as a whole. I also attempted to elucidate the cause of the dropping Women`s Worker Population Rate in this section.

Possible Reasons for Declining Women`s Worker Participation Rate and Increasing Unemployment Rate.

♦ **Housework and Maternal Duties:** According to the research, Women Worker Population Rate is higher in India`s poorer states than it is in the country`s less impoverished areas. As the family's income rises, women choose to perform their housekeeping duties in a more specialist manner. The highest Women Worker Population Rate is for those households that are poorest and as the income increases, the likelihood of women working decreases *(ILO, 2014)*.

♦ **Mobality/Freedom to Travel:** Social barriers like freedom to travel is another reason for increasing unemployment rate among women. Man travels much larger than women to go to work in most cities (Census of India,2011).

♦ **Wage Gap:** Studies from *India`s Leading Diversity and Inclusion Firm Avtar Groups* shows that women are paid 34 percent less than men for performing the same job with the same qualification. Maternity leave and unable to work till late at night are the reasons behind wage gap. Women become demotivated to join the workforce, when wage gap widens.

♦ **Increasing Enrollment in Higher Education:** There is no denying that women in India are becoming more educated, especially those between the ages of 15 and 29 years. For men, we see that as the level of education increase, a greater share of men joins the workforce but in case of women, we see the U-shaped relationship between education and Women Worker Population Rate in India as the level of education increases, Women Worker Population Rate decreases.

Apart from these reasons, increasing population, low job opportunities, mechanization in agriculture, lack of appropriate skills/skill mismatch and sluggish industrial sector progress are some other reasons behind declining Women Worker Population Rate.

III. Government Initiatives for Women Unemployment in India.

In India, policy concern for women has been an issue since independence. Since the 1950s, reducing unemployment has been a primary goal of five-year plans. Numerous strategies and initiatives have been introduced with the aim of eradicating or drastically decreasing the unemployment problem. The federal, state and local governments have collaborated on a number of programmes to combat unemployment. In this section, several programmes that were put in place with the intension of eradicating unemployment and generating jobs will be covered, along with their effectiveness. The following are a few noteworthy schemes:

♦ **Mahatma Gandhi National Rural Employment Guarantee Act:** Ensuring employment for everyone was the goal of the National Rural Employment Guarantee Act of 2005. It was authorised on September 7. The purpose of this act is to increase rural people capacity to work in unskilled manual labour for the duration of

the fiscal year. The Mahatma Gandhi National Rural Employment Guarantee Act replaced the National Rural Employment Guarantee Act as its new name in 2009.

Table: 3 Performanc of Mgnrega till December 2024

Characteristics	Performance (in Crore)
Active Workers	13.24
Assets Created	8.66
Persons Days Generated	187.73
DBT Transactions	30
Household Benefited	4.85
Individual Category works	2.01

Source: Ministry of Rural development, Govt. Of India.

Table 3 demonstrate the present performance of the Mahatma Gandhi National Rural Employment Guarantee Act. MGNREGA has benefited 4.85 crore households and provide employment to 13.24 crore workers.

♦ **National Rural Livelihood Mission (NRLM):**

The National Rural Livelihood Mission, an effort to fight poverty, was launched in June 2011 and is being carried out by the Ministry of Rural Development, Government of India. Its three primary pillars are enhancing and expanding the poor`s current alternatives for subsistence, equipping them with employable skill outside of the job market and promoting self-employment and entrepreneurship. After counselling, skill development would be given to BPL youth residing in rural areas. It is partially funded by World Bank. In 2015, the Government renamed the mission as the Deen Dayal Antayodaya Yojana.

Table:4 Scale Achieved by Nrlm During Current Fy 2024-25.

Characteristics	Scale Achieved (in no.)
Self-Help Groups	9,175,483
Household Mobilized	102,920,576
Village Organization	16804364
Amount Disbursed (in crore)	107863.23

Source: NRLM- Ministry of Rural Development, Government of India.

The number of village organizations, amount disbursed, self-help groups and families mobilized by the National Rural Livelihood Mission by the current financial year 2024-25 is shown in table 4. From June 2011 to December 2024, 16804364 village organizations were promoted, 9,175,483 self-help groups were established and 102,920,576 families were mobilised under NRLM.

♦ **Deen Dayal Upadhaya Grameen Kaushal Yojana:**

DDU-GKY is a government supported scheme that was created and introduced in 2014. It is a component of the National Rural Livelihood Mission Programme. The majority of the target audience for this

programme is young people in rural areas, aged 15 to 35. It has two main objectives as increasing the diversification of rural disadvantaged families' income and increasing the career aspiration of rural youth. Mandatory coverage of socially disadvantage groups (SC/ST-50%, Minority-15%, Women-33%). This scheme is administered by the Government of India, Ministry of Rural Development. Training, uniform, course material, lodging and board in case of residual programmes and express reimbursement in non-residential programmes are all supplied at no cost to the candidates.

Table:5 Performance of Ddu-Gky Scheme (December 2024)

Year	No. of candidates trained	No. of candidates placed
2014-15	43,038	21,446
2015-16	2,79,509	1,30,958
2016-17	4,42,095	2,78,841
2017-18	5,73,622	3,54,628
2018-19	8,15,131	4,91,879
2019-20	10,62,308	6,42,093
2020-21	11,00,597	6,91,656
2021-22	11,97,603	7,37,268
2022-23	14,28,965	8,94,808
2023-24	16,28,206	10,51,114
2024-25 (Till Dec24)	16,88,971	10,96,729

Source: Ministry of Rural Development, DDU-GKY.

Table 5 shows the number of candidates who were trained and the number of applicants that were placed under DDU-GKY scheme. From 2014 to December 2024, 16,88,971 candidates were trained and 10,96,729 candidates were placed under this scheme. The Covid-19 pandemic has reduced the number of trained applicants throughout 2020-22. Apart from this, in Haryana, 46,506 candidates were trained and 36,418 candidates were placed under this scheme.

♦ **Pradhan Mantri Kaushal Vikas Yojana:** The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) was unveiled in 2015. The principal aim of this programme is to furnish a large number of youths with the tools required to develop professional skills that will facilitate their pursuit of better employment opportunities. This project provides average monthly financial incentives of Rs 8000 to persons undergoing skill certification. Through enhancing their ability training, it helps youths secure profitable jobs and become more productive.

Table:6 Pmkvy till December 2024

Characteristics	Scale Achieved (in no.)
Enrolled Candidates	2,877,785
Assessed candidates	1,186,396
Trained candidates	2,049,802
Certified candidates	1,005,792

Source: PMKVY Report 2024, Ministry of Skill Development and Entrepreneurship, GOI.

This table shows the number of enrolled applicants, assessed candidates, trained candidates and certified candidates attained by PMKVY till December 2024. From 2015 to December 2024, a total of 2,877,785 candidates have enrolled under PMKVY, 2,049,802 trained candidates and 1,005,792 certified candidates**.**

♦ **Pradhan Mantri Mudra Yojana:** In developing countries like India, small businesses are crucial for generating employment opportunities and accelerating GDP growth. The Modi Administration introduced the MUDRA yojana on April 8, 2015, with the aim of promoting self-employment across the nation. Small, non-farm, anti-corporate enterprises can apply for loans up to 10 lakh rupees from the Micro Unit Development and Refinance Agency or MUDRA. These funding options are provided by non-banking financial intuitions, commercial banks, small finance banks and regional rural banks.

Table:7 Achievement Under Pradhanmantri Mudra Yojana.

Year	No. of PMMY loans Sanctioned	Amount Sanctioned (in crore)	Amount Disbursement (in crore)
2015-16	34880924	137449.27	132954.73
2016-17	39701047	180528.54	175312.13
2017-18	48130593	253677.10	246437.40
2018-19	59870318	321722.79	311811.38
2019-20	62247606	337495.53	329715.03
2020-21	50735046	321759.25	311754.47
2021-22	53795526	339110.35	331402.20
2022-23	62310598	456537.98	450423.66
2023-24	66777013	541012.86	532358.35
2024-25 (Till Dec. 2024)	30782800	294956.66	287812.10

Source: MUDRA (2015-2024).

This table displays the achievements made under the Pradhan Mantri MUDRA Yojana in terms of the total amount approved, the total amount disbursed and the total number of PMMY loans approved from 2015 to December 2024. Since 2015, its loan sanctioned rate has been continuously growing until December 2024. Consequently, there are an increasing number of small business and job opportunities.

♦ **Aatmanirbhar Bharat Rojgar Yojana (ABRY):** ABRY was announced in 2020 as a part of Aatmanirbhar Bharat 3.0 package, with the goals of boosting the economy, increasing employment creation in the post-COVID recovery phase and providing incentives for the development of new jobs in addition to social security benefits and compensation for lost wages during the COVID-19 pandemic. Through the Employees Provident Fund Organization (EPFO), this programme is

being implemented. The Government of India is crediting the employer`s share (12% of wages) and employee`s share (12% of wages) of the contribution payable under ABRY for a period of two years, or solely the employees share, based on the employment strength of the EPFO registered establishment.

Table:8 Scale Achieved by Abry till March 2024

Characteristics	ABRY
Amount Reimbursed	Rs.10188.50 Crore
Establishment Benefited	01,52,517
No. of Benefited/New Employees.	60.49 lakh

Source: ABRY- Ministry of Labour and Employment, GOI.

Table 8 shows the achievements made under the ABRY in term of the amount reimbursed, establishment benefited and number of beneficiaries/new employees from 2020 to March 2024. According to the preceding table, ABRY has benefited 60.49 lakh Employees or Candidates and amount of 10188.50 crore reimbursed till March 2024.

Beti Bachao, Beti Padhao (2015), Sampoorna Grameen Rozgar Yojana (September, 2001), Aatmanirbhar Bharat Rozgar Yojana (October, 2020), Pradhan Mantri Rozgar Protshan Yojana (2016) and Prime Minister`s Employment Generation Programme (2008) are some other important initiatives taken by the government to provide employment and self-employment opportunities.

This section lists the numerous government initiatives that are beneficial to the poor people and women. The swot up comes to the conclusion that, while these programmes have significantly improved the lives of underprivileged people and women, but there is still more that can be done to alleviate the state of affairs such as unemployment in India. More policies are not required, instead better and more efficient policies are needed to address the needs of the women so they can survive and have a source of income.

IV. Conclusion and Recommendations

Economic empowerment is an essential pillar of independence in the modern world of globalisation and liberalisation. Being financially independent allows people to fully exercise their rights and participate in decisions both within and outside of their homes, which is crucial for leading a life of honour and dignity. Financial independence would come through engagement in paid work. Unfortunately, the present paper reveals that Women Worker Population Rate (WWPR) is much lower than its male counterparts i.e., 76.3 percent for males and 40.3 percent for females in 2023-24 in India. The study resulted in a few recommendations that, if implemented, will address the problem of women unemployment and provide answer to it. First and foremost, we urgently need to change our perception regarding women`s work, household responsibilities, travel etc. Secondly, in order to raise the rate of female labour force participation, transport infrastructure needs to be improved. For women`s safety while travelling, specific regulations should be established. Thirdly, jobs that are acceptable to Indian women must be created by the Indian economy. Furthermore, additional part time employment ought to be available to meet

the requirements of the community. Subsequently, there is great need to provide wage equality in the country, which will encourage a large number of women to enter the workforce. The easiest method to address this issue is to increase the amount of self-employment options. Reviving cottage and small-scale industry can help to alleviate rural women unemployment. Apart from this, educational system should be changed so that women`s receive career and job-oriented instructions while they are in school/college. Women`s employability must be enhanced through skill development and vocational education. The study also suggested that women must change their professional perceptions and take advantages of the training options available to them in order to attain the technical skills required for equal opportunity. All of them will not be effective unless population growth is controlled. Essentially, until the birth rate is brought down to an optimal level, the world will be ruled by hunger, suffering and unemployment. Consequently, it is essential to implement the significant measures mentioned above in order to provide employment opportunities for women.

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Emerging Potential of Food Processing Sector in India

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Abstract:

This study explores the evolution of India's food processing sector from traditional methods to modern technology, emphasizing its global significance in food security and sustainability. It outlines primary and secondary food processing types and highlights the sector's benefits, including reduced waste, employment generation, and increased export revenue. Food products dominate the industrial landscape, comprising 15.89% of all factories and 16.74% of operational ones. Of 246,504 total factories in India, 198,628 are active, employing over 16.6 million people, utilizing ₹364,135 crores in fixed capital, and generating ₹898,330 crores in output. In 2019–20, the sector employed 20.32 lakh people in registered units (12.22% of industry employment) and 51.11 lakh in 2015–16 (14.18%). India's food exports rose from $34.42 billion in 2017 to $44.71 billion in 2021, increasing its global share to 2.48%. FDI trends show fluctuations, peaking at ₹6,414.67 crore in 2019–20 and declining sharply in 2020–21 due to COVID-19. Despite growth potential and resource availability, the sector faces a critical shortage of skilled manpower, requiring targeted strategies to enhance productivity and profitability.

Keywords: *Food Processing; Growth; Foreign Direct Investment; Gross Value Added;* ***Industries.***

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Introduction

The food processing industry in India has ancient roots, with traditional preservation methods like salting, sun-drying, and fermentation. Today, these are enhanced with advanced technology and modern preservatives (Ebenezer & Savitha, 2023). Food processing involves converting agricultural, animal, and marine products from their raw state into consumable or longer-lasting forms. As the world's second-largest food producer, India's food processing sector holds immense growth potential (Sohanlal, 2022). In a globalized economy, food processing is vital for international food trade, food security, and supporting global development, health, and sustainability goals (FAO, 2023). Food

processing is categorized into primary and secondary types. Primary products include processed fruits and vegetables, while secondary processing creates items like jam, butter, and sauces. These processes help develop new products and extend shelf life, ensuring freshness for longer periods. A robust food processing industry can enhance socio-economic conditions by reducing waste, increasing product value, generating employment, and boosting export earnings (Joseph & Mammen, 2020).

This activity occurs in both large-scale industries and small-scale home setups. With over 45.76% of India's workforce in agriculture, the country has a strong supply of raw materials. In 2018–19, horticultural production reached 355.48 million tons. Processing helps transform unprocessed goods into long-lasting products, reducing wastage (Alam, 2018). The industry contributes significantly to economic growth and job creation. India's food processing sector is expected to generate 9 million jobs by 2024. By 2030, household consumption is projected to quadruple, positioning India as the fifth-largest global consumer of food and food technology (Hindu, 2023). The sector supports sustainable development by reducing spoilage and facilitating global exports. It connects Indian farmers to domestic and international markets. The Ministry of Food Processing Industries continues to build a strong value chain to draw investments.

Currently, the sector employs about 1.93 million people, accounting for 12.38% of registered factory jobs. The unregistered sector adds another 5.1 million workers, according to the NSSO 73rd Round. The industry is prominent in areas like grains, sugar, oils, beverages, and dairy. In rural areas, it benefits from ample resources and labor. The government allocated ₹2,000 crore through NABARD in 2014–15 to support rural food processing and food parks. Farmers increasingly sell crops directly to processors, boosting yields. With rising population and food demand, the need for expanded processing infrastructure is urgent. This article explores the sector's role in economic growth, analyzing trends in GDP contribution, exports, employment, foreign investment, and development challenges.

1. Research Methodology

This study used secondary data from sources including the Ministry of Food Processing Industries, The Hindu, and various journals, covering data from 2017–2023. It examines Gross Value Added, GDP contribution, employment, fixed capital investment, exports, and FDI, using appropriate statistical tools for analysis.

Compound Annual Growth Rate (CAGR):

Compound Annual Growth Rate (CAGR) is a metric used for measuring the average annual growth rate of Gross value added (GVA) and fixed capital investment in food processing industries.

$$CAGR = \left\{\left(\frac{EV}{BV}\right)^{\frac{1}{n}} - 1\right\} \times 100$$

Where,

EV= Ending Value

BV= Beginning value

n = Number of years

- **Coefficient of variation (CV):**

Coefficient of variation (CV) has been employed to measure the variability of Gross Value Added (GVA) data for 2012-13 to 2020-21.

$$CV = \frac{\sigma}{\mu} * 100$$

Where,

σ = Standard Deviation

μ = Mean

The analysis will show case the current performance and emerging potential of Agro processing industries in India.

3. Results and Discussion

3.1 Sectorwise Gross Value Added (GVA) in India

Gross Value Added (GVA) is a measure of the economic value created by a business, industry, or sector. It represents the difference between the output of goods and services and the intermediate consumption (the value of inputs used in producing those goods and services). Essentially, GVA shows how much value is added to raw materials or intermediate products by the production process. GVA is important as it helps to understand the contribution of different sectors to the economy and is a key component in calculating a country's Gross Domestic Product (GDP). When summed across all sectors and adjusted for taxes and subsidies, GVA equals GDP

Table 1: Sectorwise Gross Value Added (GVA) in India at Constant 2011-12 Prices

(Rs. In Lakh Crore)

Economic Activity	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	CV
GVA -All India	85.46	90.64	97.12	104.92	113.28	120.34	127.34	132.19	125.85	15.38 %
% Growth rate	5.42	6.06	7.15	8.03	7.97	6.23	5.82	3.81	-4.80	-
GVA Manufacturing	4.87	15.61	16.84	19.04	20.55	22.09	23.29	22.61	22.48	31.22 %
% Growth rate	5.46	4.98	7.88	13.06	7.93	7.49	5.43	-2.92	-0.57	-
GVA in Agriculture, Forestry and Fishing	15.24	16.09	16.06	16.16	17.26	18.40	18.79	19.82	20.48	10.57 %
% Growth rate	1.46	5.58	-0.19	0.62	6.81	6.60	2.12	5.48	3.33	-
GVA-FPI	1.30	1.30	1.34	1.61	1.79	1.93	2.36	2.26	2.37	24.86 %

Source: Annual Report 2022-23, MFPI, Govt. of India.

(Note: CV - Coefficient of variation)

Throughout the fiscal years 2012–13 to 2020–21, Table 1 shows a general rise in Gross Value Added (GVA) across Indian sectors, reflecting economic growth. A notable decline occurred in 2020–21, likely due to COVID-19. Manufacturing GVA

grew from 4.87 in 2012–13 to a peak of 23.29 in 2018–19 but declined slightly thereafter. Agriculture, forestry, and fisheries GVA increased steadily from 15.24 to 20.48, while food processing rose from 1.30 to 2.37, showing consistent growth. Although manufacturing showed volatility in recent years, agriculture and food processing sectors demonstrated continuous contributions to the economy.

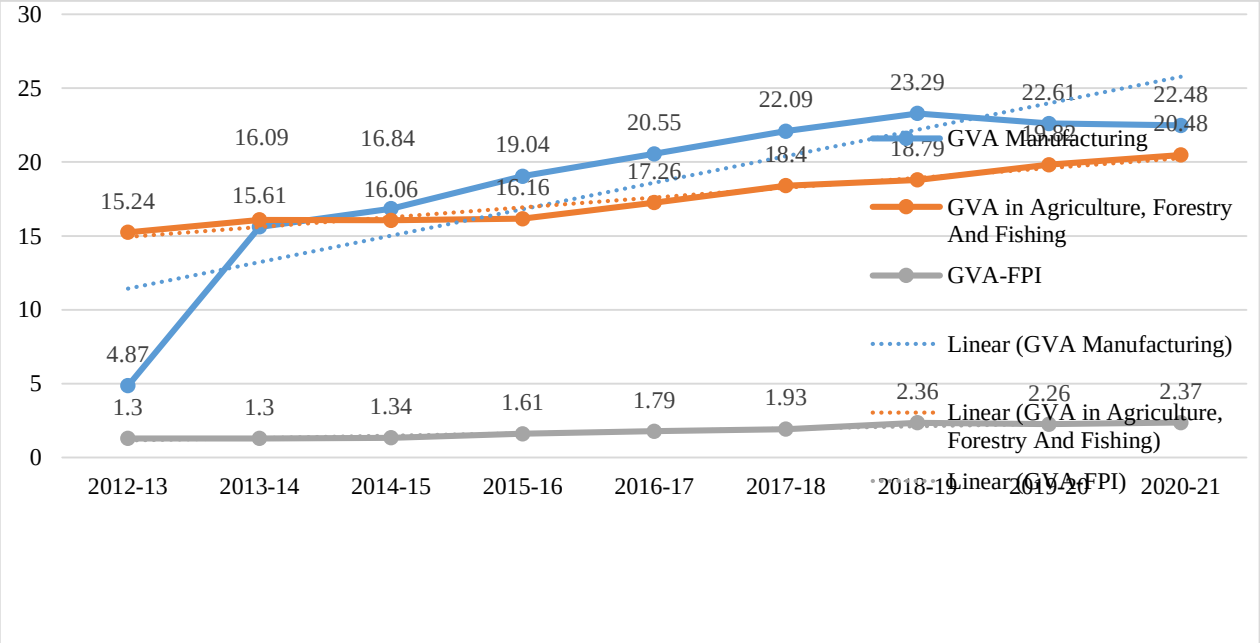


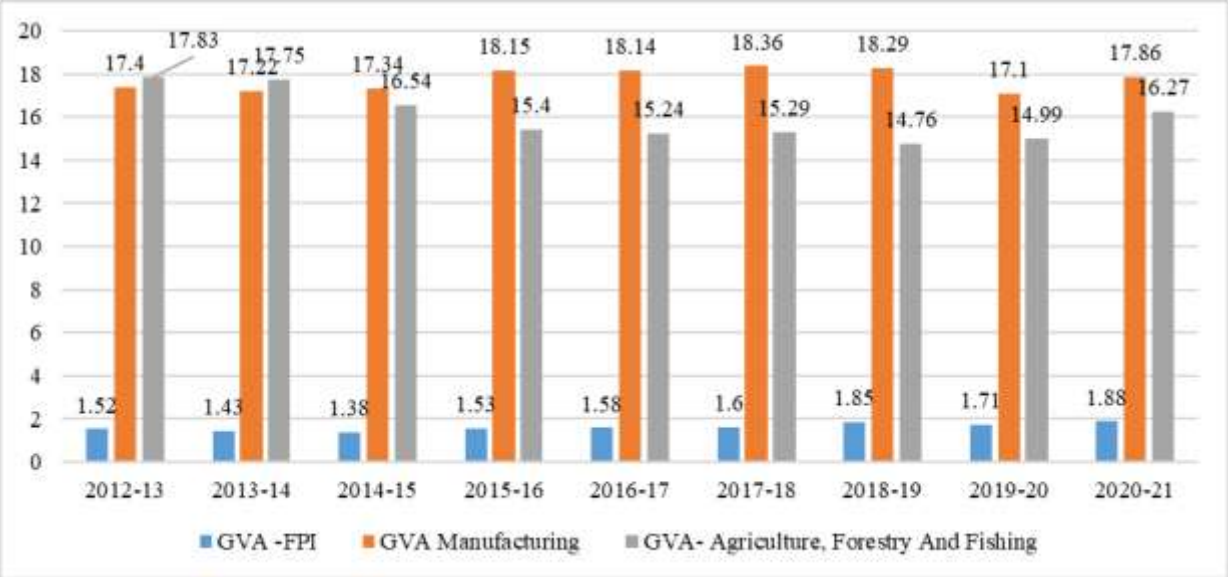
Figure 1: Gross Value Added (GVA) by Food Processing Industries (FPI)

Fig. 1 illustrates Gross Value Added (GVA) trends for Manufacturing, Agriculture, and Food Processing Industries from 2012-13 to 2020-21. It features three distinct lines: blue for Manufacturing, orange for Agriculture, Forestry, and Fishing, and grey for FPI. However, the Gross Value of Manufacturing (GVA) increased significantly from 4.87% in 2012-13 to 23.29% in 2018-19, stabilizing around 22.48% in 2020-21. Agriculture, Forestry, and Fishing's GVA increased from 15.24% to 20.48%, while FPI's GVA remained stable from 1.3% in 2012-13 to 2.37% in 2020-21. In summary, the graph presents linear trend lines for each sector, indicating an overall rising tendency for the observed time period. Manufacturing is growing at the highest rate, with the least growth observed in FPI, Agriculture, Forestry, and Fishing.

3.2 Percentage share in overall GVA of FPI, Manufacturing and Agriculture, Forestry and Fisheries:

Fig. 2 shows the Gross Value Added (GVA) percentages for Food Processing Industries (FPI), Manufacturing, and Agriculture (including Forestry and Fishing) from 2012-13 to 2020-21, with slight volatility. According to the graph, the GVA for Food Processing Industries (FPI) has a relatively stable trend, starting at 1.52% in 2012-13 and rising to 1.88% by 2020-21. The GVA for Manufacturing is consistently higher, starting at 17.40% in 2012-13 and slightly fluctuating, peaking at 18.36% in 2017-18. The GVA for Agriculture, Forestry, and Fishing has

gradually declined, reaching a low of 14.76% in 2018-19. However, there is a slight recovery in the final two years, with the GVA rising to 16.27% by 2020-21.



Source: Annual Report 2022-23, MFPI, (Govt. of India, 2022-23).

Figure 2: (%) share in overall GVA of FPI, Manufacturing and Agriculture, Forestry and Fisheries

The overall GVA for FPI remains low but shows a slow upward trend, while the GVA for FPI remains low with minor fluctuations.

3.3 The registered industries in India and total persons engaged in FPI.

Key parameters of registered industries are displayed in the above table. The table ranks different industries based on variables like the total number of factories operating, fixed capital, employment, and production. Food products are the most prominent industry, determining 15.89% of factories and 16.74% of food products. Similarly, a large number of people engaged in this sector constitute 13.84% of the total production. Although they rank second in terms of both total and active factories, Other Non-Metallic Mineral Products comprise less fixed capital and employment.

Table 2: Key parameters of registered industries in India

Rank	Total No. of factories	No. of factories in operation	Fixed Capital	Total Persons Engaged	Output
1	***Food Products (15.89%)***	***Food Products (16.74%)***	Basic Metals (18.66%)	***Food Products (11.10%)***	***Food Products (13.84%)***
2	Other Non-Metallic Mineral Products (12.03%)	Other Non-Metallic Mineral Products (12.06%)	Coke & Refined Petroleum Products (13.90%)	Textiles (9.80%)	Basic Metals (13.30%)

3	Textiles (7.30%)	Textiles (6.82%)	Other Industries (12.76%)	Wearing Apparel (7.58%)	Coke & Refined Petroleum Products (12.11%)
4	Fabricated metal products (6.88%)	Fabricated metal products (6. 36%)	Chemicals & Chemical Products (8.87%)	Basic metals (7.25%)	Chemicals & Chemical Products (8.83%)
5	Rubber & Plastic Products (6.02%)	Rubber& Plastic Products (5.91%)	Other Non-Metallic Mineral Products (6.65%)	Motor Vehicles, Trailers & Semi Trailers (6.51%)	Motor Vehicles, Trailers & Semi Trailers (7.00%)
Aggregate Total (all industries)	2,46,504	1,98,628	364,135,165	16,624,291	898,330,129

Source: Annual Report 2022-23, MFPI, Govt. of India.

*(Note: Figures in parentheses indicate percentage to total; *Estimates of Fixed Capital and Output are in Rs. Lakh)*

In terms of overall factory count and active factory count, textiles come in third, and they employ a significant number of people. With 18.66% of all fixed capital, basic metals are the industry with the highest capital intensity. Coca-Refined Petroleum products are capital-heavy industry as it ranks third in terms of both production and fixed capital. Rubber & Plastic Products and Fabricated Metal Products come in fourth and fifth place, respectively, but they contribute less of the production and fixed capital. In terms of fixed capital and production, Chemicals & Chemical Products, Motor Vehicles, Trailers, & Semi-Trailers are also significant. On the whole, the totals for all industries combined contribute to 246,504 factories, 198,628 of which are currently in operation, employing 16,624,291 people, utilizing 364,135,165 in fixed capital, and producing 898,330,129 in output.

Table 3: Employment in Food Processing Industry (lakh)

Sector	Food Processing* Industry	Share of Women workers	Overall Industry	(%) Share of FP sector
Registered# (2019-20)	20.32	2.27	166.24	12.22
Un-incorporated (2015-16)**	51.11	12.62	360.41	14.18

**: Includes food products and beverages segments; #: Source: Annual Survey of Industries 2019-20; **Source: NSSO Report No.582 (73/2.34/2) on Economic Characteristics of Unincorporated Non-Agricultural Enterprises (Excluding Construction)in India; NSS 73rd Round (July 2015 - June 2016)*

Table 3 provides data on the employment in the Food Processing (FP) industry compared to the overall industry for two different periods: registered units in 2019-20 and unincorporated units in 2015-16. The Food Processing (FP) industry employed 20.32 lakh people in registered units in 2019-20, accounting for 12.22% of the overall industry employment. In 2015-16, the sector employed 51.11 lakh individuals, representing 14.18% of the total employment across all industries. This data shows that the FP sector significantly contributes to employment in registered and unincorporated industrial sectors, with a higher share in the unincorporated sector.

3.4 Number of Units and Persons engaged in the registered FPI sector:

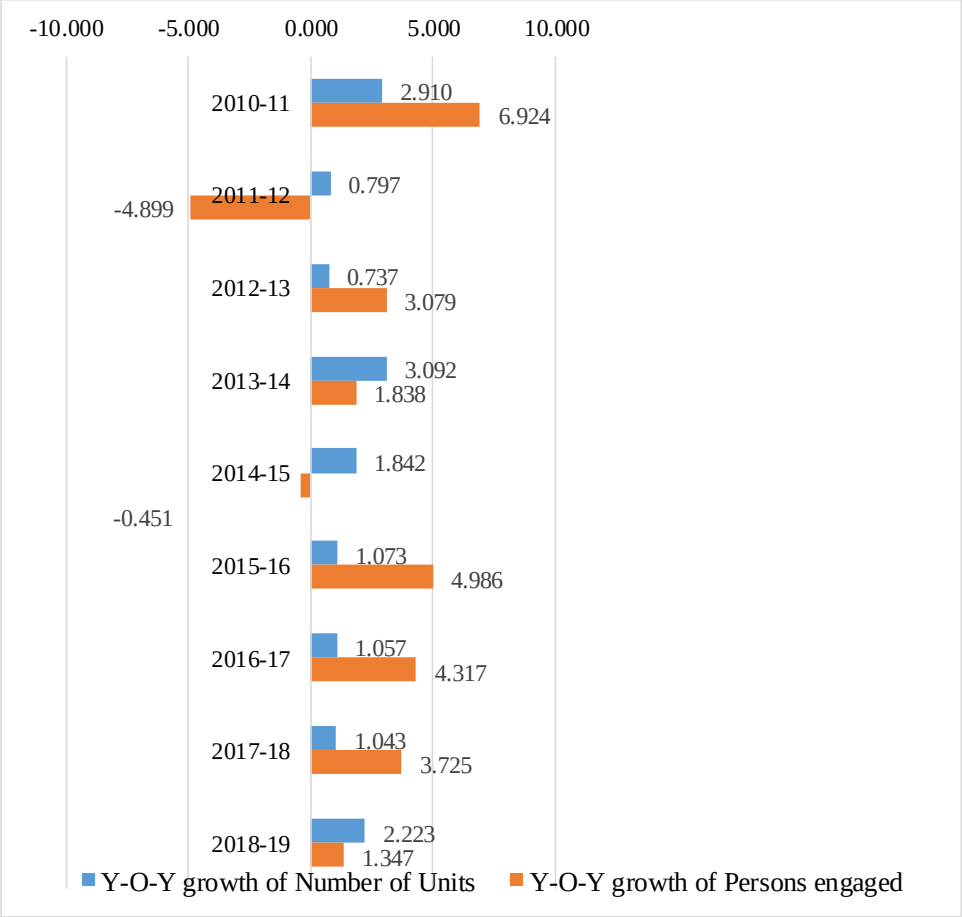


Figure 3: Number of Units and Persons engaged in registered FPI sector and Year on Year growth Rate (Y-O-Y)

Source: Authors' calculations based on the data in the Annual Report 2022-23, MFPI, Govt. of India.

The graph shows the annual growth rates of units and persons engaged from 2010-11 to 2018-19. FPIs require an enormous number of employees; the FPIs that were registered had either directly or indirectly created employment (A. Sachindra Babu, 2021). The number of units showed moderate growth with some fluctuations, starting at 2.910% in 2010-11 and decreasing to 0.737% in 2012-13. It then increased slightly to 3.092% in 2013-14, reaching a peak of 3.092% in 2013-14. The number of

persons engaged declined from 6.924% in 2010-11 to -4.899% in 2011-12, but rebounded to positive levels in subsequent years. The growth rate declined after 2015-16, dropping to 1.043% in 2017-18 before slightly increasing to 1.347% in 2018-19. The graph demonstrates that the number of units experienced more volatility, including periods of sharp declines and growth.

3.5 GVA and Fixed Capital Investment in registered FPI in India

Fig. 5 compares the trends of Fixed Capital Investment (FCI) and Gross Value Added (GVA) in registered Food Processing Industries (FPI) in India from 2010-11 to 2019-20.

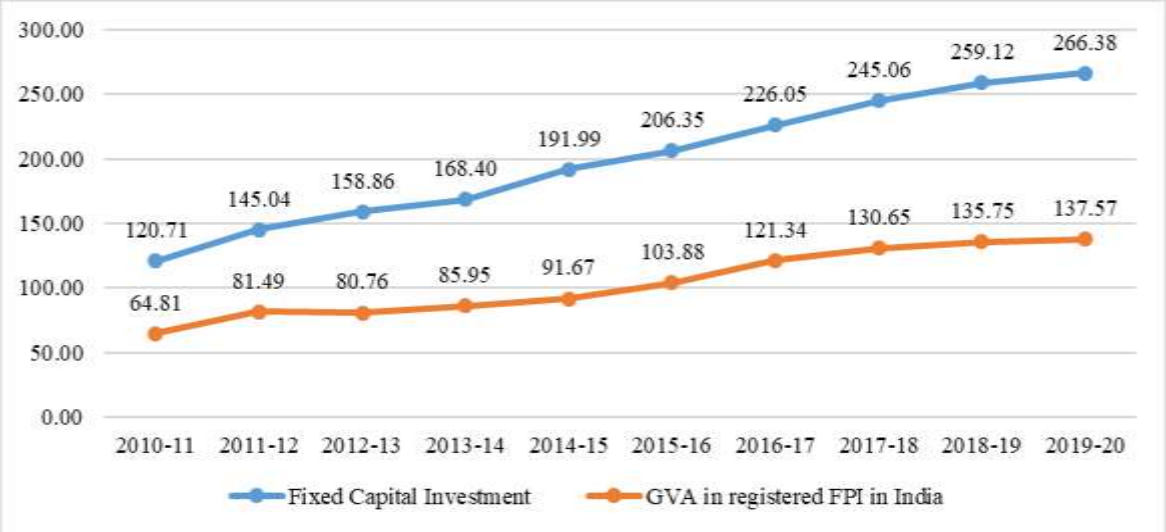


Figure 4: GVA and Fixed Capital Investment in registered FPI in Rs. 000' Crore

The Fixed Capital Investment started at 120,705.11 in 2010-11 and rose steadily each year, reaching 145,038.24 in 2011-12, 158,864.84 in 2012-13, and 168,400.71 in 2013-14. The GVA in registered FPI started at 64,809.79 in 2010-11 and continued to grow modestly, reaching 91,667.63 in 2014-15, 103,878.31 in 2015-16, 121,339.23 in 2016-17, 130,647.39 in 2017-18, 135,745.13 in 2018-19, and finally reaching 137,572.58 in 2019-20. Fig. 4 shows a consistent rise in both Fixed Capital Investment and GVA in registered FPIs in India, with Fixed Capital Investment showing a more pronounced and steady increase than GVA.

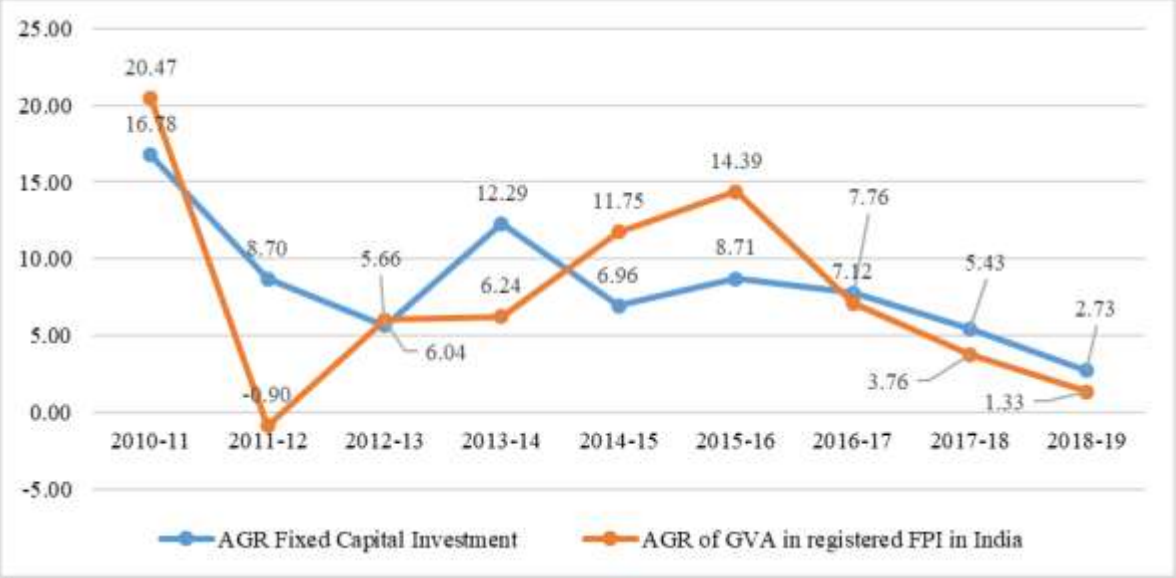


Figure 5: Compound Annual Growth Rate of GVA and Fixed Capital Investment in registered FPI

Ultimately, Fig.4 and Fig. 5 shows that both Fixed Capital Investment and GVA in registered FPIs in India are rising steadily, with Fixed Capital Investment increasing more noticeably and steadily than GVA.

3.6 State/UT-wise No. of Registered and Unincorporated Food Processing Units in India

The table presents data on registered units and unincorporated enterprises across India's states and union territories in the food and beverage manufacturing sector. Uttar Pradesh leads in unincorporated enterprises, with 350,883 units, followed by West Bengal, with 322,590 unincorporated enterprises and 2,067 registered units.

Table 4:State/UT-wise No. of Registered and Unincorporated Food Processing Units in India

Name of the State/UTs	Number of Registered Units	% Share	Number of Unincorporated Enterprises	% Share
Andaman & Nicobar	4	0.01	774	0.03
Andhra Pradesh	**5737**	**13.83**	**154330**	**6.34**
Arunachal Pradesh	29	0.07	145	0.01
Assam	1582	3.81	65,997	2.71
Bihar	896	2.16	**145300**	**5.96**
Chandigarh (U.T.)	19	0.05	656	0.03
Chhattisgarh	1761	4.25	2,975	0.12
D & N Haveli	10	0.02	622	0.03
Daman & Diu	33	0.08	136	0.01

Delhi	175	0.42	14,350	0.59
Goa	103	0.25	2,929	0.12
Gujarat	**2356**	**5.68**	94,066	3.86
Haryana	1066	2.57	24,577	1.01
Himachal Pradesh	172	0.41	21,885	0.90
Jammu & Kashmir	179	0.43	28,089	1.15
Jharkhand	237	0.57	116536	4.78
Karnataka	**2361**	**5.69**	**127458**	**5.23**
Kerala	1743	4.20	77,167	3.17
Lakshadweep	00	0.00	127	0.01
Madhya Pradesh	1018	2.45	102808	4.22
Maharashtra	**2728**	**6.58**	**229372**	**9.42**
Manipur	30	0.07	6,038	0.25
Meghalaya	32	0.08	3,268	0.13
Mizoram	29	0.07	1,538	0.06
Nagaland	20	0.05	3,642	0.15
Odisha	1211	2.92	77,781	3.19
Puducherry	68	0.16	3,482	0.14
Punjab	3267	7.88	63,626	2.61
Rajasthan	956	2.30	101666	4.17
Sikkim	19	0.05	101	0.00
Tamil Nadu	**4995**	**12.04**	**178527**	**7.33**
Telangana	**3989**	**9.62**	80,392	3.30
Tripura	117	0.28	13,998	0.57
Uttar Pradesh	**2127**	**5.13**	**350883**	**14.40**
Uttarakhand	345	0.83	18,116	0.74
West Bengal	2067	4.98	**322590**	**13.24**
Total	41481	100	2435947	100

Source: Annual Survey of Industries (2019–20) and NSSO 73rd Round (2015–16), as cited in the Annual Report 2022–23, Ministry of Food Processing Industries, Government of India.

Maharashtra leads with 229,372 unincorporated and 2,728 registered food processing units. Tamil Nadu and Andhra Pradesh also have high counts—Tamil Nadu with 4,995 registered and 178,527 unincorporated units, and Andhra Pradesh with 5,737 and 154,330, respectively. Bihar, Jharkhand, and Madhya Pradesh show large unincorporated sectors but fewer registered units. Smaller states and UTs like Sikkim, Lakshadweep, Dadra & Nagar Haveli, and Daman & Diu have minimal presence. Nationwide, there are 41,481 registered and 2,459,899 unincorporated units.

3.7 Food Exports in India from 2017 to 2022

The provided data covers agricultural and processed food exports; the data from 2017 to 2022 shows a significant increase in agri-food exports, with processed food

exports growing significantly from $5.27 billion in 2017-2018 to $10.42 billion in 2021-2022. The contribution of cereals has been dominant in the food export of India.

Table 5: India's Food Export (In US $ million)

Commodity Description	2017- 18	2018-19	2019- 20	2020- 21	2021- 22
Meat and Edible Meat Offal.	4,174.6	3,722.5	3,300.7	3,223.3	3,376.7
Fish and Crustaceans, Mollusca and other Aquatic Invertebrates.	6,850.9	6,256.9	6,159.2	5,235.4	6,903.0
Dairy Produce; Birds' Eggs; Natural Honey; Edible Prod. of Animal Origin, Not Elsewhere Spec. or Included.	366.6	538.7	353.6	351.9	619.7
Edible Vegetables and Certain Roots and Tubers.	1,305.6	1,301.7	1,095.6	1,304.5	1,486.1
Edible Fruit and Nuts; Peel or Citrus Fruit or Melons.	1,857.1	1,617.4	1,490.8	1,352.9	1,536.5
Coffee, Tea, Mate and Spices.	3,310.3	3,199.6	3,299.3	3,901.7	4,000.5
Cereals.	***8,151.6***	***8,160.2***	***6,672.4***	***10,103.5***	***12,872.7***
Products of The Milling Industry; Malt; Starches; Inulin; Wheat Gluten.	247.4	321.3	334.7	434.5	661.1
Oil Seeds and Olea. Fruits; Misc. Grains, Seeds, and Fruit; Industrial or Medicinal Plants; Straw and Fodder.	1,647.1	1,640.5	1,773.1	1,821.0	1,746.5
Lac; Gums, Resins and Other Vegetable Saps and Extracts.	1,019.0	1,056.9	822.9	727.3	943.9
Animal or Vegetable Fats and Oils and Their Cleavage Products; Pre. Edible Fats; Animal or Vegetable Waxes.	1,263.9	1,097.6	1,165.7	1,633.2	1,546.8
Preparations of Meat, of Fish or of Crustaceans, Mollusca, or other Aquatic Invertebrates	422.3	432.6	480.1	637.9	771.3
Sugars and Sugar Confectionery.	1,018.7	1,629.2	2,192.1	3,149.7	5,089.4
Cocoa and Cocoa	177.5	192.7	180.1	149.8	153.7

Preparations.					
Preparations of Cereals, Flour, Starch or Milk; Pastry cooked Products.	538.4	535.0	531.2	617.1	632.9
Preparations of Vegetables, Fruit, Nuts or other Parts of Plants.	584.9	588.5	623.6	702.7	751.6
Miscellaneous Edible Preparations.	725.9	770.2	834.5	932.9	1,105.5
Beverages, Spirits and Vinegar.	346.6	325.8	254.8	354.7	332.9
Residues and Waste from the Food Industries; Prepared Animal Fodder.	1,459.7	1,915.2	1,167.5	2,020.9	1,582.8
Agri Food Exports	35,467.9	35,302.5	32,732.0	38,654.7	46,113.3
Processed Food Exports	5,273.9	6,389.2	6,264.0	8,565.6	10,420.0
% Share of Processed Food in Food Exports	14.9%	18.1%	19.1%	22.2%	22.6%
India's Total Export	**303,526**	**330,078**	**313,361**	**394814**	**422000**
% Share of Agri Food Exports in Overall Exports	**11.7%**	**10.7%**	**10.4%**	**13.25%**	**10.93%**

Source: DGCIS, Kolkata obtained from Annual Report 2022-23, MFPI, Govt. of India.

This increased the share of processed food within total agri-food exports from 14.9% to 22.6%. However, individual commodities like cereals, sugars, and confectionery experienced fluctuations in export values. Some categories, like fish and crustaceans, experienced initial decreases and significant increases. Overall, agri-food exports as a percentage of total exports fluctuated, peaking at 13.25% in 2020-2021 and slightly dropping to 10.93% in 2021-2022.

3.8 India's Share in Global Food Trade in 2017-2021

The data outlines India's position in the global food trade from 2017 to 2021, showing a significant increase in both exports and imports. India's food exports rose from $34.42 billion in 2017 to $44.71 billion in 2021, resulting in a 2.48% increase in its share of global food exports.

Table 6: India's Share in Global Food Trade (US $ Billion)

Particulars	2017	2018	2019	2020	2021
World Food Export	1432.27	1493.35	1491.66	1535.40	1804.69
World Food Import	1449.51	1524.46	1527.49	1573.45	1852.15
India's Food Export to World	34.42	34.07	33.62	35.20	44.71
India's Food Import from World	25.09	19.60	19.18	20.37	28.71
% Share of India's Food Export inWorld	2.40%	2.28%	2.25%	2.29%	2.48%
% Share of India's Food Import inWorld	1.73%	1.29%	1.26%	1.29%	1.55%

Source: Annual Report 2022-23, MFPI, Govt. of India.

Meanwhile, India's food imports increased from $25.09 billion in 2017 to $28.71 billion in 2021. Despite these growths, India's share of global food imports remained relatively stable, growing from 1.73% to 1.55%. The data suggests that while India's food export share has slightly increased, its food import share has seen a more modest rise. Overall, the data shows that while India's food export proportion has marginally grown in the global market, its food import proportion is increasing more slowly.

3.9 Foreign Direct Investment (FDI) inflow to Food Processing Industries in India

Foreign Direct Investment (FDI) in India's food processing sector reflects rising domestic and global demand for processed foods. FDI involves international capital inflow to enhance production capacity (Shelly, 2015). The Indian government permits 100% FDI under the automatic route, except for items reserved for micro and small enterprises. In retail trading, 100% FDI is allowed with government approval for food products manufactured or produced in India. Over the past decade, the sector—one of India's top 10 FDI recipients—has attracted around USD 11 billion. In 2022–2023 alone, FDI inflows reached approximately USD 700 million.

The line graph (2014–15 to 2022–23) shows fluctuating FDI in India's food processing sector. It rose from ₹3,164.72 crores in 2014–15 to a peak of ₹6,414.67 crores in 2019–20, dropped sharply to ₹1,670.37 crores in 2020–21 due to COVID-19, recovered in 2021–22, then declined again in early 2022–23.

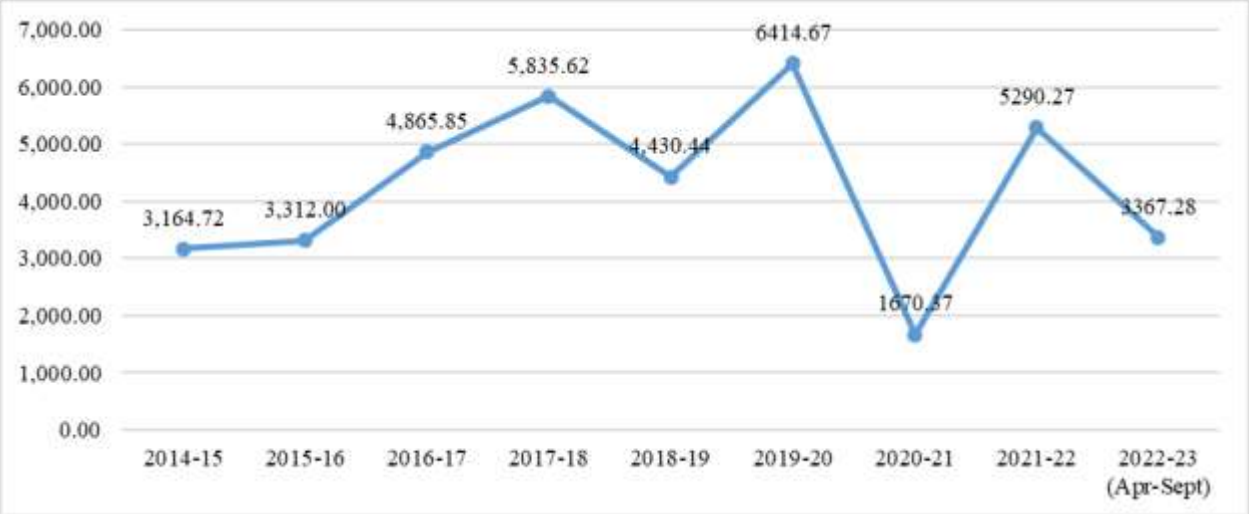


Figure 6: FDI Equity inflow to FPI

Major firms like Nestlé, Coca-Cola, PepsiCo, Unilever, and Cargill have invested significantly. Government initiatives such as the Pradhan Mantri Kisan Sampada Yojana, Make in India, Mega Food Parks, and agri-export zones have encouraged FDI, supported by rising incomes, changing food habits, organized retail, and demand for ready-to-eat products.

1. Conclusion and Suggestions

India's food processing industry plays a vital role in economic development by adding value, reducing post-harvest losses, and improving agricultural efficiency. The sector has seen significant growth due to rising consumer demand for processed foods and strong government support. Programs such as PMKSY, Mega Food Parks, and the Production Linked Incentive (PLI) scheme have accelerated development. With substantial domestic and foreign investments, including over ₹20,000 crore through government initiatives, the sector is poised for further expansion.

To enhance its potential, several strategic measures are recommended:

- Adopt technologies like IoT, AI, and blockchain for efficient supply chain management and traceability.
- Increase investment in cold storage and logistics to reduce post-harvest losses and improve perishable product quality.
- Promote research and development to improve product quality, safety, and shelf life.
- Strengthen linkages among farmers, processors, and retailers to streamline operations and reduce costs.
- Encourage sustainable practices, including energy-efficient machinery and waste recycling.
- Offer financial support for technology upgrades, infrastructure, and skill development.
- Improve credit access for MSMEs in the sector.
- Support export-oriented units with market insights, trade facilitation, and incentives.

- Expand distribution networks and marketing to serve the growing domestic market.

These steps will strengthen food processing and enhance agricultural value addition.

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Unlocking the Potential of Uttarakhand's Industrial Sector: Opportunities, Challenges, and Strategies for Steady Growth

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Abstract

This research paper investigates the industrial development of Uttarakhand, with particular emphasis on its economic prospects, challenges, and strategies to encourage sustainable industrial development. Since its establishment in 2000, the state's industrial sector has experienced significant evolution, contributing approximately 36% to Uttarakhand's Gross State Domestic Product (GSDP) by 2023. Crucial sectors such as pharmaceuticals, food processing, and micro, small, and medium enterprises (MSMEs), which employ over 60% of the workforce, have been pivotal drivers of this progress. Notwithstanding these accomplishments, several challenges endure, including geographical limitations stemming from the region's mountainous terrain, environmental concerns, and the uneven distribution of industrial activity between urban and rural areas. Such challenges have resulted in considerable regional income disparities, with urban centres like Dehradun and Haridwar exhibiting markedly higher per capita incomes than mountainous districts. This study scrutinises the factors propelling industrial growth, assesses the obstacles hindering expansion, and suggests strategies for cultivating a more inclusive and environmentally sustainable industrial ecosystem. Principal recommendations encompass enhancing infrastructure, promoting green technologies, and aligning industrial policies with the state's distinctive ecological context. The paper concludes that, through appropriate policy interventions and infrastructural investments, Uttarakhand can fully realise the potential of its industrial sector, thereby ensuring long-term economic resilience and mitigating regional disparities.

Keywords: *Sustainable Development, Micro, Small, and Medium Enterprises (MSMEs), Ecological Sustainability, Regional Inequalities, Green Technologies.*

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Introduction:

Industrial development, generally defined as the planned growth and diversification of manufacturing, energy, and technology sectors, is critical for strengthening economic resilience, generating employment opportunities, and enhancing social welfare. In Uttarakhand, industrialisation has emerged as a pivotal strategy for economic diversification, reducing reliance on traditional sectors like agriculture and tourism and promoting sustainable development in a region characterised by challenging terrain and significant ecological sensitivity. Industrial

growth in Uttarakhand not only drives the local economy but also serves as a foundation for balanced development, helping bridge the gap between the economically advanced plains and the underdeveloped mountainous regions. Since its establishment as a separate state in 2000, Uttarakhand has made remarkable progress in industrialisation, partly due to favourable policies and incentives to attract investment and support local industries. As of 2023, Uttarakhand's industrial sector contributes approximately 36% to the state's Gross State Domestic Product (GSDP), steadily increasing with the influx of businesses in industries such as pharmaceuticals, food processing, automobile components, and electronics. Major industrial hubs have developed in Dehradun, Haridwar, Udham Singh Nagar, and the state government, with the State Infrastructure and Industrial Development Corporation of Uttarakhand Limited (SIIDCUL) playing a crucial role in facilitating infrastructure, investment, and policy support. Micro, small, and medium enterprises (MSMEs) represent a cornerstone of Uttarakhand's industrial ecosystem. As of the latest data, MSMEs account for over 60% of industrial employment in the state, with over 75,000 registered units employing hundreds of thousands of residents, particularly in semi-urban and rural areas. This focus on MSMEs has enabled Uttarakhand to foster economic stability, increase regional self-reliance, and create job opportunities outside the major urban centers. However, Uttarakhand's industrial development faces numerous challenges impacting its financial sustainability and social inclusivity. The state's rugged, mountainous terrain limits the extent to which industries can expand into the hill districts, resulting in a concentration of economic activity and infrastructure investment in the plains. This disparity is starkly evident in per capita income levels, with economically vibrant districts like Haridwar reporting incomes nearly 2.5 times higher than those in hill districts like Uttarkashi. Additionally, the industrial sector has heightened environmental concerns, especially in ecologically fragile zones, where unchecked development threatens biodiversity and increases the risks of natural disasters. Addressing these challenges requires a balanced and strategic approach that promotes industrial growth while prioritising environmental sustainability and social equity. Recent government initiatives, such as the "Make in India" and "Atmanirbhar Bharat" (Self-Reliant India) campaigns, as well as the National Logistics Policy, offer frameworks for bolstering domestic production, improving connectivity, and streamlining supply chains. These policies hold significant potential to enhance Uttarakhand's industrial productivity and address logistical challenges, particularly in underserved regions. This paper explores the current landscape of Uttarakhand's industrial sector, examining opportunities for growth and identifying the challenges that must be navigated to achieve sustainable development. It also assesses strategic pathways, including policy adaptations and sustainable practices, that can unlock the full potential of Uttarakhand's industrial sector. By analysing these factors, this study aims to provide a comprehensive framework for achieving inclusive, resilient, and environmentally responsible growth across Uttarakhand, laying the groundwork for a

prosperous and equitable future for the region.

Review of literature:

- Since its formation in 2000, Uttarakhand has seen industrial growth driven by government initiatives aimed at regional economic development. The 2003 Special Industrial Package, offering various tax benefits and capital subsidies, is noted by researchers as a key factor in attracting investments in sectors like manufacturing, pharmaceuticals, and tourism (Goel & Singh, 2018). While this policy, among others, has spurred initial growth, it has also led to regional disparities, with benefits concentrated mainly in urban areas such as Dehradun and Haridwar (Kumar, 2019; Sharma & Pant, 2020).
- Scholars like Sharma (2020) indicate that Uttarakhand's policy framework is designed to draw in investment through economic incentives. While these measures have successfully attracted major industries, some research indicates that their impact is primarily urban-oriented, leaving rural regions comparatively underdeveloped (Mishra & Tyagi, 2021). Researchers argue that forthcoming policies should rectify these imbalances by encouraging industrial growth and supporting rural areas.
- A study by Banerjee and Roy (2021) showcases Uttarakhand's pharmaceutical and automotive sectors as prime examples of growth, propelled mainly by supportive policies and the state's proximity to Northern Indian markets. Additionally, the food processing industry, which has significant potential in rural locales, is recognised as an underdeveloped sector that could assist smallholder farmers and increase job opportunities (Bhat & Sharma, 2022).
- Despite industrial growth, Uttarakhand grapples with infrastructural challenges. Joshi (2018) examines the issues stemming from the state's mountainous terrain, which complicates transportation and logistics. Interruptions in power supply further hinder industrial processes, particularly in remote regions. Scholars, including Rana et al. (2021), advocate for focused investments in transport and energy infrastructure to foster sustained industrial activities across the state.
- Research from Sinha (2020) and Tripathi (2019) reveals a notable divide between the industry's requirements and the local workforce's skill sets. Although Uttarakhand's initiatives attract large companies, these studies highlight a deficit in technical and managerial skills within the local population, leading to lower productivity levels. Tripathi recommends collaboration between the government, educational institutions, and industries to develop training programs that address this skills gap, equipping the workforce with the necessary competencies.

Objectives of this study:

- To assess the growth potential of Uttarakhand's industrial sector.
- To identify critical opportunities and challenges and recommend strategies for sustainable growth.

Research methodology:

This study uses a descriptive and analytical approach to examine industrial dynamics in Uttarakhand, focusing on growth patterns, regional disparities, and environmental impacts. Secondary data will be collected from credible sources, such as government publications, economic surveys, academic journals, industry reports, and Environmental Impact Assessments (EIAs). Key sources include the Ministry of Commerce and Industry, Uttarakhand's Directorate of Economics and Statistics, and industry associations. Data analysis will utilise descriptive statistics, including mean, standard deviation, and percentages, to summarise trends and differences. Visualisation tools like charts and graphs will clarify findings. This methodology provides a comprehensive view of Uttarakhand's industrial sector and supports recommendations for sustainable growth. Limitations include dependence on secondary data quality and potential gaps in specific regional coverage.

Growth potential of Uttarakhand's industrial sector:

Uttarakhand's industrial sector holds immense growth potential, driven by its strategic location, rich natural resources, and policy support from the state government. The state has achieved a robust compound annual growth rate (CAGR) of 7.8% in its gross domestic product (GDP) from FY2016 to FY2022. Key industrial areas, such as Hardware, Pantnagar, and Dehradun, house over 2,000 industrial units across seven large industrial estates spanning over 8,000 acres. Manufacturing, a major driver, contributed significantly, with the sector's GDP increasing from ₹81,648 crores in 2021-22 to ₹91,519 crores in 2022-23, marking an impressive growth rate of 12%. The state's investor-friendly policies, including single-window clearance systems and tax incentives under the Uttarakhand industrial policy, have attracted significant investments. Furthermore, the upcoming industrial corridors and logistics infrastructure enhance connectivity and reduce operational costs, positioning Uttarakhand as a promising industrial hub with substantial potential for expansion.

Table 1: Principal industrial characteristics of Uttarakhand

SR.NO	CHARACTERISTICS	2001-02	2003-04	2005-06	2007-08	2009-10
1	Number of Factories (NF)	698	680	900	1,474	2,344
2	Fixed Capital (FC) (₹ Lakh)	1,96,484	2,18,176	4,19,983	12,97,143	32,75,713
3	Productive Capital (PC) (₹ Lakh)	2,70,532	3,07,434	6,83,831	17,53,057	45,11,827
4	Invested Capital (IC) (₹ Lakh)	3,69,401	4,16,984	7,28,703	18,67,733	45,42,013
5	Workers (WK)	27,318	27,582	53,602	97,688	1,88,885
6	Total Persons Engaged (TP)	40,881	41,562	71,098	1,29,587	2,38,795

7	Wages to Workers (WW) (₹ Lakh)	22,013	23,869	34,959	70,784	1,48,014
8	Total Emoluments (TE) (₹ Lakh)	43,494	46,882	66,963	1,35,238	2,89,516
9	Total Input (TI) (₹ Lakh)	4,19,648	5,51,454	11,77,256	23,88,702	59,61,053
10	Total Output (TO) (₹ Lakh)	5,21,434	7,24,880	15,58,013	33,06,579	79,32,138
11	Net Value Added (NVA) (₹ Lakh)	82,485	1,51,439	3,45,669	8,31,620	17,71,775

Sources: *Directorate of Economics and Statistics, Government of the UK; RBI, Handbook of Statistics on Indian States***.**

Table -2: Important Ratios of Principal Characteristics of Uttarakhand

SI. No	CHARACTERISTICS	2001-02	2003-04	2005-06	2007-08	2009-10
1	Fixed capital to invest capital	0.53	0.523	0.58	0.694	0.721
2	Productive capital to invested capital	0.732	0.737	0.94	0.94	0.99
3	Wages per worker (in lakhs)	0.81	0.87	0.65	0.74	0.79
4	Emoluments per person (in lakh)	1.07	1.13	0.95	1.04	1.22
5	Workers to total persons engaged	0.67	0.671	0.75	0.73	0.79
6	Wages to total emoluments	0.506	0.509	0.49	0.52	0.511
7	Total output to total input	1.24	1.31	1.32	1.39	1.33
8	Net value added to total input	1.58	0.274	0.29	0.348	0.31

Sources: *Author's calculation*

The industrial characteristics of Uttarakhand, shown in Tables 1 and 2, indicate a significant increase in industrialisation from 2001-02 to 2009-10. Table 1 reveals that the total number of factories rose from 698 to 2,344, while fixed, productive, and invested capital increased, reflecting growing investor confidence. The workforce has more than doubled, highlighting the demand for labour amid industrial growth, and wages show a positive trend, indicating improved worker conditions. This is supported by Table 2, which shows higher wages and emoluments per worker, suggesting better remuneration. The increasing total output to total input ratio in Table 2 highlights performance, though the net value added to total input remains below one, indicating potential for further enhancement.

The growth rate of the industrial sector of Uttarakhand

Table -3: Growth of MSME Manufacturing Units in Uttarakhand and Their Contribution to Employment

Growth Of Industries in Uttarakhand and Their Contribution to Employment								
Year	No. Of manufacturing units			Total	Employment			Total
	Micro	Small	Medium		Micro	Small	Medium	
2007-08	576	235	20	831	3903	8057	2171	14131
2008-09	468	288	23	779	2483	10462	3319	16264
2009-10	744	340	29	1113	5016	13513	2379	20908
2010-11	838	310	33	1181	4733	9632	2496	16861
2011-12	1015	191	16	1222	4523	5966	1524	12013
2012-13	1053	339	21	1413	4599	8608	1789	14996
2013-14	1245	124	16	1385	5341	2471	1285	9097
2014-15	1294	126	12	1432	5386	2232	409	8027
2015-16	1463	216	16	1695	6064	4638	665	11367
2016-17	1317	321	13	1651	6157	5523	549	12229
2017-18	1245	251	7	1503	5440	4782	477	10699
2018-19	1408	202	13	1623	6399	2958	580	9937
2019-20	1547	176	14	1737	6544	3940	1240	11724

Sources: *Directorate of Industries, Dehradun, Uttarakhand*

Table 3 presents the impact of new manufacturing micro, small, and medium-sized enterprises (MSMEs) on employment generation in Uttarakhand. The data shows that in 2007-08, 831 MSMEs were established, creating 14,131 jobs. By 2015-16, the number of MSMEs increased to 1,695, generating 11,367 employment opportunities. In 2018-19, 1,623 new MSMEs were formed, providing jobs for 9,937 individuals. These trends highlight the effectiveness of industrial policies in fostering growth, attracting investment, and creating significant employment opportunities in Uttarakhand's manufacturing sector.

Table -4: Descriptive Statistics of Manufacturing Units (2007-2019)

Descriptive Statistics of Manufacturing Units (2007-2019)

statistic	Micro units	Small units	Medium units	Total units
Mean	1093.308	239.923	17.923	1351.154
Std. Error of Mean	95.791	20.982	1.992	86.445
Std. Deviation	345.380	75.653	7.182	311.682
Coefficient of variation	0.316	0.315	0.401	0.231
Variance	119287.397	5723.410	51.577	97145.808
Skewness	-0.577	-0.118	0.831	-0.648
Std. Error of Skewness	0.616	0.616	0.616	0.616
Kurtosis	-0.829	-1.220	0.448	-0.494
Std. Error of Kurtosis	1.191	1.191	1.191	1.191

Sources: *Author's calculation*

The data reveals micro enterprises' dominance in Uttarakhand's industrial landscape, constituting **81%** of total units (μ=1,093.31, σ=345.38). Negative skewness (−0.577) and platykurtic distribution (kurtosis=−0.829) suggest early-stage clustering followed by plateaued growth. Small enterprises exhibit moderate volatility (CV=0.315), while medium units face acute scaling challenges (CV=0.401, skewness=0.831). Total units' leptokurtic distribution (kurtosis=−0.494) confirms systemic fragility to micro-sector fluctuations. These patterns indicate policy success in grassroots industrialisation but highlight barriers to enterprise upscaling.

Table -5: Descriptive Statistics of Employment generation (2007-2019)

statistic	Micro units	Small units	Medium units	Total units
Mean	5122.154	6367.846	1452.538	12942.538
Std. Error of Mean	310.865	955.873	257.915	992.994
Std. Deviation	1120.839	3446.450	929.925	3580.292
Coefficient of variation	0.219	0.541	0.640	0.277
Skewness	-0.955	0.699	0.597	0.840
Std. Error of Skewness	0.616	0.616	0.616	0.616
Kurtosis	1.283	-0.269	-0.597	0.538

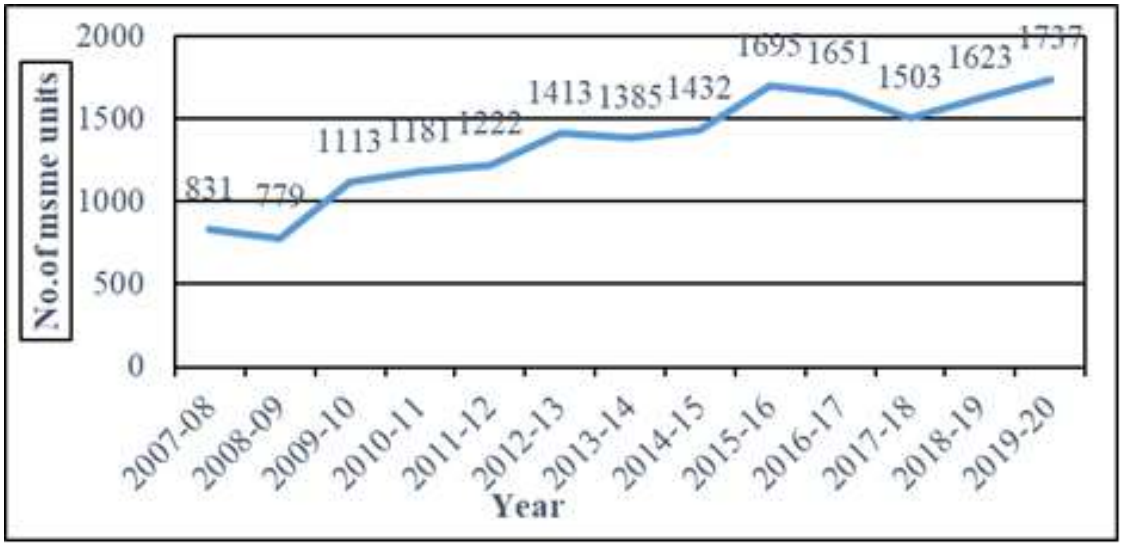
statistic	Micro units	Small units	Medium units	Total units
Std. Error of Kurtosis	1.191	1.191	1.191	1.191
Shapiro-Wilk	0.932	0.936	0.916	0.948
P-value of Shapiro-Wilk	0.360	0.403	0.219	0.565

Sources: *Author's calculation*

Micro enterprises provide stable employment (CV=0.219) but demonstrate declining per-unit efficiency (−0.723 correlation with total jobs). Small enterprises drive systemic volatility (CV=0.541), contributing 49.2% of total employment despite unit count fluctuations. Medium units exhibit disproportionate per-unit impact (μ=1,452.54 jobs/unit) despite operational instability (CV=0.640). Total employment's positive skewness (0.840) underscores recession vulnerability, exemplified by the 39.3% collapse in 2013–14. These findings necessitate rebalancing policy focus toward medium-unit ecosystems for sustainable job creation.

Growth of Manufacturing Units

Figure 1: Growth of the manufacturing sector of Uttarakhand

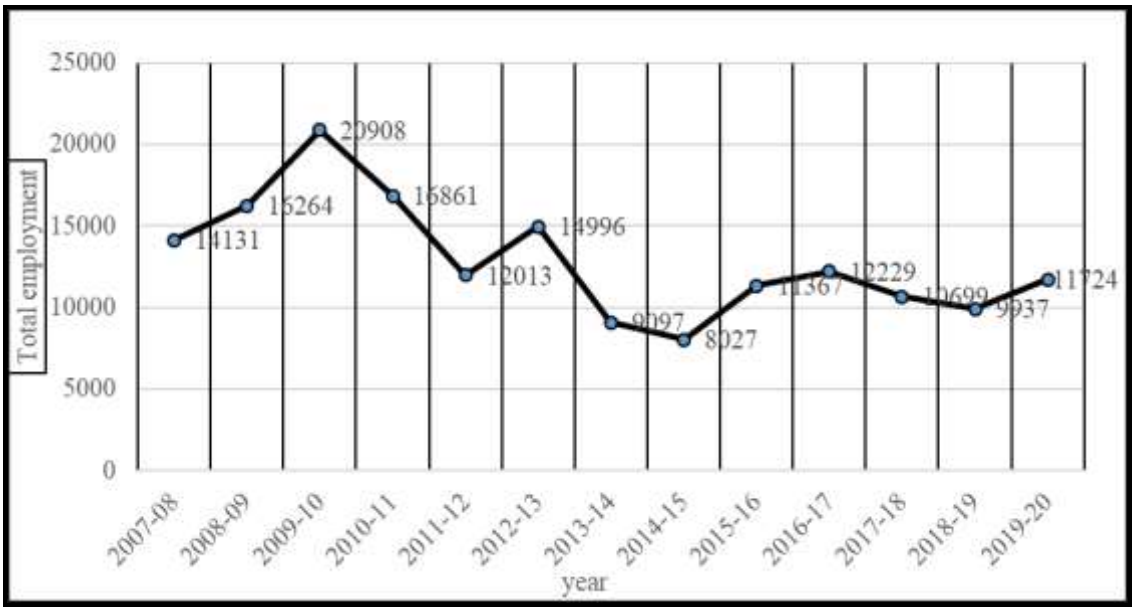


Sources: *Directorate of Industries, Dehradun, Uttarakhand*

Figure 1 illustrates the expansion of MSME manufacturing units in Uttarakhand. The graph indicates a year-on-year increase in the number of manufacturing units in Uttarakhand. It suggests 831 new MSME units were developed in the state during 2007-08. During 2012-2013, 1413 MSME units were established in Uttarakhand, while in 2019-2020, 1737 units were established in the same state.

Employment in MSME manufacturing units

Figure 2: Employment contribution of the manufacturing sector of Uttarakhand



***Sources**: Directorate of Industries, Dehradun, Uttarakhand*

Critical Opportunities and Challenges for Sustainable Growth: Strategies for Long-Term Success

Uttarakhand's industrial sector presents both substantial opportunities and significant challenges, which will determine whether it can achieve sustainable and inclusive growth in the long term. This section explores these opportunities and challenges with relevant data and insights and proposes strategic solutions for fostering long-term economic success.

Prospects for Growth:

1. **Diversification into High-Value industries:** The economic expansion of Uttarakhand has predominantly been propelled by sectors including pharmaceuticals, food processing, and automobile components. Substantial opportunities exist in burgeoning fields such as renewable energy, biotechnology, and advanced electronics. The Uttarakhand Economic Survey 2021 indicates that the state possesses a solar energy potential of over 25,000 MW, positioning it as a frontrunner in clean energy advancement. Expanding these sectors would diversify the industrial foundation and enhance the state's resistance to economic changes. 2021).

2. **Strategic Location for Export and Logistics**: Uttarakhand holds a strategic location to access the major markets in the neighbouring states and foreign trade. Public transportation has improved due to the National Industrial Corridor Development Program and the Udham Singh Nagar Industrial Zone. For instance, the Eastern Peripheral Expressway and Rishikesh-Karnprayag Rail Line projects would improve connectivity and help to cut logistics costs by 10-15 per cent in the future (Planning Commission, 2022).

3. **Strengthening the MSME Sector**: Uttarakhand has more than 60,000 MSMEs in different sectors, including food processing, textiles, and handicrafts, which account for more than 90 per cent of the total industrial units in the state. The MSME sector accounts for around 18 per cent of the state's GDP. According to a study by the Uttarakhand Chamber of Commerce and Industry, it employs approximately one million people. This sector has significant potential to scale with improved access to finance and integration into global supply chains (Uttarakhand Chamber of Commerce & Industry, 2021.

Challenges to Sustainable Development:

1. **Geographical Constraints:** Uttarakhand suffers from logistical bottlenecks and limited infrastructure development due to its challenging terrain. The state's rugged mountainous topography limits the construction of roads and railways, which makes industrial development in the sparsely populated rural areas difficult. For instance, agricultural development is constrained in districts like Chamoli and Pithoragarh due to unreliable transport infrastructure for new industries. Also, the Uttarakhand Disaster Management Authority (2022) classified 20 per cent of the total area of Uttarakhand as prone to landslides or other natural disasters, a dubious undertaking for infrastructure development and investment in certain places.

2. **Environmental Sustainability**: Industrialisation is challenged by the state's ecological sensitivity. Many protected forests, wildlife sanctuaries, and national parks in Uttarakhand prohibit industrial activity in all or part of their region. Highlighting yet another forest state in India, the Forest Survey of India (2021) states that over 70 per cent of Uttarakhand's total area is forested. Therefore, industrial expansion must not dent the environment. For example, the Haridwar Industrial Cluster's air and water pollution levels have been above permissible by more than 30% (Uttarakhand et al., 2021).

3. **Skill Development and Workforce Readiness:** Many industrial sectors of Uttarakhand have grown, but the gap in skills does not match these. The Uttarakhand Skill Development Society 2019 report says that only 35 per cent of the state's workforce is skilled, against the national average of 46 per cent. The lack of correlation between available skills and industry needs indicates state industrial growth. Pharmaceuticals and automotive manufacturing industries require a highly skilled workforce that can work on state-of-the-art technologies. Specialised training programs must be developed to bridge the skills gap, and technical education institutions should be established to cater to these industries (Uttarakhand et al., 2019).

Challenges to Sustainable Strategies for Long-Term Growth

1. **Infrastructure Development and Connectivity:** Infrastructure improvement in Uttarakhand's remote areas should be a top priority. The Uttarakhand Integrated Transport Policy (2020) focuses on mobilising road connectivity, all-weather roads, and linking rail to promote industrial growth in the undeveloped berths. It is progressing with funding of ₹4,000 crore allocated for road and rail projects in 2021. Also, it should encourage the participation of the private sector in developing

industrial parks, which, as an infrastructure for emerging industries in remote districts, will be reliable.

2. **Promotion of Green Technologies and Sustainable Practices:** The state can foster industries looking towards clean, sustainable production and may leverage its renewable energy potential. For instance, these industries within the Haridwar and Udham Singh Nagar areas can migrate to solar or wind energy, a hugely viable option in either of these states. The 5,000 MW of solar power the Uttarakhand government wants to generate by 2030 has already been launched under the Uttarakhand Solar Energy Policy 2013. This will ensure that Uttarakhand's industrial growth will not occur at the cost of the environment. This can be achieved through incentives for green manufacturing through grants and tax exemptions.

Conclusion:

Uttarakhand's industrial sector contributes 36% to the GSDP, with a 7.8% CAGR from FY 2016-2022. Key sectors like pharmaceuticals, food processing, and MSMEs—employing over 60% of the workforce—drive growth. However, challenges such as geographical constraints, environmental concerns, and a skills gap persist. Addressing infrastructure deficits, promoting green technologies, and enhancing workforce training are essential for sustainable, inclusive growth. Strategic initiatives like expanding industrial corridors and integrating MSMEs into global supply chains will be key to fostering long-term development across the state.

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Digital Solutions in Local Government Finance: Driving Sustainable Development through e-Governance Innovation

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Abstract

Digital technologies are vital in numerous functions within local government tasks like digital records management, data analytics, and online service delivery for informed decision-making. Appropriate digital technology strategies can significantly improve effectiveness, accountability and efficiency in establishing transparent digital reporting systems. Indeed, while acknowledging these challenges, it's essential to recognize they represent only one facet of the broader spectrum of obstacles faced by local governments in technology adoption, factors like inadequate expertise in technology integration, difficulties in allocating resources effectively and uncertainties surrounding the implementation of strategies stand out prominently. The paper used secondary data to achieve the research objective. Governance has evolved through different phases traditional, new public management, bureaucratic, participatory governance and collaborative. A notable research gap within the context of technology adoption among local governments. The paper aims to enhance a comprehensive study regarding Agenda 21, which outlines several concrete strategies to achieve sustainability. Substrates of sustainability (finance, social, economic and environmental) in planning practice. Driving forces, conditions, responses, impacts and a detailed summary of the governance paradigm of conditions and influencing factors. Findings can significantly impact the direction and success of digital technology adoption for local governments.

Keywords: *Sustainability, Local Governance, digital financial inclusion, participatory governance and collaboration.*

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Introduction

The COVID-19 pandemic has slowed progress toward achieving Sustainable Development Goals by 2030, impacting areas like education/ economic disruption, food security& hunger healthcare challenges and environmental and climate actions. Investments in achieving Sustainable Development Goals fall short, with most funds still geared towards linear economic models, neglecting sustainable, circular practices needed for long-term success. Stable and developed economic policies entities demonstrate higher performance than unstable regions and economies, revealing a gap worsened by consistent underinvestment in low/middle-income countries. In 1987, the Brundtland Commission defined Sustainable Development as meeting present needs without compromising future generations. Agenda 21 acts as a guide for achieving

economically, socially and environmentally sustainable development.

The doctrine of sustainable development and local bodies traces back to debates on economics and public finance.

Sustainable Development and Local Bodies: Historical Concepts, Progress and Prospects:

Historical background	Progress & Prospects
Amartya Sen's Capability Approach (1970-1980s): individual Capabilities and freedom in development	**Infrastructure and resource management:** Renewable energy adoption, water conservation and waste management.
Joseph Stiglitz Inclusive growth (1990s to present): Economic growth benefits all segments of society.	**Community engagement and progress:** driving agents in policies and process.
Elinor Ostrom Common Management (1990s -2000s): Community-based resources management particularly in local contexts.	**Partnership & collaboration:** by local govt. with NGOs, businesses or others to promote SDGs
Nicholas Stern climate economics (2000s to present): Economic risks of climate change and importance of proactive measures including local-level.	**Measurable impact and outcomes:** on local government, social and economic well-being. Quantify changes in carbon footprint reduction, poverty alleviation and economic growth etc.
Jeffrey Sachs SDGs (2010 to present): global SD efforts until 2030.	**Long-term Sustainability planning:** Integrated planning and decision-making processes. Evaluate strategies to ensure progress and resilience.
Kate Raworth Doughnut Economics (2010 to present): balance between environmental sustainability and social equity with economic models.	**Education initiatives& Awareness Initiatives :** contributed to behavioral changes and increased awareness.
Hernando de Soto's property rights and development(1980-1990s): fostering economic growth including Local levels.	**Innovation and technology adoption:** Advancements have facilities progress in sustainability efforts.
Muhammad Yunu's microfinance and social business (1970s to present): poverty alleviation & local economic development.	**Challenges and Roadblocks :** limited resources, conflicting interest, lack of public awareness, regulatory hurdles and potential solutions.
Mariana Mazzucatos mission Oriented Innovation (2010 to present): government-led missions to address societal challenges, including local sustainability goals.	**Inclusive economic Development**: fostering green jobs, supporting local business that prioritize sustainability, creating economic opportunity within a sustainable framework
Thomas Piketty's wealth and Income Inequality (2010 to present): Its implication for sustainable development.	**Circular Economy and resource optimization:** optimize resources, minimize waste and promote recycling and upcycling initiatives
John Elkington's triple bottom line(1990s	**Vulnerable and Marginalized groups:**

to present): impacts in decision -making , applicable to local governance practices.	analyses the inclusivity of SDG and address the needs / challenges in achieving goals.
Esther Duflo and Abhijit Banerjee Experimental Economics for poverty alleviation (2000s to present): evidence based approaches relevant for local level interventions.	**Youth and civic Engagement :**Volunteerism and community participation in driving SDG agendas at the local level.

Review of Literature

Digitization has a pivotal role in fostering closer ties between citizens and the state, effectively narrowing the divide that once existed between the demand for and supply of quality public services (Xavier and Choi 2021). The digitalization of service delivery is significantly reshaping the landscape, altering their participation in governance. This shift eliminates paper- based transactions and consolidates public information access points. Process of implementation, designing, delivering and evaluating public policies as highlighted in the (World Bank Report 2019). The 11th report by India's Second Administrative Reforms Commission, "Promoting Digitalization and e-Governance -way Forward", utilization of ICT including AI, mobile computing etc. and integrations aims to transform interactions with govt. arms, businesses and citizens enhancing the delivery of govt. services facilitate better transactions with the community & empower through information access. The outcome includes revenue growth, transparency and reduced financial cost and a clampdown on corruption. Digitalization presents an opportunity to revolutionize governance by transcending mere computerization of government processes. It aims to achieve efficiency in public service delivery, empower citizens and establish transparency and accountability. At its core, it prioritizes the needs and welfare of the people (Chandrashekhar, 2008). Digitalisation has the following benefits (Shareef, Jahankhani & Dastbaz 2012) and World Bank)-

Bhoomi project in Kerala Digitized land records, enabling citizens to access and manage their land- related info. Online reducing corruption
Lodvani in Uttar Pradesh lodge grievances and access land records, providing a platform for addressing citizen concerns and maintaining land-related information digitally.
The Gyandoot project in MP issuing certificates to citizens, the process of accessing and obtaining essential documents and services.
MCA 21 by Ministry of Corporate Affairs, Govt. of India Focusing on electronic filling, making corporate govt. more efficient.
procurement project in Andhra Pradesh ensuring transparency and efficiency in govt. procurement activities. Smart Gov by AP using smart technology.
Khajane project in Kerala: financial transparency and administration

Technology plays a crucial role in fostering citizen participation, especially in democratic nations like India. It serves as an empowering tool, particularly for marginalized sections of society, by offering access to information and thereby enhancing political equality. Processes like the computerization of land records, politically and socially neutral, contributed significantly to this cause. Promote a more equitable and informed society *(Vaddiraju and Manasi 2017)*. the UN survey 2022 underscores that digitalization stands as a cornerstone in establishing resilient, accountable, socially inclusive organizations. It aligns with the goals outlined in SDG 16, aiming to build inclusive and peaceful societies, ensure access to justice for all citizens and establish effective, accountable and inclusive institutions at all levels within the nation. Additionally, SDG 17 aims to boost global partnerships for sustainable development, emphasizing collaboration among countries -both developed and developing -to ensure that no individual is left behind. The 2030 agenda for sustainable development calls for comprehensive partnerships among governments, the public and private sectors and civil society to collectively work towards these goals, as outlined by the UN in their SD agenda. ICT development bolsters democratic values.ICT development bolsters democratic values for fostering accountability, responsiveness and transparency in governance. Its utilization builds trust among govt., private sector and society promoting an accountable and open system *(Cordella 2005)*.

Research Objectives

This paper is designed to thoroughly analyse various issues and approaches linked to the doctrine of sustainable development goals and local bodies traced back to debates on economics and public finance.

1) The paper examines Agenda 21, Digital Era Significance, Challenges and Steps for Empowering Local Bodies.

Data Source and Methodology

The paper used secondary data & information to achieve the research objective. Secondary data on various parameters has been collected from sources such as publications. Agenda 21 advocates for sustainability through transport reform, urban revitalization and technology. Development Index, an online service index divided into sub-parts comprising. This paper explores the meaning, significance, and challenges and suggests steps for empowering Local Bodies.

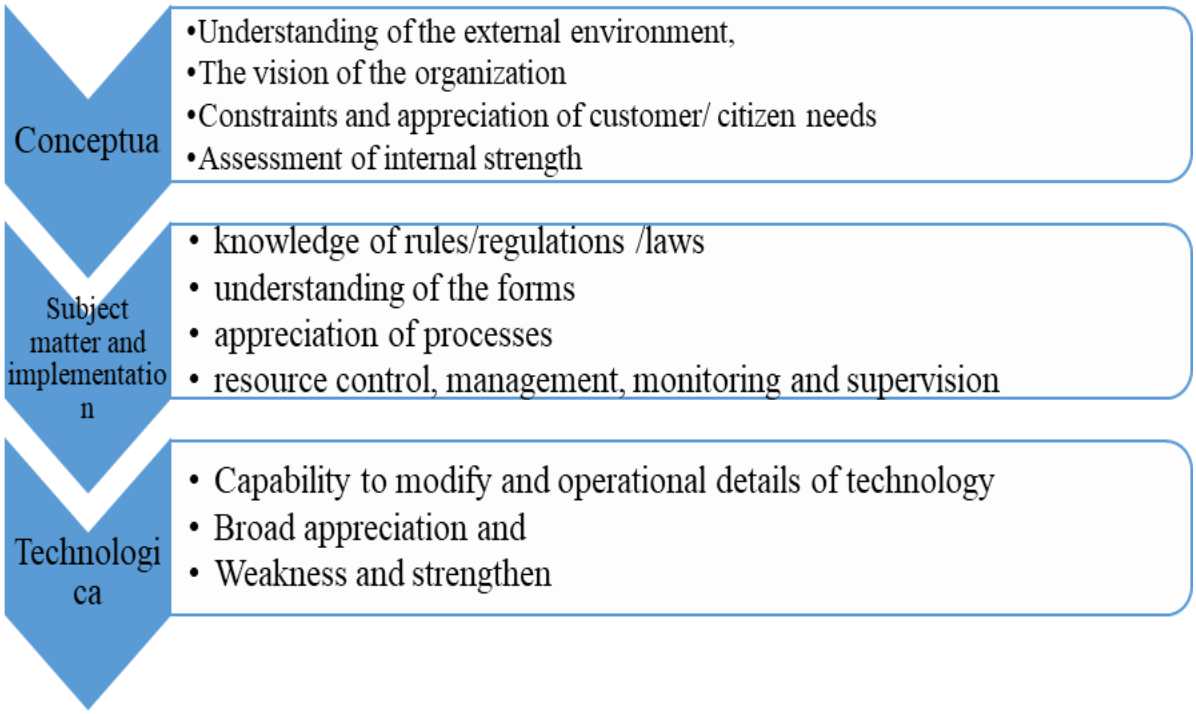
Agenda 21 advocates for sustainability through transport reform, urban revitalization and technology. It urges Governments to improve rural and urban areas, construct resilient cities promote energy efficiency, job creation and non-polluting technologies. Additionally, it emphasizes renewable energy such as solar, biomass and hydroelectric, public and eco-friendly transport, minimized urban sprawl and land use protection for environmentally sensitive areas. Digital technology has indeed brought about a significant revolution in people's daily lives worldwide. The evolution and advent of technological innovations such as AI,

progression from Web 1.0 to 5.0, cloud technology and IoT have fundamentally transformed the landscape of governance, both in the private and public sectors. Governments worldwide are increasingly embracing digital strategies to manage the day-to-day operations of their respective nations effectively. Streamlining the delivery of public services is a way of increasing accessibility and efficiency. The digitization of public services has been instrumental in fostering trust among citizens towards their governing bodies. This shift towards digital platforms has not only expedited service delivery but has also contributed significantly to establishing accountable and transparent relationships between the government and the govt.& its constituents. Consequently, enhancing public administration & governance agenda is crucial for fostering SDGs and socio-economic development within nations.

The pervasive influence of the digital era has revolutionized operations -

- Among government entities, commercial enterprises and citizens.
- Reorienting administrative practices to prioritize citizen-centric approaches: redefined framework through public services are rendered.
- Transparent and accountable financial processes, digitalization promotes ethical conduct and economic stability & growth.
- An inclusive and participatory governance model provides them with easier access to information and services.

The Capabilities Requirement



Sustainable Development Framework: Elements of Agenda 21

Sustainability Dimension	Criteria	Practices / Means (in Local Bodies Context)
1. Economic (Financial) Sustainability	- Development - Trickle-down Growth - Productivity	- Implementing policies ensuring essential services and equitable access (education, healthcare, sanitation, shelter) - Promoting civic engagement and local economic development - Enhancing productivity through efficient use of resources - Creating inclusive economic opportunities at the grassroots level
2. Social Sustainability	- Equity - Participation - Cultural Identity - Sharing - Accessibility - Institutional Stability - Empowerment	- Provision of social subsidies and wellness programs - Promoting land reforms and sustainable livelihoods - Addressing economic disparities through inclusive policies - Ensuring gender and social equality - Empowering local institutions and communities - Enhancing participation of all stakeholders - Promoting accessibility to resources and services for all individuals - Respecting and preserving cultural identity
3. Environmental Sustainability	- Biodiversity - Carrying Capacity - Ecosystem Integrity	- Indigenous and community-based resource management - Conducting landscape and ecological surveys - Promoting biodiversity and ecological balance - Sustainable land-use planning - Identification and management of environmental constraints - Ecosystem sensitivity and habitat impact assessments - Integrating eco-principles in local planning - Adapting environmental laws to suit local needs while maintaining ecological objectives - Encouraging community participation in conservation efforts

Digital Era Significance, Challenges, and Empowering Local Bodies

1. Key Aspects of Digital Governance

Digital governance in the current era is driven by four foundational pillars that redefine the functioning of public institutions and citizen engagement:

- **E-Administration**: Refers to the modernization of state operations through the use of Information and Communication Technology (ICT), aimed at enhancing the efficiency of

record-keeping and internal government processes.

- **E-Service**: Involves the digitization of public services to ensure easier, faster, and more inclusive access for all citizens via online platforms.
- **E-Governance**: The broader application of technology to streamline administrative mechanisms, deliver services efficiently, and ensure transparency and accountability in public dealings.
- **E-Democracy**: Emphasizes the use of digital tools to promote citizen involvement in democratic processes, policy formulation, and governance, thereby making democracy more participatory and responsive.

2. Significance of Digital Transformation in Empowering Local Bodies

a) **Efficient Information Access -** Digital systems allow for streamlined accumulation, storage, and retrieval of data, improving both administrative efficiency and public service delivery.

b) Citizen Empowerment - Technological advancements offer citizens easier access to policies, programs, and grievance redressal mechanisms, encouraging greater public participation and inclusion in decision-making processes.

c) Strengthening Democratic Values - Digitalization supports democratic ideals by promoting inclusive governance structures that are transparent and participatory, especially at the grassroots level.

d) **Enhanced Service Delivery -** The automation of services ensures timely delivery and easy accessibility to vital public welfare schemes and services.

e) **Trust, Transparency, and Accountability -** Digital transactions create auditable trails that strengthen public trust in institutions, reinforce transparency, and improve sectoral credibility.

3. Challenges in Implementing Digital Governance

a) Policy Coordination and Stability - There is a pressing need for cohesive and sustained policy efforts across economic, social, and digital spheres to ensure the success of digital initiatives.

b) Capacity Gaps- Skilled manpower remains inadequate. Bridging the gap between existing and required technical capacities and implementing skill enhancement policies is a major challenge.

c) Resistance to Change - Traditional bureaucracies often resist transparency and accountability, fearing a loss of control in the transition to digital systems.

d) Digital Divide and Inequality- Ensuring equitable access to digital services across rural and economically backward regions remains a major obstacle due to disparities in connectivity, digital literacy, and access to devices.

e) Technological Risks and Security - Cyber threats, data breaches, and inadequate infrastructure expose users to security risks. There is a growing need for compliance with international data privacy and security standards.

f) **Strategic Misalignment -** Many digital projects fail due to a lack of alignment between organizational needs and technological capabilities, leading to poor outcomes and inefficiencies.

4. Key Issues Affecting Digital Governance

- **Project Mismanagement**: Costly digital initiatives often fail to deliver measurable benefits due to poor project planning and monitoring.
- **Lack of Leadership and Political Will**: The absence of motivated leadership at senior administrative and political levels impedes digital transformation.
- **Public-Private Collaboration Complexities**: Balancing private sector involvement with citizen welfare in terms of pricing, access, and terms of service requires careful negotiation.
- **Clarity in Ownership and Strategy**: Without clear internal and external ownership of projects, accountability and success remain elusive.
- **User Diversity and Engagement**: Success depends on understanding and addressing the varying digital capabilities and expectations of users, including citizens, bureaucrats, and service providers.

5. Strategic Initiatives and Implementations:

To address these challenges, several digital initiatives and platforms have been introduced:

- **UMANG (Unified Mobile App for New Age Governance)**: Offers a single platform for accessing government services online.
- **DigiLocker**: A secure cloud-based platform for storing and retrieving citizen documents.
- **E-District Mission Mode Project**: Delivers services such as birth and marriage certificates, pension applications, and online tax payments.
- **Common Service Centres (CSCs)**: Provide digital services in rural areas through Village Level Entrepreneurs, including loan applications and scholarship registrations.
- **MyScheme**: A unified portal offering comprehensive information on government schemes, eligibility, and application procedures.
- **Meri Pehchaan (National Single Sign-On)**: Enables users to authenticate across multiple government portals with a single identity.
- **Co-WIN Platform**: Successfully managed COVID-19 vaccination registrations, certificate downloads, and appointment scheduling.
- **DBT (Direct Benefit Transfer)**: Facilitates Aadhaar-based transfer of subsidies directly into beneficiaries' accounts, reducing leakages and enhancing efficiency.
- **DIKSHA**: A digital infrastructure for school teachers to access training and knowledge resources.
- **MyGov**: A platform that fosters two-way communication between citizens and government, allowing participation in policy formulation and grievance redressal.

6. State-Level Success Stories

- **Karnataka's Bhoomi Project**: Computerization of land revenue records, improving transparency and accessibility.
- **Andhra Pradesh Property Registration System**: Digitization of land registration procedures to reduce delays and corruption.

- **E-Sewa Kendras**: Established across several states to offer digital access to various certificates, tax services, and government schemes.

7. Way Forward: Building a Digital-Ready Future

To fully realize the potential of digital governance at the local level, the following actions are essential:

- **Skill Development and Capacity Building**: Regular training of government staff and awareness among citizens.
- **Infrastructure Strengthening**: Reliable digital infrastructure and internet connectivity, especially in rural areas.
- **Security and Privacy Reforms**: Enforcing robust data protection measures to safeguard citizen information.
- **Integrated Planning and Execution**: Cross-departmental coordination and long-term vision for scalable and sustainable digital transformation.

Conclusion

Creating an environment conducive to successful e-governance demands proactive govt. support and political leadership. Raising citizen awareness through public camps is vital, spurring demand for services. Identifying electronic and digitalization categories- information access, financial transactions and tax payment is crucial. Coordination between central and state IT departments aids technical support. Policies must consider citizens lacking internet access, ensuring they are not excluded from digitalization. Continuous process reengineering, driven by citizen feedback, is key to maintaining citizen-centric administration. The public sector should learn from private sector ICT successes via exchange programs and localized awareness campaigns. These projects and initiatives reflect large trends toward digitalization and the use of technology to improve governance streamline processes and enhance transparency & efficiency in various administrative functions. Addressing these challenges demands a concerted effort involving policy revision, skill development etc towards success. Digitalization integration has transformed public service delivery, transparency and participation. Shift spans various technologies bridging gaps between citizens and govt, ultimately revolutionizing the quality and accessibility of services.

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The Impact of the Start-up India Program on Entrepreneurship Development in Maharashtra

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Abstract

Startup India, an initiative of the Government of India launched in 2016, promotes entrepreneurial growth through the relaxation of rules, financial incentives, and enhanced infrastructural facilities. It has experienced high entrepreneurial activity in one of India's most significant economic centres, Maharashtra. This research critically examines the Impact of the Startup India initiative on the entrepreneurial environment of Maharashtra, with an emphasis on key determinants such as startup creation, access to capital, the efficacy of policy, and structural factors. In addition, the study also discusses the role of the micro, small, and medium Enterprises (MSMEs) sector, which has been the driving force behind economic growth and employment generation in India. The MSME sector plays a significant role in industrialising backwards and rural regions, promoting regional balance, and achieving balanced wealth distribution. In recognition of its role, the Micro, Small and Medium Enterprises Development Act 2006 was implemented to overcome policy impediments, increase investment ceilings, and unify the manufacturing and service sectors under one umbrella. Using a mixed-methods study design, this research paper compares the startup environment in Maharashtra with best practices in India and current inefficiencies. The study identifies the positive reforms introduced by Startup India and the current shortcomings that necessitate policy adjustments. It also examines emerging trends on the horizon, including technological Innovation, and places Maharashtra on the Indian startup map. The research findings offer valuable insights for enhancing policy effectiveness and promoting an entrepreneurial culture in Maharashtra.

Keywords: *Startup India, MSMEs, Business culture.*

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Introduction

Maharashtra is the financial and technological capital of India, and it has benefited extensively from this venture. The state boasts a robust infrastructure, a professional workforce, and an investor-friendly setup, resulting in tremendous business growth over the past few years. Startup India has played a significant role in this growth by providing startups with much-needed assistance, including easier regulations to adhere to, access to capital, and safeguarding of their Ideas. Entrepreneurship is of great importance in boosting the economy as it leads to the creation of new ideas, Jobs and a robust economy. Recognising its potential to drive change, the Indian Government launched a programme to develop startups. This grand initiative aims to simplify business operations by reducing bureaucratic

hurdles, providing financial support, and encouraging new and innovative ventures with numerous benefits, including tax breaks, incentives, and streamlined regulations. Despite these advancements, the Startup India program is effective in assisting new businesses in Maharashtra. It remains to be examined whether the program has assisted new businesses in expanding; however, issues such as market competition, policy implementation, and Maharashtra's position in India still need to be addressed. This research will closely examine how the Startup India program influences business expansion in the state of Maharashtra.

It will also compare the startup environment in Maharashtra with that of leading Indian hubs to identify promising ideas and areas for improvement. This research aims to provide valuable insights into the effectiveness of the program and identify opportunities for further improving the business environment in Maharashtra.

Literature Review

The Startup India initiative has been a subject of extensive research since its inception in 2016, particularly regarding its influence on entrepreneurial ecosystems at the state level. This review consolidates key scholarly insights related to Maharashtra's startup growth, the role of MSMEs, policy frameworks, and the broader entrepreneurial environment.

1. Impact on MSMEs and Startup Growth

Manikandan (2021) highlighted that the Start-up India initiative significantly benefited micro, small, and medium enterprises (MSMEs) in Maharashtra. Through incubation facilities, subsidies, and digital incentives, many small enterprises successfully scaled their operations, reflecting the efficacy of institutional support mechanisms. Complementing this, Nager and Ahmad (2024) observed that Maharashtra's emergence as a start up hub was driven by venture capital availability and robust incubation support.

2. Policy Support and State Initiatives

Tamboli and Nawathe (2020) analysed Maharashtra’s supportive policies, such as sector-specific incentives and ease of doing business, which have positioned the state among India’s leading entrepreneurial ecosystems. Likewise, Godha et al. (2019) examined how Maharashtra’s FinTech policy under Startup India provided fiscal benefits, mentorship, and enhanced the ease of business, promoting a culture of innovation.

The Maharashtra State Innovative Startup Policy 2018 was also found to be instrumental in creating a more structured and enabling startup environment. This was further supported by Pohance and Sawant’s (2023) comparative study of India and China, which showed that Maharashtra’s policy reforms and funding schemes significantly improved its startup ecosystem.

3. Challenges Within the Ecosystem

Despite these policy advances, several researchers pointed out systemic barriers. Munda and Thangavel (2024) identified persistent challenges such as regulatory bottlenecks, funding difficulties, and market saturation, which continue to hinder startup sustainability in the state. These were echoed by other studies that called for more inclusive strategies to reach rural and semi-urban regions.

4. Gender Inclusivity and Sectoral Insights

Burghate et al. (2023) examined the gendered impact of Startup India, reporting a rise in women-led startups in sectors such as retail, technology, and social enterprise. Their study underlined the positive implications of targeted government

programs on gender inclusivity within entrepreneurship.

5. Digital Transformation and Innovation

Nair (2021) focused on how Maharashtra's digital governance and tech-forward initiatives fostered startup growth in the technology sector. Innovations in digital payments, incubation centres, and e-governance were seen as key enablers of startup dynamism, especially in urban centres.

6. Economic and Employment Impact

Goyal and Dangwal (2022) assessed how Maharashtra-based startups, under the influence of the Startup India Action Plan, contributed significantly to job creation and economic diversification. This aligns with broader national objectives of economic resilience through entrepreneurship.

Collectively, the reviewed literature affirms that the Startup India initiative, bolstered by state-level policy interventions, has positively influenced Maharashtra's entrepreneurial landscape. Key contributions include enhanced access to capital, infrastructural support, and the proliferation of incubation centres. However, challenges such as limited penetration in Tier 2 and Tier 3 cities, regulatory complexities, and uneven digital outreach remain. Addressing these concerns through targeted reforms and inclusive strategies is essential for sustaining Maharashtra's momentum as a leading startup hub in India

Research Objectives

1. Explain the contributions of incubation centres, accelerators and government policy programs towards developing the growth of startups.
2. Review the availability and effectiveness of the financial incentives in the scheme.
3. Examine both the quantitative and qualitative effects of the Startup India initiative on the establishment of new enterprises in the state of Maharashtra.
4. Recognise the structural and functional issues that hinder entrepreneurial success.
5. Explain the Impact of emerging technologies on Maharashtra's business culture.

Research Methodology

This research employs a mixed-methods study design to provide a critical analysis of the Impact of the Startup India scheme in the state of Maharashtra. The research design includes. Secondary Data Analysis entails examining government reports, Startup India performance reviews, industry reports, and scholarly studies to learn about the program's success and its Impact on the startup ecosystem in Maharashtra. A comparative analysis of the Maharashtra startup ecosystem will be conducted with other top startup ecosystems in India. This comparison will identify the strengths, weaknesses, and areas for improvement in Maharashtra to enhance its startup ecosystem. By employing these strategies, this research aims to provide a comprehensive perspective on the role of Startup India in promoting Entrepreneurship development in Maharashtra.

The Startup India Initiative, A policy overview

The Startup India Initiative, launched by the Government of India in 2016, aims to foster a thriving startup ecosystem through support, incentives, and a conducive regulatory environment. Although the initiative was initially directed towards digital and technology-

based startups, it has since been extended to manufacturing, social enterprises, and healthcare. Additionally, startups aim to expand their reach beyond metropolitan cities to Tier 2 and Tier 3 cities, as well as semi-urban and rural areas in India.

'The Government of India, on February 19 2019, stated that a company will be a startup if it fulfils the following criteria. It has been incorporated or established for a period not more than 10 years (previously 7 years, except for biotech startups). It is operated as a private limited company, a partnership firm, or a limited liability company.

Partnership

Its annual turnover has never crossed INR 100 crore in any given year since its inception. It is concerned with generating new ideas, creating employment opportunities, and generating wealth. Those firms that are formed by dividing or reorganising existing enterprises are not startups. To avail of the benefits of this scheme, a startup must be certified by the Department for Promotion of Industry and Internal Trade (DPIIT).'[1] The Startup India Action Plan is designed to assist and encourage the startup culture in India. It consists of handholding and simplification; startups can be facilitated with ease of compliance by self-certification, minimising bureaucratic obstacles. Incentives and funding support, a startup fund of funds (FFS) with a corpus of ₹10,000 crores has been established. SIDBI is handling it and will provide financial support to startups. Collaboration between startups and universities, as well as startup incubators and innovation labs, is being established in schools and colleges nationwide to assist young entrepreneurs. The Startup India Action Plan aims to create a conducive startup environment that facilitates their growth, development, and Innovation, driving economic growth for India.

Key Achievements of the Startup India

The Startup India initiative has played a significant role in establishing new companies and promoting the nation's economic development. Some of its key contributions are: 1 40,803 startups have been officially recognised by the Department for Promotion of Industry and Internal Trade (DPIIT).

This indicates that the program has been successful in developing new businesses, generating over 15.53 lakh jobs and creating employment opportunities while also expanding the economy. To encourage women to be entrepreneurs, 67,499 startups have a female director. This indicates that women are increasingly becoming leaders in the startup industry. These milestones demonstrate how the initiative has facilitated the establishment of a thriving, inclusive, and innovative business ecosystem in India.

Table 1: DPIIT-Recognised Startups & Job Creation

Date (as on)	Startups Recognised	Women-Led Startups	Direct Jobs Created
30 June 2024	140,803	67,499	1,553,000
31 October 2024	152,139	—	—
31 December 2024	157,000	75,000	172,800
January 2025 (app)	159,157	—	1,660,000

Source: https://www.fortuneindia.com/macro/startups-in-india-rise-three-fold-in-5-years-maharashtra-up-gujarat-lead/119392?utm

The statistical data presented in the above tables underscore the substantial impact and scale of the Startup India initiative. As of January 2025, over 159,000 startups have been recognized by the Department for Promotion of Industry and Internal Trade (DPIIT), generating more than 1.66 million jobs, indicating a significant contribution to employment generation and economic activity. Notably, the initiative has fostered inclusivity, with over 75,000 women-led startups, reflecting growing gender participation in entrepreneurship.

Table 2: Key Scheme & Funding Highlights

Scheme / Area	Allocation / Impact	As on Date
Seed Fund Scheme (SISFS)	₹945 crore sanctioned	From 2021–22
Fund of Funds for Startups (FFS)	₹10,000 cr corpus	As of Aug 2024
AIFs via FFS (investment by AIFs)	₹20,572 cr	Up to 31 Oct 2024
SISFS funding approved	₹454.04 cr	As of 31 Oct 2024
Credit Guarantee Scheme (CGSS) guarantees	₹555.24 cr	As of 31 Oct 2024
Closed startups (total)	5,063 (3.3% of 152,139)	As of Dec 5, 2024
Maharashtra: Closed startups	929	As of Dec 5, 2024

Source:https://www.fortuneindia.com/macro/startups-in-india-rise-three-fold-in-5-years-maharashtra-up-gujarat-lead/119392?utm

On the financial support front, the Fund of Funds for Startups (FFS) with a ₹10,000 crore corpus has catalyzed investments of over ₹20,500 crore through Alternative Investment Funds (AIFs) by late 2024, showcasing strong capital mobilisation. Similarly, the Startup India Seed Fund Scheme (SISFS) approved funding of ₹454.04 crore, while the Credit Guarantee Scheme (CGSS) sanctioned guarantees worth ₹555.24 crore, both indicating the government's focus on easing early-stage funding constraints.

Despite these achievements, the data also reveals that approximately 3.3% of recognized startups have closed, with Maharashtra accounting for the highest share at 929 closures, suggesting regional disparities and potential challenges in sustainability. Overall, the initiative has built a strong foundation for India's startup ecosystem, but continued policy support, regional balance, and robust infrastructure will be key to long-term success.

Startup India ranking framework (SRF)

Launched in 2018, the state startup ranking framework is a yearly ranking aimed at verifying and strengthening the startup ecosystems of Indian states and Union Territories. The ranking considers policy reforms, regulatory assistance, and financial incentives and encourages states to compete positively in creating a better business environment.

State Rankings 2022

Indian states were differentiated by the extent to which they facilitated startups, resulting in varying degrees of performance. Best performers: - Gujarat, Karnataka, Kerala, Tamil Nadu. These four states have led the way in startup regulations, access to funding, and overall ecosystem building.

Top performers

Maharashtra, Odisha, Punjab, Rajasthan, and Telangana have all been top performers in

facilitating new enterprises and business facilities.' The Startup India Initiative has played a crucial role in enhancing India's business climate by simplifying regulations and providing assistance to startups. As the initiative grows, frequent policy reforms, digital platform upgrades, and active state involvement will be crucial to making India a global hub for startups.

Entrepreneurial Development in Maharashtra

Maharashtra has always been at the forefront of India's industry and technology. With its vibrant cities, diverse businesses, and rich culture, the state has emerged as a significant destination for new companies and innovative ideas. Realising that startups can contribute to the growth of the economy. The Maharashtra state Government established the Maharashtra State Innovative Startup Policy 2018. The policy was a significant step towards supporting a robust and vibrant startup ecosystem. With emphases on financial assistance, incubation facilities, and reasonable regulations, Despite the good efforts being put in Maharashtra's startups continue to face numerous issues, including the recruitment of skilled employees, high business costs, and lack of awareness in rural regions, it is necessary to address these issues with proper plans to utilise the best of Maharashtra's startup culture. The present study examines the influence of government policies on the state's startups, verifies the opportunities present, and identifies the challenges to be overcome.

The Maharashtra Centre for Entrepreneurship Development was established in 1988 with state assistance to facilitate the training and development of entrepreneurs. The state has also established regional corporations to promote business and industrial development. Globalisation is changing how companies operate, and it has made entrepreneurial development programs (EDPs) more relevant. EDPs provide technical expertise, business training, and motivation to equip entrepreneurs to meet market needs and adapt to new technologies. With increased competition, there will be a need for a culture of ongoing learning and skill development to maintain entrepreneurial success in Maharashtra.

'Maharashtra State Innovative Startup Policy 2018 has established a solid base for the startups in the state. There are over 12,000 registered startups. 140 core as financial support, and over 150 startups incubated. Everything that has been achieved so far is commendable. However, problems such as talent retention, operational expenses being high, and awareness disconnects have to be addressed to achieve the full potential of the ecosystem.'[4]

Table 3: DPIIT-Recognised Startups & Job Creation in Maharashtra

Year	Startups Recognised	Direct Jobs Created
2019	1,987	21,979
2020	2,531	29,133
2021	3,552	38,354
2022	4,763	50,913
2023	5,801	64,974

Source: Data on Maharashtra's DPIIT-recognized startups 2019–2023; Job-creation figures sourced from DPIIT state-wise annexure

Table 3 illustrates a consistent and significant growth trend in the number of DPIIT-recognised startups and job creation in Maharashtra over the five-year period from 2019 to 2023. The number of startups nearly tripled, rising from **1,987 in 2019** to **5,801 in 2023**, reflecting the increasing vibrancy of Maharashtra's entrepreneurial ecosystem. This upward trajectory highlights the growing effectiveness of both central and state-level initiatives, such as the Startup India scheme and the Maharashtra State Innovative Startup Policy (2018), in encouraging business formation.

Job creation has also shown steady improvement, with the number of direct employment opportunities increasing from 21,979 in 2019 to 64,974 in 2023—a threefold rise. This not only demonstrates the capacity of startups to absorb skilled and semi-skilled labour but also underscores the broader economic impact of the entrepreneurial sector in Maharashtra. The correlation between the rise in startups and employment indicates that these ventures are not just being registered, but are operational and contributing to economic activity. Overall, the data reflects a positive and expanding startup landscape, though sustaining this momentum will require further infrastructural support, talent retention, and access to finance across urban and rural areas alike.

Maharashtra possesses the resources, capability, and dynamism to become a global hub for Innovation and entrepreneurship. Through collaboration, investment in skills development, and an enabling ecosystem, the state can achieve long-term growth and stability. In the coming year, government policies will be crucial in addressing challenges and capitalising on opportunities. In this manner, Maharashtra will be able to create a future in which startups drive economic growth and have a positive impact on society. The state is among the top destinations for startups in India, but how does it compare with other top destinations in the nation? Here is a rundown of what the state does right, as well as areas that need improvement. Maharashtra is an active startup ecosystem, but it has fewer incubators than Karnataka and Telangana. The two states have structured programs that have assisted startups in growing policy and Infrastructure. Maharashtra's policies for startups are good, but Delhi and Karnataka are better in terms of Infrastructure and policy support to make startups successful. Ease of doing Business: Although Maharashtra remains competitive, it still suffers from regulatory problems, which make it harder for startups to operate smoothly. Gujarat and Tamil Nadu have streamlined their policies to make the climate business-friendly. Maharashtra is already a leading player in India's startup culture. With more support, Infrastructure, and regulations, it can be even bigger.

Findings of the study

Startup India has played a significant role in converting Maharashtra into a thriving startup ecosystem by. Streamlining regulations, eliminating bureaucratic barriers to entrepreneurs. Financial support, with more than 12,000 listed startups and RS. 140 crore in funding. Encouraging innovation leads to increased job opportunities and economic diversification. Financial and Institutional support, increased access to finance via the startup fund of funds (FFS), tax relief, and credit guarantee schemes. Support infrastructure as incubators, accelerators and innovation centres, albeit in lower numbers than in Karnataka and Telangana.

Financial support from the Maharashtra Centre for Entrepreneurship Development (MCED) and the Maharashtra State Innovative Startup Policy of 2018 is provided.

Challenges to Startup Growth

Regulatory and administrative barriers, licensing requirements, and delays in compliance discourage businesses from operating, resulting in limited market penetration in three cities. Rural areas lack Infrastructure, resources, and awareness. Tech-led growth, AI, and ed-tech startups are gaining momentum, with a focus on expanding beyond metropolitan areas. Government efforts focus on creating a startup ecosystem in Tier 2 and Tier 3 cities, emphasising the necessity of skill development. Education for entrepreneurship and academia-industry collaboration would be imperative to ensure long-term growth.

Recommendations

Streamline approval procedures to reduce bureaucratic delays and streamline the regulatory requirements to enhance operational efficiency. Enhance ease of doing business through policy transparency and digitalisation. Seed capital initiatives to fund early-stage businesses. Enhance facilities for finance support to MSMEs. Encourage private equity and venture capital investment in startups. Infrastructure Development. Invest in Incubation facilities and technology parks for Innovation; improve
logistics and supply chain facilities to facilitate business expansion. Promoting Rural and Small Town Entrepreneurship: Introduce awareness campaigns for entrepreneurs in Tier 2 and Tier 3 cities. Offer policy and capital support to rural startups, education in schools, and promote industry-academia collaborations to enhance entrepreneurial competencies.

Conclusion

Startup India has highly encouraged the development of entrepreneurship in Maharashtra by creating a conducive business environment and providing financial as well as regulatory benefits for startups. Startup India has streamlined the compliance process. Enhance accessibility to financing, foster Innovation, and generate employment opportunities. Additionally, the policy framework launched by the Maharashtra state government, for example, the Maharashtra State Innovation Startup Policy 2018, has also strengthened the entrepreneurship ecosystem by providing access to financing, incubation, and talent development. However, despite this advancement, several problems persist, including regulatory overhang, limited reach in Tier 2 and Tier 3 cities, and a challenge for early-stage startups to mobilise funds, as well as Infrastructure, storage, and a lack of quality talent, among others. Maharashtra's Dhruva leading startup centre is still behind other states in terms of its business structure, incubation support, and streamlined regulatory mechanisms.

For Maharashtra to become a global innovation hub, stakeholders and the government must address the following structural issues: policy infrastructure, building, promoting startup funding options, improving incubation networks, and supporting skill development programs. These key measures will further strengthen entrepreneurial development. With clear-cut reforms and enhanced Infrastructure, Maharashtra can become one of the world's leading hubs for startups, driving long-term economic growth and Innovation.

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Crop Adaptation in a Changing Climate: Trends in Soybean, Cotton, and Tur (Pigeon Pea) Production in Amravati Division

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Abstract:

This paper investigates the impact of rainfall fluctuations on the production trends of major crops—cotton, soybean, and tur (pigeon pea)—in the Amravati Division of Maharashtra, India, from 2011 to 2023. Analysing annual production data across five districts (Akola, Amravati, Buldhana, Washim, and Yavatmal) in relation to rainfall patterns, the study reveals a significant correlation between climatic variability and crop yields. Soybean, cotton, and tur production exhibited considerable volatility, with sharp declines during low rainfall years and increases in periods of favourable precipitation. Buldhana and Amravati demonstrated better recovery trends, suggesting some level of crop adaptation, while Akola, Washim, and Yavatmal showed higher sensitivity to rainfall inconsistencies. The findings underscore the need for improved irrigation infrastructure, climate-resilient seed varieties, enhanced soil and water conservation techniques, and diversified cropping systems to foster long-term agricultural stability and mitigate the adverse effects of climate change in the region.

Keywords: *Crop Adaptation, Climate Change and Rainfall Variability*

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1. Introduction:

Agriculture is the backbone of the economy in Amravati Division, playing a crucial role in the livelihoods of farmers and the overall development of the region. Over the years, the division has witnessed significant shifts in cropping patterns, largely influenced by climate change, market dynamics, and technological advancements.

Amravati Division, located in **Maharashtra**, consists of **five districts**: Amravati, Akola, Buldhana, Washim, and Yavatmal. The region is known for its **semi-arid climate**, with erratic rainfall and temperature fluctuations affecting agricultural productivity., is known for its diverse agricultural practices. The region primarily cultivates cotton, soybean, and tur (pigeon pea), which are essential for both commercial and subsistence farming. The division's agricultural landscape is shaped by factors such as soil type, rainfall patterns, and irrigation facilities.

Cotton is a dominant cash crop, cotton cultivation supports thousands of farmers and contributes significantly to the textile industry. Soybean is Emerging as a key crop, soybean is valued for its oil and protein content, making it an essential component of the agricultural economy. Tur (Pigeon Pea) is a staple pulse crop, tur is crucial for food security and soil fertility, as it enhances nitrogen levels in the soil.

2. Objectives of the Study:

1. To analyse **annual trends** in Soybean, Cotton, and Tur production across Akola, Amravati, Buldhana, Washim, and Yavatmal.
2. To assess **the impact of rainfall fluctuations** on crop yields.
3. To determine **crop resilience and adaptation patterns** over time.
4. To propose **strategies for climate-resilient farming** in affected districts.

3. Research Methodology:

- **Data Collection**: Historical production, rainfall records, and percentage changes for each district.
- **Comparative Analysis:** Identifying production trends relative to rainfall patterns.
- **Statistical Methods**: Calculating growth rates, decline percentages, and stability measures.
- **Interpretation**: Assessing the correlation between weather variations and crop performance.

'Since changes in rainfall have had a greater impact on crop production than other climatic factors like temperature, this paper focuses on rainfall pattern variations to assess their effect on crop adaptation.'

4. Climate Change Trends in Amravati Division:

Climate change has led to temperature fluctuations, erratic rainfall, and extreme weather events, affecting crop yields and farming practices. Farmers in Amravati Division have been forced to adopt climate-resilient crops, improved irrigation methods, and soil conservation techniques to mitigate the adverse effects. Studies indicate that crop diversification and adaptation strategies are essential for sustaining agricultural productivity in the face of climate change

Amravati Division faces significant climate variability, with an average annual temperature of **26.7°C**, peaking at **40.9°C** in May. Rainfall, averaging **1052 mm**, is mostly concentrated in July, but shifting climate patterns have led to unpredictable monsoons and erratic temperature changes.

Extreme weather events such as **droughts, floods, and erratic monsoons** have disrupted agriculture, reducing crop yields—especially wheat—and worsening soil degradation. Rising temperatures have also increased **pest infestations**, making sustainable farming more challenging. Farmers are now adopting **irrigation improvements and climate-resilient crops** to counter these impacts.

Climate models predict that Amravati Division could experience a temperature rise of up to 3.7°C by the end of the century, leading to more frequent heatwaves and extreme precipitation events. Rainfall patterns are expected to become more erratic, with an increase in heavy-precipitation events that could lead to flooding and soil erosion. These changes necessitate adaptive agricultural strategies, including climate-resilient crop varieties, improved irrigation techniques, and sustainable soil management

5. District wise land utilisation pattern:

The land utilization across districts in Amravati Division shows considerable

variation in cultivable and non-cultivable land distribution.

Table: 1
Land Utilization Pattern by District (00' ha)

District	Total Geographical Area (sq. km)	Total Cultivable Land (sq. km) (Percentage)	Non-Cultivable Land (sq. km) (Percentage)
Amravati	**12,235**	**6,729 (55%)**	**5,506 (45%)**
Akola	**5,427**	**3,256 (60%)**	**2,171 (40%)**
Buldhana	**9,661**	**5,603 (58%)**	**4,058 (42%)**
Washim	**5,150**	**3,193 (62%)**	**1,957 (38%)**
Yavatmal	**13,582**	**6,791 (50%)**	**6,791 (50%)**

Source: Land Utilization Statistics (2018), Mahaagri, Department of Agriculture, Govt. of Maharashtra

Washim leads with the highest cultivable land percentage (**62%**), followed closely by **Akola** (**60%**) and **Buldhana** (**58%**). These districts rely heavily on agriculture, supporting both staple and cash crops. **Amravati**, while still highly agricultural (**55%**), has a significant share of non-cultivable land, reflecting a mix of urban expansion, forested areas, and barren land. **Yavatmal**, in contrast, has the lowest cultivable land (**50%**), largely due to its extensive forest cover, making it ecologically significant within the division.

The non-cultivable land percentage further highlights differences in land use patterns. **Yavatmal** tops this category, with **50%** of its land being non-cultivable, reinforcing its role in biodiversity conservation. **Amravati** follows with **45%**, likely influenced by urban development and semi-arid zones. **Buldhana** and **Akola** maintain similar shares (**42%** and **40%**, respectively), reflecting a balance between agriculture and other land uses. **Washim**, with the lowest non-cultivable land (**38%**), remains predominantly agricultural. These variations illustrate how geography, climate, and economic priorities influence district-wise land utilization across Amravati Division.

6. Annual Trends in Soybean Production and Rainfall Across Districts in Amravati Division (2011-2023):

The table-2 presents annual soybean production trends across Akola, Amravati, Buldhana, Washim, and Yavatmal, along with variations in rainfall over the years. The percentage changes in parentheses indicate year-on-year growth or decline in production, helping identify patterns influenced by climatic conditions.

Table: 2
Annual Trends in Soybean Production and Rainfall (2011-2023)
("00" tonnes) (%)

Year	Akola	Amravati	Buldhana	Washim	Yavatmal	Rainfall (mm)
2011-12	1,677 (-)	3,731 (-)	3,742 (-)	2,906 (-)	2,981 (-)	**846**
2012-13	2,904 (**+73.16%**)	4,718 (**+26.45%**)	4,303 (**+14.99%**)	3,382 (**+16.37%**)	3,891 (**+30.52%**)	**875**
2013-14	1,919 (**-33.91%**)	3,527 (**-25.24%**)	4,790 (**+11.31%**)	2,323 (**-31.31%**)	1,566 (**-59.75%**)	**1019**
2014-15	696 (**-63.73%**)	1,283 (**-63.62%**)	1,891 (**-60.52%**)	1,213 (**-47.78%**)	976 (**-37.67%**)	**598**
2015-16	1,021 (**+46.69%**)	1,267 (**-1.24%**)	1,604 (**-15.17%**)	1,682 (**+35.71%**)	1,409 (**+44.36%**)	**661**
2016-17	3,057 (**+199.41%**)	4,834 (**+281.53%**)	7,036 (**+338.65%**)	4,461 (**+165.21%**)	2,824 (**+100.24%**)	**792**
2017-18	1,440 (**-52.89%**)	2,652 (**-45.13%**)	4,396 (**-37.52%**)	2,271 (**-49.09%**)	2,063 (**-26.94%**)	**552**
2018-19	2,988 (**+107.50%**)	3,516 (**+32.57%**)	4,484 (**+2.00%**)	4,143 (**+82.43%**)	3,272 (**+58.60%**)	**701**
2019-20	1,902 (**-36.34%**)	1,986 (**-43.51%**)	5,358 (**+19.49%**)	3,237 (**-21.86%**)	2,344 (**-28.36%**)	**816**
2020-21	2,656 (**+39.34%**)	2,003 (**+0.85%**)	6,951 (**+29.73%**)	5,253 (**+62.27%**)	2,851 (**+21.62%**)	**612**
2021-22	2,506 (**-3.38%**)	2,601 (**+29.85%**)	7,477 (**+7.56%**)	5,024 (**-4.35%**)	2,866 (**+0.52%**)	**756**
2022-23	3,876 (**+51.05%**)	1,810 (**-30.41%**)	7,916 (**+5.87%**)	9,227 (**+83.66%**)	2,300 (**-19.74%**)	**677**
Total	**31,662**	**46,096**	**65,517**	**52,602**	**29,162**	**9,983**
Average	**2,638**	**3,841**	**5,460**	**4,384**	**2,430**	**832**

Sources: Maha-Agri, Department of Agriculture, Govt. of Maharashtra, Report 2011-23.

Akola: Soybean production showed extreme volatility, with sharp declines in 2014-15 (-63.73%) during low rainfall (598 mm) and peaks in 2016-17 (+199.41%) and 2018-19 (+107.50%), aligning with moderate rainfall (792 mm, 701 mm). Production is highly dependent on rainfall consistency.

Amravati: Soybean in Amravati experienced major fluctuations, with steep drops in 2014-15 (-63.62%) due to low rainfall (715 mm), while the highest recovery occurred in 2016-17 (+281.53%), during 878 mm rainfall. Consistency in rainfall plays a crucial role in stabilizing production.

Buldhana: The highest producer, with less volatility compared to other districts. Despite major drops in 2014-15 (-60.52%), the strongest recovery in 2016-17 (+338.65%) and steady performance in 2018-19 (+2.00%) suggest good resilience to climatic variations.

Washim: Production peaked in 2016-17 (+165.21%), coinciding with 902 mm rainfall, while major drops occurred in 2014-15 (-47.78%), with low rainfall (564 mm). The district remains highly sensitive to rainfall inconsistencies.

Yavatmal: Production fluctuated with sharp declines in dry years (2013-14: -59.75%), 2014-15 (-37.67%), and 2022-23 (-19.74%), while moderate rainfall years boosted yields. This district has less stability compared to Buldhana and Amravati.

Soybean production across districts shows high sensitivity to rainfall fluctuations, with sharp declines in drought years (2014-15, 2017-18) and peak yields in moderate rainfall periods (2016-17, 2018-19). Buldhana and Amravati demonstrate strong resilience, while Akola and Yavatmal struggle with stability, highlighting the need for better climate adaptation strategies.

7. Annual Trends in Cotton Production and Rainfall Across Districts in Amravati Division (2011-2023):

Table: 3
Annual Trends in Cotton Production and Rainfall (2011-2023)

("00" tonnes) (%)

Year	Akola	Amravati	Buldhana	Washim	Yavatmal	Rainfall (mm)
2011-12	2593 (--)	2702 (--)	3217 (--)	1039 (--)	7135 (--)	846
2012-13	3240 (**+24.95%**)	6115 (**+126.31%**)	3461 (**+7.58%**)	880 (**-15.30%**)	9814 (**+37.54%**)	875
2013-14	3436 (**+3.54%**)	6332 (**+3.54%**)	6396 (**+84.80%**)	373 (**-57.61%**)	7004 (**-28.63%**)	1019
2014-15	1226 (**-64.31%**)	1962 (**-69.01%**)	1325 (**-79.28%**)	168 (**-54.95%**)	2874 (**-59.44%**)	695
2015-16	1949 (**+58.97%**)	4170 (**+112.53%**)	1658 (**+25.13%**)	196 (**+16.66%**)	4834 (**+68.19%**)	707
2016-17	4427 (**+127.14%**)	8040 (**+92.80%**)	5166 (**+211.18%**)	375 (**+91.32%**)	10979 (**+127.12%**)	792
2017-18	2404 (**-45.69%**)	3803 (**-52.69%**)	1809 (**-64.98%**)	177 (**-52.80%**)	4775 (**-56.50%**)	552
2018-19	4195 (**+74.50%**)	6260 (**+64.60%**)	3089 (**+70.75%**)	356 (**+101.12%**)	8440 (**+76.75%**)	701
2019-20	3806 (**-9.27%**)	4602 (**-26.48%**)	1571 (**-49.14%**)	360 (**+1.12%**)	5527 (**-34.51%**)	816
2020-21	3355	7404	4751	818	7620	612

	(**-11.84%**)	(**+60.88%**)	(**+262.41%**)	(**+127.72%**)	(**+37.86%**)	
2021-22	3055 (**-8.94%**)	6189 (**-16.41%**)	5472 (**+15.17%**)	604 (**-26.16%**)	7208 (**-5.40%**)	756
2022-23	3624 (**+18.62%**)	3874 (**-37.40%**)	5425 (**-0.85%**)	413 (**-31.62%**)	5698 (**-20.94%**)	677
Total	**42,685**	**68,863**	**50,839**	**6,878**	**91,152**	**9,983**
Average	**3,557**	**5,738**	**4,236**	**573**	**7,596**	**832**

Sources: Maha-Agri, Department of Agriculture, Govt. of Maharashtra, Report 2011-23.

The above table presents annual soybean production trends across Akola, Amravati, Buldhana, Washim, and Yavatmal, along with variations in rainfall over the years. The percentage changes in parentheses indicate year-on-year growth or decline in production, helping identify patterns influenced by climatic conditions.

Akola: Cotton production declined sharply in 2014-15 (-64.31%) due to low rainfall (598 mm) but rebounded in 2016-17 (+127.14%), aligning with 792 mm rainfall. Production struggles to recover quickly after drought periods.

Amravati: Similar trends to Akola, with the worst drop in 2014-15 (-69.01%), followed by a strong recovery in 2016-17 (+92.80%), highlighting its rainfall dependency. Stability remains a challenge.

Buldhana: Demonstrated the best recovery trends, with major declines in 2014-15 (-79.28%) but an exceptional rebound in 2016-17 (+211.18%), showing strong resilience in post-drought conditions.

Washim: The weakest district for cotton production, highly sensitive to rainfall variations. Declines in 2014-15 (-54.95%) aligned with low rainfall (564 mm), while major increases in 2020-21 (+127.72%) were seen during high rainfall (892 mm).

Yavatmal: The highest cotton producer, but highly volatile. The worst declines were in 2014-15 (-59.44%), while peak recovery in 2016-17 (+127.12%) proves its heavy dependence on climatic stability.

Cotton yields are directly influenced by rainfall, with major losses in dry years (2014-15, 2017-18) and strong recoveries in wet years (2016-17, 2018-19). Yavatmal leads in total production but faces extreme volatility, while Buldhana exhibits the best recovery patterns, showing higher adaptability. Akola and Washim remain highly vulnerable, necessitating improved irrigation and soil conservation techniques.

8. Annual Trends in Tur Production and Rainfall Across Districts in Amravati Division (2011-2023):

The table- 4 presents annual soybean production trends across Akola, Amravati, Buldhana, Washim, and Yavatmal, along with variations in rainfall over the years.

Akola: Akola shows significant fluctuations in production, with the highest increase occurring in **2012-13** (+**323%**) and **2019-20** (+**325%**). A sharp decline was observed in **2014-15** (**-77%**) and **2022-23** (**-73%**). The total production across the years is **10,139**, with an average of **845** per year. Rainfall trends generally

Table: 4
Annual Trends in Tur Production and Rainfall (2011-2023)
("00" tonnes) (%)

Year	Akola	Amravati	Buldhana	Washim	Yavatmal	Rainfall (mm)
2011-12	220 (-)	1089 (-)	441 (-)	296 (-)	1089 (-)	**846**
2012-13	931 (**+323%**)	1331 (**+22%**)	439 (**-0%**)	356 (**+21%**)	1201 (**+10%**)	**875**
2013-14	838 (**-10%**)	1339 (**+1%**)	148 (**-66%**)	223 (**-38%**)	804 (**-33%**)	**1019**
2014-15	196 (**-77%**)	368 (**-73%**)	185 (**+25%**)	162 (**-27%**)	255 (**-66%**)	**695**
2015-16	451 (**+130%**)	576 (**+57%**)	242 (**+31%**)	230 (**+42%**)	626 (**+145%**)	**707**
2016-17	1420 (**+215%**)	1469 (**+155%**)	644 (**+166%**)	356 (**+55%**)	2309 (**+269%**)	**792**
2017-18	597 (**-58%**)	1111 (**-24%**)	477 (**-27%**)	190 (**-47%**)	1308 (**-43%**)	**552**
2018-19	345 (**-42%**)	1255 (**+13%**)	454 (**-4%**)	344 (**+81%**)	1449 (**+11%**)	**701**
2019-20	1155 (**+325%**)	901 (**-28%**)	1112 (**+145%**)	390 (**+13%**)	433 (**-70%**)	**816**
2020-21	504 (**-56%**)	1011 (**+12%**)	1426 (**+28%**)	535 (**+37%**)	799 (**+85%**)	**612**
2021-22	1580 (**+213%**)	1133 (**+12%**)	3716 (**+161%**)	368 (**-31%**)	1390 (**+74%**)	**756**
2022-23	422 (**-73%**)	396 (**-65%**)	689 (**-82%**)	396 (**+8%**)	542 (**-61%**)	**677**
Total	**10,139**	**13,678**	**11,975**	**4,986**	**12,831**	**9,983**
Average	**845**	**1,140**	**998**	**415**	**1,069**	**832**

Sources: Maha-Agri, Department of Agriculture, Govt. of Maharashtra, Report 2011-23.

Akola: Akola shows significant fluctuations in production, with the highest increase occurring in **2012-13** (+**323%**) and **2019-20** (+**325%**). A sharp decline was observed in **2014-15** (**-77%**) and **2022-23** (**-73%**). The total production across the years is **10,139**, with an average of **845** per year. Rainfall trends generally correlate with production, but large variations suggest external factors affecting yield.

Amravati: Amravati's production remained relatively stable, with notable growth in **2016-17** (+**155%**) and **2012-13** (+**22%**). However, there was a sharp drop in **2014-15** (**-73%**) and **2022-23** (**-65%**). The total production stands at **13,678**, averaging **1,140** annually. Rainfall trends

exhibit moderate fluctuations, influencing production patterns.

Buldhana: Buldhana's production saw its largest increase in **2016-17** (+**166%**) and **2021-22** (+**161%**). The most severe decline occurred in **2013-14** (-**66%**) and **2022-23** (-**82%**). The total production over the years is **11,975**, with an annual average of **998**. Production is heavily influenced by rainfall, with years of high precipitation leading to significant growth.

Washim: Washim exhibited extreme variations, with production surging in **2018-19** (+**81%**) and **2020-21** (+**37%**), but major declines in **2017-18** (-**47%**) and **2021-22** (-**31%**). The total production over the years is **4,986**, averaging **415** annually. With its relatively lower total yield compared to other districts, production appears highly sensitive to rainfall changes.

Yavatmal: Yavatmal showed considerable swings in production, peaking in **2016-17** (+**269%**) and **2021-22** (+**74%**). However, production fell sharply in **2014-15** (-**66%**) and **2019-20** (-**70%**). The total production is **12,831**, with an average of **1,069** annually. Despite high rainfall variations, production patterns reflect adaptability across different conditions.

Tur production is the most volatile among the three crops, with dramatic declines in low-rainfall years (2014-15, 2022-23) and massive spikes in wet periods (2016-17, 2021-22). Yavatmal and Amravati dominate production but experience extreme instability, while Buldhana shows better recovery ability. Washim struggles the most, emphasizing the need for more sustainable farming practices to mitigate climate risks

9. Conclusion:

The annual trends in Soybean, Cotton, and Tur production across Akola, Amravati, Buldhana, Washim, and Yavatmal reveal a strong correlation with rainfall fluctuations, making climatic stability a critical factor for agricultural sustainability.

- **Soybean:** Production fluctuates significantly across all districts, with peak years (2016-17, 2018-19) aligning with moderate rainfall (700-800 mm). Buldhana and Amravati show the best recovery trends, while Akola and Yavatmal struggle with stability.
- **Cotton:** This crop exhibits severe drops during drought years (2014-15, 2017-18) and strong recoveries in favorable rainfall periods. Yavatmal remains the top producer, but Buldhana displays the best resilience, bouncing back faster than other districts. Washim remains the weakest producer with extreme sensitivity to rainfall changes.
- **Tur**: Tur exhibits the most volatility, with sharp declines in low rainfall years (2014-15, 2017-18, 2022-23) and massive spikes in wet years (2016-17, 2021-22). Yavatmal and Amravati lead in production, but Washim remains highly unstable compared to the other districts.

Crop Adaptation – Has It Happened?

Crop adaptation appears partially implemented but not fully effective, as extreme yield fluctuations persist despite varying rainfall conditions.

- Districts with better adaptation: Buldhana and Amravati show strong recovery trends, suggesting some level of adaptation, possibly through better irrigation, resilient seed varieties, or improved farming techniques.
- Districts struggling with adaptation: Akola, Washim, and Yavatmal display high sensitivity to rainfall fluctuations, with significant losses in drought years. This indicates that adaptation strategies may be inadequate or inconsistently applied across these regions.

Recommendations for Better Crop Adaptation

1. Improve irrigation infrastructure to mitigate losses during low rainfall years.
2. Introduce climate-resilient seed varieties to stabilize production across all districts.
3. Enhance soil and water conservation techniques to retain moisture and reduce reliance on unpredictable rainfall cycles.
4. Encourage diversified cropping systems to minimize risks associated with extreme climate fluctuations.

While some adaptation has occurred, production trends still indicate high vulnerability to rainfall changes, meaning more robust climate strategies are necessary to achieve long-term stability.

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Doctrine of Presumption of Lost Grant: Critical Evaluation from Economic Perspective

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Abstract:

In the realm of law of ownership of property Doctrine of Lost Grant is a unique concept originated with the aim to end property disputes by continuing with the occupation and usage of a property whose lawfulness is not questioned since a sufficiently long time spanning several generations. However, at times the wrongful owners and forceful occupants also benefit from it. In the judgment of Hon'ble Supreme Court rejection of this argument has demonstrated the economic benefits in Indian context specifically in property disputes related with sites under inter-faith disputes. Ayodhya Temple construction has resulted in tremendous economic prosperity of the town of Ayodhya and adjoining places in eastern Uttar Pradesh which is evident from the data emerging from banks and other Government Institutions. The quality of life of citizens in these areas has also improved manifold because of tremendous infrastructure development.

Key words: *Grant, Peaceful, Long Possession, Economic Prosperity.*

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Introduction:

As per the principle of the doctrine of lost grant, when a right has been exercised by a person or persons for a sufficiently long time openly, uninterruptedly and peacefully then it can be safely presumed that it had a legal origin. This doctrine in some cases can be applied to set at rest disputes regarding title of an immovable property. This doctrine is based upon the recognized and accepted general infirmity of human nature, the difficulty of preserving muniments of title, and the legal policy of supporting long and uninterrupted possessions unless proved otherwise. They are founded upon the consideration, that the facts are such as could not, according to the ordinary course of human affairs, occur, unless there was a transmutation of title to, or an admission of existing adverse title in, the party in possession.

Origin of Concept

The theory of doctrine of presumption of lost grant originated in England and is utilized since 1189 from the time of accession of Richard I in 1189. Theory of lost grant has been traced in judgment of House of Lords in the case of Regina v. Oxfordshire County Council, Ex Parte Sunningwell Parish Council. 19993 ALL ER 385.The judgment itself observes that there is no consistent theory of prescription. English law did not consider long continuous enjoyment of a property as a method of acquiring title. English jurisprudence considered that long continuous possession and enjoyment of a property either barred remedy of the former owner to claim back possession or gave rise to a presumption that he had some act which conferred lawful title upon the person in de facto possession or enjoyment.

According to Cockburn C.J. in Bryant v.Foot(1867) L.R.2Q.B.161 observed that "Juries were first told that from user ,living memory or even during 20 years ,they might presume a lost grant or deed ; next they were recommended to make such presumption; and lastly , as the final consummation of judicial legislation , it was held that a jury should be told ,not only that they might, but also that they were bound to presume the existence of such a lost grant ,although neither judge nor jury ,nor anyone else ,had the shadow of a belief that any such instrument had ever really existed."

About Doctrine of Presumption of Lost Grant

When a person was found to be in possession and enjoying a landed property for a considerably long period of time under an assertion of title without challenge , Courts are inclined to ascribe a legal origin to such possession, and when on the basis of facts available on record title by prescription cannot be deduced ,a presumption can be raised that possession was referable to a grant by the owner entitled to the land , but that such grant had been lost .It is a presumption made for securing ancient and continued possession ,which can not otherwise be reasonably accounted for .However this presumption cannot be made by a Judge if the non existence of grant is evident or there is legal impediment to making of it .Presumption of lost grant cannot be made , if there was no person competent to be the recipient of such a grant, as where the right is claimed by a fluctuating body of persons.

As per the principle of the doctrine of lost grant, when a right has been exercised by a person or persons for a sufficiently long time openly, uninterruptedly and peaceably it can safely be resumed that it had a legal origin.

The practical distinction between prescription at common law and doctrine of lost grant is that where the claim is by prescription, the length of enjoyment constituted a title and on the other hand, if the right is claimed by lost grant, the long enjoyment afforded but a presumption of title.

The basic ingredient of the doctrine of presumption of lost grant rests on acquiescence. The House of Lords in the case of Charles Dalton v. Henery Angus and Co. (1881) UKHL 1 had ruled that "the whole law of prescription and the whole law, which governs the presumption or inference of a grant or covenant rest upon acquiescence. The Courts and Judges had recourse to various expedients for quieting the possession of property in the exercise of rights which have not been resisted by the persons against whom they are exercised, but in all cases it appears to me that acquiescence and nothing else is the principle upon which these expedients rest."

Where possession dates to a time beyond living memories, it will be almost impossible to prove by direct evidence the state of affairs which existed several decades ago. In such cases the doctrine of lost grant has been invoked by Courts to protect long continued enjoyment so that the party in possession may not suffer any hardship or injustice of not being able to support his title when the entire evidence has disappeared .The law no doubt requires strict proof of ouster to extinguish title of the other co-owners not in possession ,but ,if a co-owner is not in possession makes a claim after a long interval ,the Courts have presumed ,under the doctrine of lost grant, the sole and exclusive possession which

originated at a time beyond living memory was only as a result of ouster .

The expediency of presuming a lost grant is only applicable to cases where the available evidence or because of some technical reasons prevents the application of the principle of prescription in common law. The doctrine of presumption of lost grant is auxiliary to the doctrine of prescription. Repeatedly in a huge number of cases, this doctrine is taken resort to by litigants, holding Government lands. Ideally continuous and peaceful occupation is normally required, legal possession has been held to continue when the intermittent acts of claimant were also in consonance with the character of land and its use.

Application in Foreign Countries

Apart from the country of origin i.e., England in United States of America this doctrine is used since about last 200 years. The first case was of Richard v. Williams. Another landmark case is of Fletcher v. Fuller. The major factors which were outlined in this case were: -

(1) The possessor of land is probably in possession under a deed or other muniment of title which has been misplaced or lost. This conclusion is reasonable since owners of real property do not usually allow others to possess such property for a long period of time and exercise acts of ownership over it, without permission or consideration.

(2) Actual proof of the execution is not necessary; it is sufficient if the conveyance might have been executed.

(3) If not rebutted, the presumption of a lost grant is so strong that the jury may be inclined to presume such a conveyance.

(4) In order for the presumption to obtain the possession must have been actual, open and exclusive for the period prescribed by the statute of limitations to bar an action for the recovery of land.

(5) Possession of the property can occasionally be interrupted, if, in addition to possession, there were other open acts of ownership and the interruptions did not impair the uses to which the possessor subjected the property. In some cases, in United States of America, payment of taxes for a substantially long time is held to be a legally recognized ground for presuming a lost grant from the State. The Courts believed that as the property is the recorded in name of a particular person in the tax records through the action of officers of the State, it was rational to presume that the State has issued a grant of that particular property in favour of that particular person natural/legal.

Application in Indian Courts

The principle of lost grant was for the first time referred by Hon'ble Supreme Court of India in B. Satyanarayana v. Konduru Venkatapayya. The Hon'ble Supreme Court held that lost grant and presumption of title would not be made where there was sufficient evidence of the nature of grant. It was further held that the theory of lost grant itself is not unknown to India and that it is applied by our Courts in India ever since English jurisprudence was applied to Indian Courts for the historical reason of the English Rule over India.

Discussion in The Landmark Case of Shri Ramjanmbhumi: -

In this landmark case which apart from a case of religious beliefs a great deal of property law concepts was applied, argued and were discussed at length. The doctrine of presumption of lost grant was raised by the counsel appearing for Sunni Waqf Board as the mosque was constructed and dedicated in 1528 by the Mughal Emperor

Babur hence this doctrine was discussed at great length. The Hon'ble Supreme Court of India has laid down the ultimate five principles which are applicable and are the deciding parameters for invoking doctrine of presumption of lost grant. These five principles in brief were as under: -

(i)The doctrine of lost grant supplies the lack of evidence. The doctrine is applicable in the absence of evidence, due to a lapse of time, to prove the existence of a valid grant issued in antiquity. However, the court is not bound to raise the presumption where there is sufficient and convincing evidence to prove possession or a claim to a land in which case the doctrine of lost grant will have no applicability.

(ii) Where it is impossible for the court to determine the circumstances under which the grant was made, an assumption is made about the existence of a valid and positive grant by the servient owner to the possessor or user. The grant may be express or implied. Once the assumption is applied, the court shall, as far as possible, secure the possession of those who have been in quiet possession.

(iii) For a lawful presumption there must be no legal impediments. For the applicability of the doctrine it is necessary to establish that at the inception when the grant was made not only was there a valid grant but also capable grantees in whose favour the grant could have been made. In the absence of defined grantees, there will be no presumption of lost grant.

(iv) For the applicability of the doctrine of lost grant, there must be long, uninterrupted and peaceful enjoyment of an incorporeal right. Uninterrupted enjoyment includes continuous use or possession. The requisite period of use and possession is variable and to be determined from case to case.

(v) A distinction has to be made between an assertion of rights due to a prolonged custom and usage and that by doctrine of lost grant.

Ultimately Hon'ble Supreme Court rejected applicability of doctrine of presumption of lost grant for the reason of lack of pleadings in this respect.

Economic Impact of Lands/Immovable Property in India Locked in Religious Disputes:

As per the figures referred in the book written by Hon'ble Shri Narasimha Rao in his book *Ayodhya 6th December 1992* it is estimated that thousands of such sites are there in entire India. This doctrine if applied in Indian context and particularly in context of disputed sites where mosques are standing and Hindus claim that these mosques are constructed after demolishing ancient temples, then immovable property worth lacks of crore which probably should have been vested in Government/Temples but which is claimed to be owned by mosques as grant of land by Muslim rulers of India is lying idle and instead of a resource for the country's growth and welfare is fomenting disputes and conflicts, legal as well as sometimes physical like riots. As per one research it is found that the construction of temple in Ayodhya has resulted in significant economic development of Ayodhya. Further the infrastructure of Ayodhya and adjoining areas has also developed significantly and thus the rejection of application of doctrine of lost grant has resulted in significant economic growth of Ayodhya.

Economic Impact of Construction of Shri Ram Mandir in Ayodhya: -

The Confederation of All India Traders reports that consecration ceremony of Shri

Ram Mandir Ayodhya generated business worth INR 100,000 crores (approx.) across the country. Ayodhya's tourism is improving because of construction of airport, expansion of railway station and construction of green field townships. Because of above stated developments, sectors like airlines, hotels, FMCG, travel and construction work industries are growing. Stock prices of certain companies also significantly increased because of their connection with Ayodhya. These companies include: -

1. Allied Digital Services – involved in Ayodhya Smart City Project

2. Thomas Cook India – offered budget travel packages to Ayodhya

3.Easy Trip Planners- travel packages for Ayodhya

4. InterGlobe Aviation – announced commercial flights to Ayodhya

Thus construction of Shri Ram Mandir in Ayodhya is making a big positive impact on the economy of Uttar Pradesh.

As per an article in India Today, because of opening of Shri Ram temple in Ayodhya, income of businesses has increased three to four times. Approximately two lack people visit Ayodhya daily and rates of land near temple have increased approximately ten times.

After inauguration of Shri Ram temple in Ayodhya, various hotels and real estate companies like Indian Hotels Company Ltd., ITC Ltd., OYO, etc have purchased or are in the process of acquiring hotels in Ayodhya. Air line operators like IndiGo and Air India Express have launched multiple flights connecting major cities with Ayodhya. Indian Railways is also planning to launch approximately fifteen new trains connecting Ayodhya with different cities of India.

Various developments and infra structure projects have been initiated in Ayodhya by Centre and State Governments. These project have been catagorised into eight broad themes: -

1. Aesthetic Ayodhya; 2. Clean Ayodhya; 3. Efficient Ayodhya; 4. Accessible Ayodhya;
5. Experiential Ayodhya; 6. Modern Ayodhya; 7. Cultural Ayodhya; 8. Healthy Ayodhya

In last five years, the Ram Mandir Trust has paid approximately Rs. 400 crores in form of various taxes and funds to the Governments. The Shri Ram Temple is working as a catalyst for the economic growth of Ayodhya city and surrounding regions.

As per an article of Ministry of External Affairs, Shri Ram Mandir will be creating around two lakh jobs.

According to another article on the website of Ministry of Information and Broadcasting, Ayodhya is transforming and progressing from pilgrimage town to an economic hub in the State of Uttar Pradesh.

After opening Shri Ram Temple in Ayodhya the Banks are also reporting surge in fixed deposits and loan disbursement. Thus it can be concluded is that after construction of temple in Ayodhya the town has become more prosperous and will become a model city in a short while.

Economic growth because of tourism is so evident that Ayodhya has even surpassed Taj Mahal in the number of tourists as per available data.

Conclusion

The doctrine of the presumption of a lost grant is the result /combination of the necessity to quiet the disputes as to title pertaining to immovable property which in modern times in majority of cases, pertains to huge social/religious trusts on one side and State/another religious sect on the other side. However, this doctrine in Indian context may create hindrance in the economic prosperity of lacks of people. Thus religious tourism has a great scope in this country and can be tapped without any social and moral implications.

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Economic Impact of National Education Policy 2020

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Abstract: -
The National Education Policy (NEP) 2020 has introduced sweeping reforms aimed at transforming the education landscape in India. This paper examines the economic implications of NEP 2020, focusing on funding requirements, resource allocation, and its potential impact on long-term economic benefits. Through a comprehensive analysis of policy documents, academic literature, and empirical data, insights into how economic growth, human capital development, and the overall socio-economic structure of India can be influenced.

Keywords: - *National Education Policy, India, Human Capital Development, Social and Economic Inclusion, Economic growth*

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Introduction: -

NEP 2020 is a landmark policy that addresses several challenges while aligning the Indian education system with global standards and emerging trends. An important aspect of this strategy is its economic impact, which includes both short-term economic impacts and long-term economic benefits. This paper explores these dimensions through a structured analysis of key policy provisions and their potential economic implications.

Literature Review: -

The literature review synthesizes existing research on the economic impacts of education policies globally and in India. Several studies are being conducted to explore the implications of the National Education Policy 2020 on higher education. A study by Singh and Patel (2021) discusses the policy approach of institutional autonomy, multidisciplinary education, and the establishment of a single regulatory body – the Higher Education Commission of India (HECI). Furthermore, Bose (2021) analyzes the potential impact of the Multiple Entry and Exit System (MEES), which provides students with greater flexibility in higher education pathways. While the policy is praised for its ambitious approach, several studies highlight potential challenges in its implementation. Mehta (2021)'s research indicates that funding constraints, digital divide, and infrastructure constraints are key barriers. Similarly, Banerjee (2022) raises concerns about the readiness of educational institutions to transition to teacher training and multidisciplinary and competency-based learning models.

Research Methodology: -

This research uses a qualitative approach using document analysis and

synthesis of secondary information sources. Policy documents, government reports, academic papers, and empirical studies related to NEP 2020 and its economic implications will be critically examined. The methodology also includes comparative analysis with education policies of other countries to draw insights into possible best practices and lessons for India.

Detailed Discussion: -

A) Fund requirement and resource allocation: -

An analysis of the financial commitments required for the implementation of NEP 2020, including budget allocation, public-private partnership, and resource mobilization strategies, is necessary.

Fund requirement under NEP 2020: -

1) Infrastructure Development: - As per NEP 2020 recommendations, a huge amount of funds will be required for the up gradation of existing infrastructure and setting up of new educational institutions.

2) Teacher Training and Capacity Building: - Budgetary provisions will be required to enhance teacher training programs, professional development activities, and recruitment processes to meet the strategic objectives.

3) Digital Initiatives and Technology Integration: - Under NEP 2020, expenditure related to digital infrastructure development, e-learning platforms, and ICT-enabled learning methods will be substantial.

Resource Allocation Strategies: -

1) Public Budgetary Allocation: - As per NEP 2020 guidelines, the allocation of national and state budget funds for education will be important, with priority given to various educational sectors.

2) Public-Private Partnerships (PPPs):- PPPs are going to play an important role in funding education infrastructure development, vocational training initiatives, and skill development programs envisaged in NEP 2020.

3) Efficiency in resource utilization: - Policy evaluation will be necessary to enhance efficiency in resource allocation with transparency, accountability mechanisms, and monitoring frameworks to ensure optimal utilization of allocated funds.

Overall, NEP 2020 is going to play an important role in achieving the policy objectives of adequate funding and efficient resource management. For the successful implementation of NEP 2020, policymakers and stakeholders will face challenges, and resource utilization and the role of sustainable funding will be crucial.

B) Human Capital Development: -

It is important to assess how NEP 2020 initiatives such as emphasis on vocational education, skill development, and critical thinking can contribute to increasing human capital, employability, and economic productivity.

1) Curriculum Reform: -NEP 2020 emphasizes on flexible, multi-disciplinary curriculum that promotes critical thinking, creativity, and problem-solving skills.

2) Vocational Education and Skill Development: - Evaluation of provisions to integrate vocational education into mainstream school education, promote skill

development, and increase employability will be important.

3) Teacher training and professional development: - Evaluation of strategies to enhance teacher quality through continuous professional development, pedagogical training, and innovative teaching methods aligned with NEP 2020 guidelines will be essential.

Challenges in Implementation: -

1) Infrastructure and Resource Constraints: - Identifying challenges related to infrastructure development, availability of qualified teachers and allocation of resources to implement human capital development activities under NEP 2020 will be important issues in the future.

2) Curriculum Implementation: - Challenges in curriculum adaptation, assessment improvement, and alignment with industry to ensure relevance and effectiveness in skill development may arise in the future.

3) Equity and Inclusivity: - Barriers to equal access to quality education cannot be ruled out as major problems, with socio-economic disparities, regional disparities, and inclusive challenges in implementing human capital development policies.

4) Implications for Socio-Economic Development: - Enhanced Employability and Economic Productivity: NEP 2020's focus on human capital development will need to examine and evaluate how it can lead to employability, higher productivity, and economic growth.

5) Social Mobility and Inclusive Growth: - It will be important to analyze the potential of NEP 2020 to enhance social mobility, reduce income inequality, and promote inclusive growth through equal access to quality education and skill development opportunities.

Synthesizing key findings on human capital development in NEP 2020, emphasis on India's ability to shape the socio-economic landscape through improved quality of education, skill development, and inclusive growth will be an important aspect. NEP 2020 proposes recommendations for policymakers, educators, and stakeholders to optimize human capital development. These include strengthening vocational education infrastructure, expanding teacher training programs, expanding public-private partnerships, and implementing stronger monitoring mechanisms. The results will depend on how effective the implementation is.

C) Effect on Economic Growth: -

Evaluating the potential macroeconomic impact of NEP 2020, economic prosperity can be achieved through a well-educated workforce, considering its role in promoting innovation, entrepreneurship, and technological advancement. NEP 2020 aims to transform India's education system to match global standards and meet the needs of the 21st-century economy.

Key provisions and their financial impact: -

1) Skill Development and Employability: - NEP 2020 focuses on vocational education, skill enhancement programs, and their potential to increase labor productivity and reduce unemployment.

2) Promotion of Innovation and Research: - Policy provisions for innovation ecosystem, development of

research infrastructure and collaboration between academia, industry, and research institutes will play an important role in enhancing technological advancement and economic competitiveness.

3) Entrepreneurship and Start-up Culture: - The focus through NEP 2020 is to promote an entrepreneurial mindset, incubation centers, and skill development in entrepreneurship to boost economic growth through job creation and innovation.

Challenges in Implementation: -

1) Resource Constraints: - Challenges related to funding requirements, infrastructure development, and resource allocation will always be felt to implement the ambitious goals of NEP 2020.

2) Curriculum Adaptation: - New challenges will arise in aligning curriculum reforms with industry needs, ensuring relevance, and preparing students for emerging job markets and technological advancements.

3) Equity and Inclusivity: - Removing barriers to equal access to quality education and skill development opportunities across socio-economic and regional divides, which may impede the potential financial flow of the policy.

The potential impact of NEP 2020 on India's economic growth cannot be over-debated as it is a futuristic forecast to address key implementation challenges and leverage policy opportunities to maximize the policy's economic dividends.

D) Social and Economic Inclusion: -

It will be important to review the provisions of NEP 2020 which aim to promote inclusiveness, reduce socio-economic disparities increase access to education for marginalized communities, and realize its potential socio-economic benefits.

1) Equitable Access to Education: - Provisions of NEP 2020 will be instrumental in ensuring universal access to quality education including improving infrastructure, expanding educational facilities, and reducing dropout rates among marginalized communities.

2) Affirmative Action and Diversity: - Policies and provisions to promote diversity, equity, and inclusion through affirmative action measures, reservation policies, and scholarships for socio-economically disadvantaged groups will be important.

3) Regional and Linguistic Inclusivity: - It will be necessary to see what role the provisions of NEP 2020 play in promoting education in regional languages, preserving cultural diversity, and removing linguistic barriers in educational access and participation.

Implementation Challenges: -

1) Allocation of resources: - Equitable distribution of resources, funding constraints, and challenges related to infrastructure development in underserved regions and communities will arise.

2) Capacity building: - New challenges will arise in building the capacity of educational institutions, training teachers, and implementing inclusive pedagogical practices that cater to diverse academic needs and backgrounds.

3) Monitoring and Evaluation: - Monitoring the effectiveness of inclusion measures, evaluating results, and ensuring accountability for achieving the inclusion goals of NEP 2020 will also pose a major challenge.

NEP 2020 proposes recommendations for policymakers, educators, and stakeholders to enhance social and economic inclusion. These include strengthening affirmative action measures, improving infrastructure in underserved areas, increasing teacher training in inclusive education practices, and expanding partnerships. It remains to be seen in the future how much this benefits the marginalized community.

Conclusion: -

The paper concludes by synthesizing key findings and providing insights into the economic implications of NEP 2020. It discusses the policy's potential to contribute to economic growth, human capital development, and socio-economic inclusion. In addition, it identifies challenges and recommendations to optimize the financial benefits of the policy, ensure sustainable implementation, and maximize return on educational investment.

Based on the findings, NEP proposes strategic recommendations for policymakers, academic institutions, and stakeholders to effectively leverage the economic potential of 2020. These recommendations focus on enhancing funding mechanisms, improving resource allocation efficiency, strengthening vocational education and skill development initiatives, and enhancing partnerships with industry and international stakeholders.

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Special Economic Zone in India: Perspective, Performance and Challenges

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Abstract

The Special Economic Zone Act of 2005 in India is a significant milestone in the country's industrialization history. The notion of Special Economic Zones (SEZs) is anticipated to yield substantial economic advantages and contribute to employment growth. This study examines the development of SEZ policy and performance, and pinpoints the obstacles that impact the effectiveness of SEZ policy. It includes land acquisitions issues, socio-economic impacts such as displacement of marginal communities, rehabilitation and resettlement issues and compensation policies disparities. This study concludes that millions of underprivileged people were displaced by SEZs' pro-industrial aspects. It also examines that the Land Acquisition Act allowed SEZs to acquired millions of acres of agricultural land with irrelevant strategy. It also argues that SEZs compensation policy create disparities within affected people and fail to fulfil all commitments about resettlement and rehabilitation for affected people. This study also argue that the state may have the right to acquisition people land, but with consideration of their lives.

Keyword: *Special Economic Zone, Displacement, Land Acquisition, Compensation, Resettlement and Rehabilitation*

Background

In the era of globalization, countries are adopting diverse policies to accelerate socio-economic development (Tantri, 2010b). India's 1991 economic reforms gradually opened its economy to global competition and investment opportunities (Sharma, 2009). In this context, the Special Economic Zone (SEZ) policy emerged as a major driver of development, aiming to boost exports, attract foreign investment, and enhance global competitiveness (Aggarwal, 2006; Tantri, 2010a).

While proponents hail SEZs as engines of rapid growth and modernization (Aggarwal, 2012; Nayyar, 2017), critics argue they facilitate land dispossession and marginalization of vulnerable communities (Nielsen, 2010; Sathe, 2014). The debate continues over their effectiveness in balancing industrial advancement with social justice and sustainable development (Misra, 2019).

This study examines the evolution and functioning of SEZs in India, analyzing their contributions to GDP, employment, exports, and FDI inflows. It also highlights challenges such as land acquisition conflicts, displacement, and uneven compensation. The analysis is based on

secondary sources, including government reports, SEZ project documents, media accounts, and academic studies.

The paper proceeds with a literature review, followed by discussions on land acquisition, SEZ impacts at the grassroots level, and concludes with key findings and policy recommendations.

Framework of Special Economic Zone (SEZ) Policy

The concept of SEZs in India evolved from the earlier Export Processing Zones (EPZs), with the first EPZ established in Kandla, Gujarat, in 1965—Asia's first. This was followed by the Santa Cruz EPZ (1973) for electronics and later, EPZs in Chennai, Cochin, Falta, and Noida in the 1980s. Visakhapatnam EPZ was created in 1989 but became operational only in 1994 (Menon & Mitra, 2009; Tantri, 2013). Reports like the Tandon Committee (1980) stressed policy reform regarding access to Domestic Tariff Areas and regulatory structures (Tantri, 2010a). However, weak policy coherence, poor infrastructure, flawed site selection, and lack of incentives hindered the EPZs' effectiveness (Jindal & Yashika, 2019; Tantri, 2013).

By the late 1990s, SEZs gained global prominence—China's SEZs accounted for nearly 20% of FDI and 10% of exports, while Poland attracted around 35% FDI (Andreas et al., 2020; Parwez, 2016). Their success as vehicles for rapid industrialization inspired Indian policymakers. Influenced by China's model, then Commerce Minister Murasoli Maran introduced SEZs through the EXIM Policy of 2000 (Aggarwal, 2007; Saxena, 2008).

This policy converted existing EPZs—Kandla, Santa Cruz, Cochin, Surat, Noida, Falta, Visakhapatnam, and Chennai—into SEZs (Aggarwal, 2006; Dhingra & Singh, 2009). The SEZ Act, passed in 2005 and enforced in 2006, formalized this framework (Dohrmann, 2008; Government of India, 2005). SEZs are defined as specifically demarcated areas with tax and tariff exemptions for both domestic and foreign operations.

The Act categorizes SEZs as: (i) multi-product SEZs requiring 1000 hectares, (ii) sector-specific/service SEZs with 100 hectares, and (iii) IT SEZs requiring just 10 hectares (Gopinath, 2009; Jindal & Yashika, 2019). Unlike EPZs, SEZs are self-contained townships with integrated infrastructure (Tantri, 2010a).

The SEZ Act aims to boost exports, attract FDI, and foster industrial growth by promoting public-private partnerships and enhancing infrastructure, thereby contributing to employment and economic development (Farole & Akinci, 2011; Aggarwal, 2006; Sampat, 2008).

Performance and Progress of SEZs in India

Following the announcement of the SEZ Rules in February 2006, the Department of Commerce has issued 426 official permits for the establishment of SEZs. Among them, 358 have been officially recognised, while 262 have received preliminary approvals and 33 have been awarded

optional approvals. A total of 5,537 units have received approval as of October 2020.

In India, SEZs are allocated in a statistically distributed manner based on the sectors that provide services. The service-oriented nature of the Indian economy, namely the impressive expansion of the IT industry, is also evident in the zones. According to the Table No.2, the electronic hardware and software sector has the largest number of SEZs, accounting for 58% of the total. Multi-product SEZs account for a relatively small proportion of approximately 11%. Although multi-product zones make up a small portion of the total number of functional SEZs, single-product zones have been established in various manufacturing sectors such as gems and jewellery, textiles, pharmaceuticals, biotechnology, engineering products, food processing, and footwear. As a result, manufacturing SEZs, which include both single- and multi-product zones, make up over 30% of the total operational SEZs in the country.

Table No. 1: Picture of SEZ in India

Sr.No.	Picture of SEZs in India	Total Number
1.	Number of Formal approvals (2020)	426
2.	Number of Notified SEZs	358
3.	Number of In-principle Approvals	33
4.	Operational SEZs	232
5.	Units approved in SEZs (March , 2019)	5537

Source: SEZ fact sheet 2020

The Ministry of Commerce and Industry reported that exports from SEZs rose from Rs. 228.40 crore in 2005–06 to Rs. 529,333 crores in 2020–21. The investment in SEZ rose from Rs. 40.355 crore in the fiscal year 2005–06 to Rs. 6174.99 crore by the fiscal year 2020–21. In 2005-06, the operational SEZ units created employment opportunities for 134,704 individuals, and this number grew to 2,358,136 individuals by 2020-21.

Table No.2: Sector Wise Distribution of SEZs in India

Sr.No.	Sector	Number of SEZs	Percentage %
1.	IT/ Electronic Hardware	136	58
2.	Multi-Production	25	11
3.	Engineering	12	5
4.	Pharmaceutical/ Chemicals	12	5
5.	Textiles	7	3
6.	Footwear	4	2
7.	Biotechnology	4	2
8.	Gem & Jewelry	4	2
9.	Multi- Services	2	1
10.	Food Processing	2	1
11.	Non-Convectional Energy	2	1
12.	FTWZ	4	2
13.	Others	18	7
	Total	**232**	

Source: SEZ fact sheet 2020

Throughout its existence, the SEZ has generated significant revenue from overseas exports, leading to a notable expansion in the employment sector. Consequently, authorities have engaged in competition to

attract economic growth, resulting in a rising demand for newly created SEZs. The new SEZ requires a larger amount of land. Consequently, the government acquired additional land by means of the Land Acquisition Act, which was based on colonial rules. The setting up of SEZ creates some dissatisfaction among the people due to acquisition of land. Thousands of impoverished homes are violently uprooted during this procedure, which happens every time. After being forced to sell their meagre possessions in exchange for a pitiful sum of money, they never receive any real benefits in return. There have been countless instances of violent agitation and bitter struggle over the past few decades all over the nation to push for the proper rehabilitation of the large numbers of people who lost their meagre holdings due to development and modernization in a variety of infrastructure, power generation, industrialization, high dam irrigation schemes, transport, and mining sectors. The first step in understanding land acquisition is to identify the participants in the process and their distinct interests (Jenkins, 2013; Parwez & Sen, 2016).

The Land Acquisition Act of 1894

Land, as a fundamental natural resource, holds deep economic, social, and symbolic importance (Saxena, 2008). For many marginalized groups—especially rural and tribal communities—access to and ownership of land is crucial for livelihood and identity (Jenkins, 2013). Land laws and institutions significantly influence acquisition costs, ownership transfer, and development, shaping a country's economic growth and equity outcomes (Hoda, 2018; Sud, 2007).

Historically, land acquisition in India has been governed by the colonial-era Land Acquisition Act (LAA) of 1894, which replaced earlier regulations like the Bengal Regulation I of 1824. Rooted in the principle of "eminent domain," the Act empowered the state to acquire private land without owner consent for "public purposes" (Levien, 2011). Initially serving British colonial interests—such as establishing plantations, mines, and infrastructure—the Act disrupted traditional land ownership, invalidating communal systems and legalizing private property to facilitate industrial expansion.

Post-independence, the Government of India adopted the LAA in 1947, later amending it 17 times to address compensation and acquisition mechanisms. Key changes came in 1984, allowing greater state intervention. As the Act is under the Concurrent List (Entry 42), both central and state governments can amend it, further shaping its implementation (Parwez & Sen, 2016).

However, the vague definition of "public purpose" enabled widespread and sometimes exploitative acquisitions, often favoring corporate or industrial interests under liberal economic reforms. This raised concerns over forced evictions, inadequate compensation, and neglect of the agricultural sector (Parwez, 2016; Vijayabaskar & Menon, 2018). The Supreme Court has repeatedly emphasized fair valuation, compensation, and the true public nature of proposed projects.

Critics argue that the state has misused the doctrine of eminent domain, acquiring land forcibly even for private and real estate development. The emphasis on industrial growth has come at the cost of agrarian livelihoods, exacerbated by underinvestment in agriculture. This ongoing tension highlights the need for a balanced approach that respects property rights while enabling development (Levien, 2011; Chamola, 2011; Sathe, 2016).

Displacement

Worldwide, a large number of people have been impacted by the phenomenon of displacement. Displacement-induced development has had particularly detrimental social effects in nations with agriculture centred economies, low job markets, and deeply rooted social stratification society (Jaysawal & Saha, 2018). The drawback, however, is that it is predicted that over a million individuals who depend on agricultural land have been displaced from their homes. Approximately 212 crores of rupees in total revenue losses are anticipated for government each year, which will also jeopardise India's ability to feed its people (Misra, 2019; Parwez, 2016). For the sake of their livelihood, farmers in India are increasingly protesting, up in arms, and opposing land acquisition. Due to this the problems, various land protests existed in Nandigram, Singur in West Bengal, Jamalamadugu in Andhra Pradesh, Jagatsinghpur in Odhisa, Nandagudi in Karnataka, and Bhatta Parsaul in Uttar Pradesh equally. Land is being taken by force without proper regard for fundamental human rights, such as the right to life and the right to personal freedom, in the name of development (Nielsen, 2010).

The government pledges humanitarian relocation, followed by assistance and rehabilitation. However, according to International Lobur Origination office report 2012 reveal that since SEZs notified, 1.40 million individuals have reportedly lost their land and displaced their habitats. At least 75% of them are still awaiting rehabilitation (Parwez, 2016). Furthermore, only people with land titles are being considered for compensation. No compensation has been planned for those that don't, and the current system of compensating farmers is thought to be wholly unfair (Nielsen, 2018). Let the market determine the land's price if it is being taken over for a commercial endeavour under the guise of a public good; free markets are about freedom, not industrialization or even corporate entities. So why limit farmers' ability to sell their land at a fair market value? (Chamola, 2011; Paul & Sarma, 2013)

Large tracts of land from farmers are taken by forcefully displacing them in order to create SEZs. The state government in question buys the land for cheap and gives it to business people. Aside from that, the government is also granted a number of exemptions at the expense of the common populace (Ramachandraiah & Srinivasan, 2011; Sahoo, 2015). Nothing more than a government programme that benefits the wealthy while harming the poor. As seen in Singur, Nandigram, and Raigad, there has been fierce resistance to the purchase of land from farmers. From prior experience, it is clear that the rehabilitation of those who have been displaced by SEZs and other

projects has not been carried out adequately. Due to the SEZs, there has been a generalised unrest among the populace. The government is therefore unable to take additional actions for the development of SEZs in various states (Sathe, 2014).

Land Acquisition for SEZs

The establishment of Special Economic Zones (SEZs) in India necessitates vast land tracts, leading to large-scale land acquisition, supported by government policy (Sahoo, 2015). While authorities claimed SEZs would not significantly affect agricultural output—citing their limited share in total cultivable land—many SEZs have been built on fertile agricultural zones, impacting food production during a time of global food insecurity (Levien, 2011; Vijayabaskar & Menon, 2018).

This development has disrupted thousands of rural livelihoods, resulting in land loss, environmental degradation, and increased social unrest. SEZ-driven displacement has contributed to rising rural poverty, migration, and farmer suicides, exacerbated by insufficient investment in sustainable agricultural alternatives (Akram-Lodhi, 2012; Andreas et al., 2020). Despite assurances of rehabilitation and employment generation, many displaced families, especially from Scheduled Castes and Scheduled Tribes, remain uncompensated and disenfranchised (Ambagudia, 2010; Bhaduri, 2015).

The state has promised compensation and relocation for affected farmers, including converting equivalent waste land to cultivable land (Ghatak et al., 2013). However, implementation has often failed. Over 150,000 hectares are being acquired, potentially displacing over 1 million people and affecting agricultural output of 1 million metric tonnes annually (Lahiri-Dutt et al., 2012; Parwez & Sen, 2016). Losses in farming income are estimated at ₹212 crore per year. These trends have sparked widespread protests by farmers resisting forced acquisition and demanding fair compensation.

SEZ development has brought certain benefits, such as foreign direct investment, modern infrastructure, and high-end employment, particularly in services. However, most of these jobs cater to the highly skilled or unskilled, excluding semi-skilled rural workers (Tantri, 2012). Simultaneously, agricultural employment is declining, driven by low productivity and land conversion, weakening food security and rural resilience (Vijayabaskar & Menon, 2018).

Moreover, SEZs operate under exemptions from Indian labor laws and are often treated as foreign territories within India. This raises concerns over national sovereignty and citizen rights, with critics highlighting historical patterns of displacement, neglect, and mismanagement (Wolford et al., 2013). Without transparent, market-based compensation and socially inclusive policies, SEZs risk reinforcing inequality and triggering instability (Sathe, 2015; Sahoo, 2015).

Employment Scenario

Another crucial sector where the employment rules of the land have been disregarded. Our nation has excellent labour regulations, but because SEZs are exempt

from all of them, anarchic conditions have been brought about. Even we can state that the SEZ territory is now exempt from Article 38(1) of our Constitution. This makes evident the tremendous benefits granted to SEZs, which go against the freedom of fundamental rights of our country's residents (Menon & Mitra, 2009; Parwez & Sen, 2016; Sahoo, 2015).

Since they lack the skills necessary for alternative jobs, farmers and agricultural workers who have their land taken away lose their jobs (Aggarwal, 2007). A concern is also brought up regarding the eviction and rehabilitation of farmers and agricultural workers. Due to their lack of education, the majority of Indian farmers are only able to work as labourers in SEZs, not holding any high-ranking posts. On the other side, farmers are unwilling to work in SEZs as labourers. If there were no jobs available for them, India's farmers and agricultural labourers would be in an even worse financial situation (Aggarwal, 2019; Parwez & Sen, 2016; Roy Chowdhury & Roy Chowdhury, 2016).

There is increased demand on infrastructure, housing, sanitation, and water because more SEZs are being built nearby to urban cities. Thus, a shift in the distribution of labour between rural and urban areas is also observed. As a result, urban regions are plagued with more issues while rural areas are significantly poorer (Tantri, 2013). Due to an excessive concentration of SEZs close to urban and semi-urban regions, India's SEZ developers are currently dealing with a serious dilemma. The creation of top-notch infrastructure amenities in underdeveloped regions like block and taluka levels is actually required to avert this type of issue (Jaysawal & Saha, 2018; Kumari, 2019).

The water supplies for proposed zones are not included in the SEZs Act of 2005. As a result, millions of litters of water zones were allotted by the state government without consideration for the people who would be injured. Residents who lived close to Gujarat and Andhra Pradesh SEZs has experienced a water deficit (Shah, 2013). The SEZ policy has also been under scrutiny due to concerns over environmental dangers, corruption allegations, and unlawful activities.

We've purported to be a democratic country for the last 60 years. But where has our democracy gone when the government seizes farmers' land without due process? Without the participation of the people, no policy or scheme can succeed. If the government wants the SEZ concept to succeed in India, the SEZ must be built on non-agricultural land, and the government must negotiate with farmers before purchasing their land. One thing to remember is that agriculture and industry are the two main engines of the country's economy; therefore, they must be balanced carefully (Andreas et al., 2020; Nielsen, 2010).

Conclusion

In sum, India began liberalising in 2000 when the SEZ started to take off with the intention of increasing economic activity's profitability, efficiency, and cost-effectiveness. Value addition, job creation, and other such vestiges of the control regime all contributed to the idea of SEZ. The SEZs now have one and only one goal:

to export goods and services and make money abroad and government promoted SEZs as engine of growth. (Aggarwal, 2019). Hence, SEZ policy negatively affect the lives of millions of people due to acquisition of agricultural land. Major issues regarding different actors, such as displacement, land acquisition, and compensation formulae, raised strong protests against the government's decision to set up a cap for SEZs of thousands of hectares of agricultural land.

In India, SEZs and land purchases have increased dramatically after the SEZs policy enforced. Also, millions of people have been forced to leave their homes in several Indian states because SEZs were given special status to private sector in terms of laws, regulations, and privileges related to land acquisition. The government also participated actively in land acquisitions for SEZs developers and acquired two to three crops of seasonable agricultural land. Hence, some reports and official data showed that the ratio of agricultural land to non-agricultural land dramatically increased in the last decade (Andreas et al., 2020). In order to alleviate the issue of displacement and migration, the government should utilize unproductive land for the purpose of acquiring land in SEZs with the intention of benefiting the Indian population rather than causing them harm. Land acquisition from agricultural land to industrial space causes a loss, but in many respects it is worse. Disadvantaged groups, such as those who own small farms and whose livelihood depends on agriculture, are forced to sell their land for less money to gain government advantages. The landless farmer, tenants and agricultural labourers are now unable to work in the SEZ sector due to a lack of skills, which results in underemployment or unemployment. For this reason, farmers in numerous states have been fighting the establishment of SEZs (Jenkins, 2011).

SEZs policy has consistently failed to consider the problems and prospects of resettlement and re-habitation of millions of effected people. Without a question, SEZs should enhance infrastructure while also helping to increase the expansion of the industry and subsequently exports. But they failed to consider a successful solution to the resettlement and re-habitation problems of marginalized communities (Sampat, 2017). As a result, a more sensible and

balanced approach to the development of SEZs is required. In order to help the lower classes of society, it is important to create conditions that will enable SEZs to accomplish their goals (Levien, 2011) . The state should have responsibility to transition its position from being pro- industrial to prioritizing welfare, and ensuring the well-being of disadvantaged populations. This should include a thorough consideration of a resettlement and rehabilitation plan to improve their livelihoods.

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बालकामगार एक जागतिक समस्या

डॉ. रवि आर.पाठेकर

अर्थशास्त्र विभाग प्रमुख

श्री संताजी कला व विज्ञान महाविद्यालय पालांदूर (चौ.) त. लाखनी जि. भंडारा ४४१९०४

गोषवारा:

प्रस्तुत शोधनिबंधात बालकामगारांच्या सामाजिक, आर्थिक आणि शारीरिक परिणामांचा चिकित्सक अभ्यास करण्यात आला आहे. ऐतिहासिक पार्श्वभूमीपासून ते कोविड-१९ मुळे निर्माण झालेल्या नव्या संकटांपर्यंतचा परिप्रेक्ष्य दिला आहे. विविध आकडेवारी आणि तक्त्यांच्या साहाय्याने भारतातील आणि आंतरराष्ट्रीय पातळीवरील बालमजुरीच्या स्थितीचे विश्लेषण करण्यात आले आहे. तसेच राज्यनिहाय तुलना, कार्यक्षेत्रनिहाय विभाजन, आणि बालकामगारांचे वय व लिंगानुसार वर्गीकरण यांची मांडणी केली आहे. बालकामगार निर्मितीमागील कारणे, परिणाम, आणि कायदेशीर, शैक्षणिक व सामाजिक उपाययोजना यांचे सविस्तर विवेचनही करण्यात आले आहे. निष्कर्ष म्हणून, बालमजुरी ही केवळ आर्थिक गरिबीची परिणती नसून ती सामाजिक उदासीनतेचेही द्योतक आहे. त्यामुळे बालकांच्या सर्वांगीण विकासासाठी व्यापक धोरणात्मक आणि प्रशासनिक उपाययोजना तातडीने राबविण्याची गरज अधोरेखित करण्यात आली आहे.

बीज शब्द : *बालमजुरी, बालगुन्हेगारी, बालतस्करी, बालहक्क, विधीसंघर्ष ग्रस्त मुले, अनौपचारिक अर्थव्यवस्था, बालकल्याण.*

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प्रस्तावना -:

एखाद्या समाजाचे भविष्य हे त्या समाजात वावरणाऱ्या सुदृढ आणि स्वस्थ बालकांवर अवलंबून असते. ही बाब प्रसिद्ध इंग्रजी कवी वर्ड्सवर्थ यांनी त्यांच्या प्रसिद्ध ओळीत फारच सुंदरपणे व्यक्त केली आहे—"Child is father of the Man." त्यामुळे कोणत्याही राष्ट्राच्या आरोग्यासाठी आणि प्रगतीसाठी हे अत्यावश्यक ठरते की, त्या राष्ट्राने आपल्या मुलांना बालश्रमिक होण्यापासून संरक्षण दिले पाहिजे, जेणेकरून त्यांच्या मानसिक, शारीरिक, शैक्षणिक आणि भावनिक प्रगतीला अडथळा येणार नाही. मुलांना सामाजिक अन्यायापासून दूर ठेवणे, त्यांना शिक्षणाच्या प्रवाहात आणणे आणि त्यांचा शारीरिक व बौद्धिक विकास नैसर्गिकपणे होण्यासाठी पोषक वातावरण निर्माण करून संधी उपलब्ध करून देणे हे समाजाचे महत्त्वाचे कर्तव्य आहे. आपण सगळेच या समाजाचा भाग आहोत. अनेक वेळा सार्वजनिक ठिकाणी "आमच्याकडे बालकामगार कार्यरत नाहीत" अशा आशयाच्या सूचना फलकांवर वाचायला मिळतात. मात्र प्रत्यक्षात अनेकदा आपल्या डोळ्यांसमोर लहान मुले काम करताना दिसतात. काही वेळा आपल्याकडूनही नकळत अशा लहान मुलांना काम दिले जाते, आणि त्यांचे वय विचारात घेतले जात नाही. हेच लहान वयातील मुलं, जे वय हसण्या–खेळण्याचं असतं, त्या वयात त्यांच्या कोवळ्या खांद्यावर जबाबदाऱ्यांचं ओझं येतं. आपल्या घरातील किंवा आपल्या सभ्य समाजातील मुलं चांगल्या शाळांत शिक्षण घेत असतात, त्यांना कोणत्याही प्रकारच्या कष्टाची झळही लागत नाही. पण दुसरीकडे अनेक गरीब घरातील मुलं बालश्रमिक म्हणून काम करताना दिसतात. असं म्हणतात की, बालपण हा जीवनातील सर्वात सुखद काळ असतो, पण तो प्रत्येकाच्या वाट्याला येतोच असं नाही. आपण समाजात वावरत असताना अनेकदा एखाद्या चहा टपरीवर, उपहारगृहात, सिग्नलवर वस्तू विकताना, बाजारात भाजी विकताना किंवा बांधकामस्थळी विटा उचलताना लहान मुले दिसतात. मग मनात प्रश्न निर्माण होतो, या मुलांचा काय दोष? त्यांच्याही वाट्याला का येऊ नये बालपणाचा आनंद?

परंतु वास्तव फार वेगळं असतं. अनेक लहान मुलांना कुटुंबाच्या उदरनिर्वाहासाठी लहान वयात काम करावं लागतं. आर्थिक गरिबी, अशिक्षितपणा, सामाजिक दुर्बलता यामुळे त्यांच्या आयुष्यातील बालपण हरवतं आणि काट्यांनी भरलेलं वास्तव त्यांच्या वाट्याला येतं.

'क्राय' या सामाजिक संस्थेने भारतातील १५ ते १८ वयोगटातील मुलांविषयी प्रसिद्ध केलेल्या एका अहवालात धक्कादायक माहिती समोर आली आहे. या अहवालात भारतातील या वयोगटातील सुमारे २.३ कोटी मुले बालकामगार असल्याचे नमूद करण्यात आले आहे. यातील सुमारे १.९ कोटी मुलांना शिक्षण व नोकरी यामध्ये समतोल राखता न आल्यामुळे शिक्षण सोडावं लागलं आहे. या आकडेवारीवरून स्पष्ट होते की, देशातील शिक्षणधोरणात आमूलाग्र बदल करणे अत्यंत आवश्यक आहे. विशेषतः दारिद्र्यरेषेखालील कुटुंबातील मुलांना माध्यमिक शिक्षण मोफत उपलब्ध करून देणे गरजेचे आहे, असे अहवालात अधोरेखित करण्यात आले आहे.

अहवालात पुढे असेही नमूद करण्यात आले आहे की, गेल्या वर्षी लहान मुलींच्या अपहरणाच्या घटना मोठ्या प्रमाणात वाढल्या, आणि अपहरण झालेल्या मुलींपैकी ६० टक्के मुली १५ ते १८ वयोगटातील होत्या, तर २५ टक्के मुली बलात्कार प्रकरणातील पीडित होत्या. या दोन गंभीर समस्यांवर उपाययोजना करणे अत्यावश्यक असून, ठोस आणि तात्काळ पावले उचलण्याची गरज आहे, असे अहवालात स्पष्टपणे नमूद करण्यात आले आहे.

उपजीविकेसाठी काम करणारी, साधारणतः चौदा वर्षांखालील वयाची मुले अशी कामे करताना आढळतात, ज्या व्यवसायात विशेष कौशल्याची किंवा प्राविण्याची आवश्यकता नसते. ही मुले प्रामुख्याने हलक्या स्वरूपाच्या कामांमध्ये गुंतलेली असतात. कौटिल्याच्या *अर्थशास्त्र* ग्रंथातील उल्लेखावरून असे दिसते की, प्राचीन भारतातही बालमजुरीची प्रथा अस्तित्वात होती.

अठराव्या शतकाच्या उत्तरार्धात जेव्हा ग्रेट ब्रिटनमध्ये औद्योगिकीकरणाला सुरुवात झाली, तेव्हा गिरण्यांतील धुळीचे व कारखान्यांच्या धुऱ्यांचे साफसफाईचे काम बालकामगारांकडून करून घेतले जात असे.

आंतरराष्ट्रीय कामगार संघटना (ILO) आणि युनिसेफ यांनी १२ जून २०२० रोजी न्यूयॉर्क आणि जिनिव्हा येथे सादर केलेल्या अंदाजानुसार, वर्ष २००० पासून बालमजुरीत ९४ दशलक्षांनी घट झाली होती. तथापि, कोविड-१९च्या संकटामुळे पुन्हा लाखो मुले बालमजुरीकडे ढकलली जाण्याची भीती व्यक्त करण्यात आली.

ILO च्या आकडेवारीनुसार, सध्या जगभरात १६० दशलक्ष मुले बालमजुरीमध्ये अडकलेली आहेत, जे दर दहा मुलांपैकी एक इतके प्रमाण आहे. आफ्रिका, आशिया आणि पॅसिफिक प्रदेश एकत्र घेतल्यास, जगभरातील प्रत्येक १० पैकी ९ बालकामगार या प्रदेशांतील आहेत. बालमजुरी करणाऱ्या मुलांची संख्या अमेरिकेत ११ दशलक्ष, युरोप आणि मध्य आशियात ६ दशलक्ष, तर अरब देशांमध्ये १ दशलक्ष इतकी आहे. दक्षिण आशियात २.९ कोटी बालकामगार असून, त्यापैकी १.७ कोटी भारतात आहेत. म्हणजेच भारतातील एकूण कामगारांपैकी सुमारे ६ टक्के बालकामगार आहेत.

२०२० च्या आकडेवारीनुसार, भौगोलिक विभागांनुसार बालमजुरीचे टक्केवारीतील प्रमाण पुढीलप्रमाणे आहे: आफ्रिका – १८%; ल्याटिन अमेरिका – ४.३%; उत्तर अमेरिका – ०.२%; उत्तर युरोप – ०.२%; पूर्व युरोप – ४.६%; पश्चिम युरोप – ०.२%; दक्षिण युरोप – १.३%; पूर्व आशिया – २.८%; दक्षिण-पूर्व आशिया – ९.२%;

मध्य आशिया – ११.९%; पश्चिम आशिया – ६.३%; दक्षिण आशिया – ४.५%; पॅसिफिक बेटे – ७.७%

१९७१ च्या जनगणनेनुसार, आंध्रप्रदेशात बालकामगारांचे प्रमाण सर्वाधिक म्हणजे ९.२४% होते, तर केरळमध्ये ते सर्वात कमी – फक्त १.३०% होते. एकूण बालकामगारांपैकी ९३% ग्रामीण भागात आढळतात, तर उर्वरित नागरी भागात आहेत. ग्रामीण भागात ही मुले शेती, गुरेपालन, लघुउद्योग इत्यादींमध्ये तर नागरी भागात छोटी दुकाने, उपाहारगृहे आणि घरगुती उद्योगांमध्ये अत्यल्प वेतनावर काम करताना दिसतात.

संशोधनाची उदिष्टे -:

१) बालकामगार निर्माण होण्यामागील कारणांचा शोध घेणे.
२) बालकामगार समस्येच्या परिणामांचा आढावा घेणे.
३) बालकामगार समस्येवरील उपाय योजनांची चर्चा करणे.

संशोधनाची पद्धती -;

प्रस्तुत संशोधनामध्ये प्रामुख्याने दुय्यम स्रोतांचा वापर करण्यात आलेला असून त्यामध्ये प्रकाशित, अप्रकाशित लेख, संदर्भ ग्रंथ, साप्ताहिके, नियतकालिके. वर्तमानपत्रे, संकेतस्थळे इत्यादींचा वापर करण्यात आलेला आहे.

बालमजुरांचा इतिहास -:

२३ जून १७५७ रोजी इंग्रजी इस्ट इंडिया कंपनीने प्लासीच्या लढाईत बंगालचा नबाब सिराज-उद दौलायाचा पराभव केला व ब्रिटीश पूर्व भारताचे स्वामी बनले शेती ,उद्योग आणि व्यवसायाने समृद्ध असलेल्या या देशात मोठ्या प्रमाणात वस्तूंचे उत्पादन करण्यासाठी स्वस्त मजुरांच्या वाढत्या गरजेमुळे अनेक मुलांना मजुरीसाठी भाग पाडले गेले. बऱ्याच बहुराष्ट्रीय कंपन्या सहसा मुलाना कामावर ठेवतात, कारण त्यांना कमी पगारावर भारती करता येते. अनेक भारतीय मुलांना कामावर ठेवण्याचे आणखी एक कारण म्हणजे त्यांना त्यांच्या मुलभूत अधिकाराची माहिती नसते. बालपणातील निरागास्पनाचा वापर अनेकांनी केवळ नफा मिळविण्यासाठी केला. आधुनिक जगाच्या समकालीन बाल्माजुरीमध्ये काही सांस्कृतिक समजुतीनी सुद्धा त्याला आधार दिला आहे. काहींच्या मते मुलांच्या चारित्र्य निर्माण आणि कौशल्य विकासासाठी काम करणे चांगले आहे. अनेक परंपरा अशा आहेत की मुले त्यांच्या पालकांच्या पावलावर पाउल ठेवता, अनेक संस्कृतीमध्ये मुलींच्या शिक्षणाला कमी महत्व दिले जाते आणी या मुलीना घरगुती सेवा पुराविन्यासारख्या कामात झोकून दिल्या जाते.

बालकामगार कोण ?

आंतरराष्ट्रीय कामगार संघटनेच्या व्याखेनुसार 'बालकामगार म्हणजे अशी अल्पवयीन व्यक्ती कि जिच्यावर अकाली प्रौढत्व लादले जाते. त्यांच्या शारिरीक आणि बौद्धिक क्षमतांचा विचार न करता कमी वेतनावर कष्टप्रद कामे करण्याची सक्ती केली जाते. तर संयुक्त राष्ट्रसंघाच्या बालकामगार विषयक समितीने असे प्रतीपादन केले कि बालकामगार लोकसंख्येतील असा घटक आहे कि, ज्यास वेतन देउन कष्टप्रद कामे करण्यास भाग पाडले जाते. तर भारतीय घटनेतील कलम क्रमांक २४ मध्ये कारखान्यात किवा धोकादायक ठिकाणी काम करणारी वयाच्या १४ वर्षाखालील व्यक्ती म्हणजे बालकामगार होय. सध्या देशात होत असलेल्या बालकामगारांच्या शोषणाला पायबंद घालण्यासाठी केंद्र सरकारने कडक पाउल उचलत बालकामगार विषयक कायद्यात बदल करण्याचे ठरवले आहे. या कायद्यात बदल करण्यासाठी सन १९८६ मध्ये केलेल्या संशोधनाला पाया मानले आहे. या अंतर्गत आता बालकामगारांची वयोमर्यादा १४ वर्षावरून १८ वर्ष एवढी वाढविलेली आहे.

कुठे आढळतात बालकामगार ?

भारतात ग्रामीण व शहरी भागात मोठ्या प्रमाणात अल्पवयीन मुले घागुती कामात, छोटे मोठे चाहाची दुकाने, आठवडी बाजार, गुजरी, मच मच्छी मार्केट, मटन मार्केट, रेस्टोरेंट, हॉटेल्स, कापद्फांची दुकाने आणि

मेट्रोपोलीटीन भागात आटोमोबाईल दुरुस्ती व्यवसायांमध्ये काम करत असताना आपणास सहसा दिसून येतात. तसेच कृषी क्षेत्रात जसे कि कापूस शेती, धान शेती, काच, माचीस, पितळ, कुलूप तयार करण्याचे कारखाने, सुईकाम, चिंध्या काढणे, विडी रोलिंग, चटई बनविण्याचा व्यवसाय, खान आणि दगड खान काम, विटा बनवणे आणि चहाच्या बागा. स्ट्रीट चिल्ड्रेन्स वृतपत्र विक्रेते,भिकारी आणि रस्त्यावर राहणारी मुले, बंधपात्रीत मुले म्हणजे ज्या मुलाना वडिलांच्या वारशाने मिळालेल्या जबाबदाऱ्या फेडण्यासाठी श्रम करीत आहेत त्याना बंधन कारक मुले समजली जातात, स्थलांतरित मुले हे भारतासमोरील एक महत्वाचे आव्हान आहे स्थलांतरित मुलाना नेहमीच बांधकामाच्या ठिकाणी मजुरीसाठी भाग पडले जाते. ई. व्यवसायात प्रामुख्याने बालमजूर दिसून येतात.

कोविड-१९ चा परिणाम-

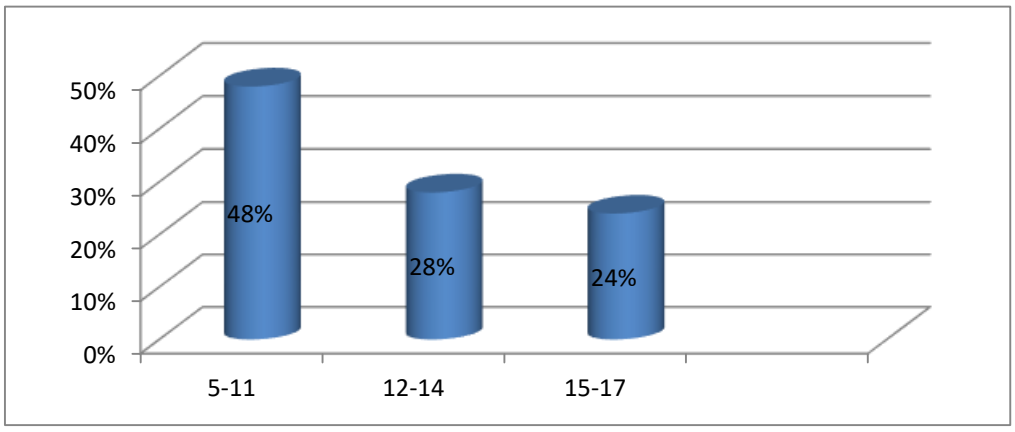
कोविड-१९ सर्वात धक्कादायक परिणाम म्हणजे जगभरातील नोकऱ्या गमावणे हा होय. भारतात कोविड-१९ मुळेमे २०२० पर्यंत १२ कोटी लोग बेरोजगार झाले आहेत असे म्हटले जाते. यातील अनेक नोकऱ्या कपात स्थलांतरित कामगारांसारख्या पुरेशा सामाजिक सुरक्षा जाळ्याशिवाय असलेल्या अधिक दुर्लक्षित समुदायामध्ये झाला आहे. जागतिक अधिकोशाच्या मते भारतात साथीच्या आजारामुळे होणाऱ्या नोकऱ्या गमावल्यामुळे १.२ कोटी लोक दारिद्र्यरेषेखाली जाण्याची शक्यता आहे. आणि हि गरबी सरळ संबंधित बाल्माजुरीशी आहे. मागील एका संशोधनातून असे दिसून आले कि गरिबीत १ टक्के वाढ झाल्यास बाल्माजुरीत सुमारे ०.७ टक्के वाढ होते. कोविड-१९ साथीच्या आजारामुळे आर्थिक धक्के आणि त्याचे परिणाम यामुळे परिस्थिती आणखी बिकट झाली आहे आणि अहवालात असा इशारा देण्यात आला आहे कि २०२२ च्या अखेरीस सुमारे ९० लाख अतिरिक्त मुले बाल मजुरीत ढकलली जाण्याचा धोका आहे.

तक्ता क्र. १ वयोगट व लिंगनिहाय बालमजुरांची विभागणी

अ.क्र..	वयोगट	प्रतिशत	लिंग	
			पुरुष	स्त्री
१	५-११	४८%	५८% (८८ दशलक्ष)	४२% (६४ दशलक्ष)
२	१२-१४	२८%		
३	१५-१७	२४%		

स्रोत- Census – 2011

आलेख क्र. १ बालमजुरांचे वायोगटनिहाय प्रतिशत प्रमाण



वरील सारणी व आलेख क्र. १ वरून स्पष्ट होते कि वयोगट ५-११ मधील बालमजुरांची टक्केवारी ही सर्वात जास्त म्हणजे ४८% असून वयोगट १५-१७ मधील बालमजुरांची संख्या ही २४% आहे. पुरुष बालमजुरांची

टक्केवारी ५८% म्हणजे ८८ दशलक्ष असून स्त्री बालमजुरांची संख्या ही ४२% म्हणजे ६४ दशलक्ष आहे.

तक्ता क्र. २ वरून दिसून येते की, सर्वाधिक बालमजुरीचे प्रमाण 'इतर कामगार' या गटात (35.8%) आहे. या गटात बांधकाम, चहा बागा, हॉटेल, कारखाने, प्लास्टिक, विटा भट्टी, पोलिशिंग, वाहतूक, रस्त्यावर विक्री इत्यादी क्षेत्रांचा समावेश होतो. अशा असंघटित व असुरक्षित क्षेत्रांमध्ये बालमजुरी अधिक आढळते, कारण तिथे कामाच्या अटी, सुरक्षा आणि पगार यांचा अभाव असतो.

तक्ता क्र. २ क्षेत्र निहाय बालमजुरांचे प्रमाण (२०११)

अ.क्र.	कार्यक्षेत्र	संख्या (दशलक्ष मध्ये)	प्रतिशत
1	शेतकरी	2.63	26.0
2	शेती कामगार	3.33	32.9
3	घरगुती उद्योग कामगार	0.52	5.2
4	इतर कामगार	3.62	35.8

स्रोत - Census 2001 and 2011

शेती कामगारांमध्ये बालमजुरीचे प्रमाण (32.9%) दुसऱ्या क्रमांकावर आहे. ग्रामीण भागात मुलांचे शारीरिक श्रम घेणे सामान्य मानले जाते. आर्थिक गरिबीमुळे व कुटुंबाच्या शेतीत किंवा इतरांच्या शेतात मजुरी करण्यासाठी लहान मुलांनाही कामाला पाठवले जाते. शिवाय, शेतकरी म्हणून कार्य करणाऱ्या बालमजुरांचे प्रमाणही लक्षणीय (26%) आहे. यामध्ये अनेक वेळा स्वतःच्या शेतात काम करणारे मुले येतात. ही परिस्थिती कुटुंबातील अपुरी मजुरी, बेरोजगारी, आणि अपुरी शैक्षणिक सुविधा यांमुळे उद्भवते.

घरगुती उद्योगांमध्ये बालमजुरीचे प्रमाण तुलनेने कमी (5.2%) दिसून येते. यात हस्तकला, विणकाम, कागद उद्योग, खेळणी बनवणे, अन्नप्रक्रिया इत्यादींचा समावेश होतो. हे काम प्रामुख्याने घराच्या किंवा लहान युनिट्सच्या माध्यमातून चालते आणि तिथेही बालमजुरी आहे, परंतु प्रमाण तुलनेत कमी आहे.

थोडक्यात, एकूण बालमजुरांपैकी बहुतांश मुले (94.8%) शेती, शेतमजुरी व इतर असंघटित कामांमध्ये गुंतलेली आहेत. ही स्थिती ग्रामीण भागातील आर्थिक दुर्बलता, शिक्षणापासून दुरावा, कौटुंबिक गरिबी व सामाजिक उदासीनता याचे प्रतिबिंब आहे. बालमजुरी संपविण्यासाठी कडक कायदे, त्यांची प्रभावी अंमलबजावणी, ग्रामीण भागात शिक्षण व रोजगाराच्या संधी वाढवणे, ही आवश्यक पावले आहेत.

तक्ता क्र. ३ राज्यनिहाय बालमजुरांचे प्रमाण

अ. क्र.	**राज्ये**	संख्या (दशलक्ष मध्ये)	प्रतिशत
1	उत्तर प्रदेश	2.8	21.5
2	बिहार	1.09	10.7
3	राजस्थान	0.85	8.4
4	महाराष्ट्र	0.73	7.2
5	मध्य प्रदेश	0.70	6.9

स्रोत - Census -2011

तक्ता क्र. ३ वरून स्पष्ट होते की, उत्तर प्रदेश सर्वाधिक बालमजूर असलेले राज्य (21.5%) आहे. तर बिहार दुसऱ्या क्रमांकावर (10.7%) आहे. या राज्यांत बालमजुरीचे प्रमाण अत्यंत चिंताजनक आहे. यामागील प्रमुख कारणे म्हणजे, लोकसंख्येचा प्रचंड भार, शिक्षणाचे कमी प्रमाण, कुटुंबांची आर्थिक परिस्थिती हलाखीची असणे, वडिलोपार्जित व्यवसायात मुलांची सक्तीने मदत घेणे. विणकाम, कागद उद्योग, काच कारखाने इ. उद्योगांमध्ये बालमजुर वापरले जातात.

राजस्थानमध्ये बालमजुरांचे प्रमाण 8.4% आहे; तेथे मुख्यतः हस्तकला, दगड काम, गहू/मोती झोत्याचे काम आणि छोट्या घरगुती उद्योगांमध्ये मुलांचा सहभाग असतो. वाळवंटी प्रदेशातील उपजीविकेच्या मर्यादित संधी बालमजुरीला खतपाणी घालतात. प्रगत समजल्या जाणाऱ्या **महाराष्ट्रात देखील बालमजुरीचे प्रमाण**

7.2% आहे. विशेषतः विटा भट्टी, शेती, साखर कारखाने, इतर असंघटित क्षेत्रांमध्ये मुले काम करतात. शहरांमध्ये रस्त्यावर विक्रेते, हॉटेल्स, वर्कशॉप्समध्येही बालमजुर दिसतात. **मध्य प्रदेश मध्ये** मुख्यतः आदिवासी व ग्रामीण भागात बालमजुरी प्रचलित आहे. जंगलावर आधारित उद्योग, शेती व घरगुती कुटिर उद्योगांमध्ये मुले काम करतात.

वर नमूद पाच राज्यांमध्ये एकूण 55% पेक्षा अधिक बालमजूर आहेत, जे राष्ट्रीय पातळीवर अत्यंत चिंताजनक बाब आहे. या राज्यांमध्ये बालमजुरी वाढण्यामागील मुख्य कारणांची चर्चा पुढील प्रामाणे करता येईल.

बालकामगार निर्माण होण्यामागची कारणे -

१) **दारिद्र्य** – हे भारतातील या समस्येचे सर्वात मोठे कारण आहे. गरीब कुटुंबातील मुलांना त्यांच्या कुटुंबाला मदत करण्यासाठी अनेकदा काम करावे लागते. ते कारखान्यांमध्ये, शेतात किवा अनौपचारिक अर्थव्यवस्थेत काम करीत असताना दिसून येतात. म्हणून कौटुंबिक दारिद्र्य हे एक बालकामगार निर्माण होण्यामागील महत्वाचे कारण आहे.

२) **अनौपचारिक अर्थव्यवस्थेची वाढ.** अनौपचारिक अर्थव्यवस्था लहान व्यवसाय आणि स्वयंरोजगार कामगारांनी बनलेली असते. अनौपचारिक क्षेत्रा मध्ये बालकामगार कायद्याची अंमलबजावणी करणे अवघड असल्याने अनौपचारिक अर्थव्यवस्था त्याना कामावर ठेवते.

३) **दर्जेदार शिक्षणाचा अभाव** – : भारतातील अनेक मुलांना चांगल्या शाळांमध्ये प्रवेश मिळत नाही. जेव्हा मुलांना दर्जेदार शिक्षण मिळत नाही तेव्हा ते शाळेत जाण्याएवजी कामावर जातात.

४) **जागरूकतेचा अभाव** -: बहुतेक पालकांना या समस्येच्या शारिरीक, मानसिक आणि बौद्धिक दुष्परिणामां बद्दल माहिती नसते. त्यामुळ कित्येक पालक कुटुंबाला हातभार लागेल या हेतूने लहान मुलांना कामावर पाठवतात.

५) **बेरोजगारी** -: भारतामध्ये बेरोजगारीचे प्रमाण अधिक असल्या मुळे कुटुंबातील प्रौढ सदस्यांना काम मिळत नाही त्यामुळे कुटुंबाचे उत्पन्न घटते व कुटुंबातील सदस्यांना आर्थिक समस्यांना तोंड द्यावे लागते. अशा परिस्थितीत कुटुंबातील मुलांना सक्तीने कामावर पाठवावे लागते यामधून सुद्धा बालकामगार निर्माण होतात.

६) **कौटुंबिक समस्या** -: कौटुंबिक समस्यांमध्ये कुटुंबाचे उत्पन्न कमी पडत असल्या मुळे काही पालक आपल्या मुलांना सक्तीने कामावर पाठवतात किवा काहींच्या बाबतीत नाईलाजाने काम करण्यास भाग पडते. तसेच कुटुंबातील आजारपण,कुटुंबातील सदस्यांमधील व्यसनाधीनता इत्यादी अनेक कौटुंबिक समस्या बालकामगार निर्मितीसाठी जबाबदार आहेत.

७) **पालाकांमधील निरक्षरता** -: पालकांमधील निराक्षार्तेमुळे मुलांना शिक्षणापासून वंचित ठेवले जाते आणि कधी सक्तीने तर कधी नाईलाजाने काम करण्यास प्रवृत्त केले जाते. अल्प वेतनावर अशी मुले राबतात. मुलांना शिक्षण देणे हि एक प्रकारे पालकांनी मुलांमध्ये केलेली गुंतवणूक समजली जाते. या गुंतवणुकीचा दीर्घकालीन फायदा पालकांना होत असतो परंतु भविष्यात विलंबाने होणार्या फायद्यापेक्षा ताबडतोब होणाऱ्या फायद्यास पालक प्राधान्य देतात. त्यामुळे मुलांना चांगले शिक्षण देण्याकडे पालकांचा कल नसतो. व हे सगळे पालकांच्या निरक्षरते मुळे घडते.

८) **अनाकर्षक शैक्षणिक परिसर** -: शाळांचे आंतर्बाह्य स्वरूप निराशाजनक व शाळेचे शैक्षणिक व्यवस्थापन उत्साहवर्धक नसल्यामुळे मुलांचे शाळेत मन लागत नाही शिकण्यात त्यांना आवड निर्माण होत नाही. म्हणून अनेक मुले शिक्षण अर्धवट सोडून नोकरी व्यवसायाकडे किवा माजुरीकडे वळतात.

९) **मोठे कुटुंब** –: पालन पोषण, संगोपन योग्य प्रकारे होऊ शकत नाही. कुटुंबांचे कमी उत्पन्न आणि

कुटुंबातील सदस्य संख्या जास्त यामुळे कुटुंबातील सदस्यांच्या गरजा भागविणे कुटुंबाला कठीण जाते आणि त्यामुळे अशा कुटुंबात मुलांना कामावर पाठविले जाते.

१०) स्थलांतरण -: आपल्या मूळ गावी कुटुंबाचा चरितार्थ चालविणे कठीण झाल्यामुळे अनेक कुटुंबांनी शहरी भागात स्थलांतर केलेले आहे. स्थलांतर करण्या मागचा त्यांचा उद्देश स्वताला आणि त्याच बरोबर त्यांच्या मुलांना शहरात व्यवसाय मिळून कुटुंबाचा चरितार्थ भागविणे हा असल्याचा जाणविते.

११) पालकांचे निधन -: कुटुंबातील पालकांचे निधन हे एक कारण बालकामगार निर्माण होण्यासाठी कारणीभूत आहे.

बालकामगार समस्येचे परिणाम -:

१) आरोग्याची समस्या -: कोवळ्या वयातच परिस्थितीच्या रेट्यामुळे बाल्काम्गाराना कुटुंबाच्या चरितार्थासाठी सक्तीने कामे करावी लागत असल्याने त्याचे वाईट परिणाम बालकांवर होत आहे. नोकरी व्यवसायाच्या ठिकाणी त्यांना अनेक तास काम करावे लागते व कामाच्या स्वरूपानुसार विशिष्ट शारिरीक हालचाली कराव्या लागतात. तसेच कामाच्या ठिकाणी स्वच्छतेचा अभाव, आरोग्यास हानिकारक पदार्थांचे सानिध्य, पिण्याच्या पाण्याची समस्या अशा अनेक कारणांचा परिणाम त्यांच्या शरीरावर होतो आणि पर्यायाने वाईट परिणाम त्यांच्या आरोग्यावर होतो.

२) वाढती व्यसनाधीनता -:

बालकामगारांच्या घराबाहेरील नोकरी व्यवसायामुळे त्यांच्यावर त्यांच्या पालकांचे प्रत्यक्ष नियंत्रण नसल्यामुळे बालकामगार मिळालेल्या स्वातंत्र्यामुळे व्यसनांच्या आहारी जातात.

३) वाढती बालगुन्हेगारी - : १९८६ च्या कायद्यात १६ वर्षाखालील गुन्हेगारांना विधीसंगर्ष ग्रस्त म्हटले जाते. विधीसंघर्ष ग्रास्तांची आकडेवारी २००० मध्ये १६४१ गुन्हे दाखल झाल्याची असून २०१० माडे ४३१५,तर २०११ मध्ये ४७५५ गुन्ह्यांची नोंद झाली आहे. दहा वर्षात अशा गुन्हांच्या संख्येत तीनपटीने वाढ झाली असून हि धोक्याची घंटा मानली जाते.

४) बाल तस्करी समस्या -: बाल तस्करी हि बालमजुरीशी निगडीत आहे. ज्या मुलांची तस्करी झाली आहे त्यांना वेश्या व्यवसायात, बाल विवाह किवा दत्तक घेण्यास बाग पाडले जाते. कारण ते स्वस्त किवा बिनपगारी कामगार असतात. त्यांना घरातील नोकर किवा भिकारी म्हणून काम करण्यास भाग पाडले जाते आणि सशस्त्र गटांमध्ये सुद्धा भारती न्केली जाते.

बालकामगार समस्येवरील उपाय योजना -:

१) **घटनात्मक तरतुदी -:** अनुच्छेद २१ A संविधान (आठवी दुरुस्ती) कायदा,२००२ ने भारतीय राज्य घटनेत अनुच्छेद २१-A समाविष्ट केला आहे ज्या मुले ६-१४ वर्ष वयोगटातील सर्व मुलांना मोफत आणि सक्तीचे शिक्षण देण्याचा हा मुलभूत अधिकार आहे. कलम-२३ माणसाच्या वाहतुकीवर बंदी आणि सक्तीचे श्रम , कलम-२४ १४ वर्षा खालील कोणत्याही मुलाला कोणत्याही कारखान्यात किंवा खाणीत काम करण्यासाठी किंवा इतर कोणत्याही कामात गुंतवून ठेवता येणार नाही.

२) **इतर उपक्रम -**: पेन्सील पोर्टल- नो चाईल्ड लेबर धोरणाच्या प्रभावी अंमलबजावणीसाठी कामगार आणि रोजगार मंत्रालयाने एक इलेक्ट्रोनिक प्ल्याटफॉर्म सुरु केला आहे. असंघटीत क्षेत्रातील मुलांची सुटका आणि पुनप्राप्ती ऑपरेशन स्माईल, ऑपरेशन मुस्कान ई. अनेक एन जी ओ बाल पुनर्वसनासाठी काम करतात जसे कि बचपन बचाओ आंदोलन, कैलाश सत्यार्थी चिल्ड्रेन फाउंडेशन, सेव्ह द चिल्ड्रेन ई.

गुरुपाद स्वामी समिती, १९७९- बालमजुरीच्या मुद्याचा अभ्यास करण्यासाठी हि समिती स्थापन करण्यात आली आणि काम करणाऱ्या मुलांच्या समस्या

हाताळण्यासाठी अनेक धोरणात्मक दृष्टीकोनाची शिफारस केली.

आंतरराष्ट्रीय कामगार संघटनेने २००२ मध्ये बालकामगार विरुद्ध जागतिक दिवस स्थापन केला. दरवर्षी १२ जून हा दिवस जगभरात साजरा केला जातो.

३) गरिबी,बेरोजगारी,आणि कमी कमाई या सर्व बाबी बालमजुरीशी निगडीत आहेत. कुटुंबाची आर्थिक स्थिती सुधारण्यासाठी आणि मुलाना कामावर पाठविण्याची गरज दूर करण्यासाठी सामाजिक सुरक्षा कार्यक्रम आणि रोख हस्तातरनासाठी दृढ प्रयत्न केले पाहिजेत.

४) शैक्षणिक संस्थांमध्ये प्रवेश सुनिश्चित करण्यासाठी तसेच शिक्षणाची गुणवत्ता आणि प्रासंगीता वाढविण्यासाठी शैक्षणिक पायाभूत सुविधांमध्ये सुधारणा करणे महत्वाचे आहे.

५) बाल्माजुरीशी संबधित विद्यमान भारतीय कायदे लागू करणे आवश्यक आहे.

६) जनहिताला चालना देण्यासाठी आणि बाल शोषण आणि बालमजुरीच्या धोक्याबद्दल व्यापक ज्ञान वाढविण्यासाठी राष्ट्रव्यापी प्रयत्न सुरु करणे आवशक आहे.

७) ज्या संस्था व उद्योग बालकामगारांच्या प्रतेक्ष व अप्रतेक्ष पणे गुंतलेली असतील अशा उद्योगांना सरकारने काळ्या यादीत टाकून त्याना सरकारतर्फे प्राप्त होणाऱ्याविविध सवलती बंद कराव्यात.

निष्कर्ष -:

बालकांच्या कल्याणासाठी, समाजाच्या प्रगतीसाठी आणि राष्ट्राच्या शाश्वत विकासाठी बालमजुरीला संबोधित करणे आणि दूर करणे महत्वाचे आहे. मुलांच्या हक्काचे संरक्षण आणि त्यांचा सर्वांगीण विकास सुनिश्चित करण्यासाठी एकत्रित प्रयत्न, सर्वसमावेशक धोरणे आणि विविध भागधारकांच्या सक्रीय सहभागाची आवशकता आहे. बालकांच्या कायद्याच्या अंमलबजावणीत असंख्य समस्या आहेत. देशाचे समृद्ध भविष्य सुनिश्चित करण्यासाठी या समस्यांकडे अत्यंत तातडीने लक्ष देणे आवशक आहे. तसेच भारताने युएन च्या धरतीवर २०२५ पर्यंत सर्व प्रकारातील बालमजुरीचे उच्चाटन करण्याच्या उद्दिष्टांना समोर ठेऊन जे ठोस पावले उचललेली आहेत त्यात भारत कितपत यशस्वी होतो हे पाहणे हि तितकेच महत्वाचे असेल.

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महाराष्ट्रातील सार्वजनिक आरोग्य व्यवस्था स्थिती: एक आर्थिक विश्लेषण

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गोषवारा :

प्रस्तुत शोधनिबंधात महाराष्ट्रातील सार्वजनिक आरोग्य व्यवस्थेचा आर्थिक दृष्टिकोनातून चिकित्सक अभ्यास करण्यात आला आहे. औद्योगिकदृष्ट्या प्रगत असलेल्या महाराष्ट्रातही आरोग्य सेवांमध्ये ग्रामीण-शहरी, सामाजिक व आर्थिक असमतोल कायम आहे. या शोधनिबंधात राज्यातील आरोग्यसेवेची पायाभूत रचना, सरकारी व खासगी गुंतवणूक, प्रमुख आरोग्यविषयक योजनांची अंमलबजावणी, तसेच राष्ट्रीय व आंतरराष्ट्रीय आरोग्य निर्देशांकांच्या आधारे महाराष्ट्राची स्थिती विश्लेषित केली आहे. कोविड-19 नंतर टेलीमेडिसीन, आयुष्मान भारत व MPJAY यासारख्या योजनांचा प्रभाव तसेच आरोग्य व आर्थिक विकास यातील संबंध विचारात घेऊन सामाजिक न्याय, आर्थिक स्थैर्य व समावेशक विकासाच्या दृष्टीने धोरणात्मक सूचना सुचवण्यात आल्या आहेत. एकंदरीत, आरोग्यावरचा सार्वजनिक खर्च वाढवणे, ग्रामीण व आदिवासी भागात सेवा पोहोचवणे, आणि खासगी आरोग्य संस्थांचे प्रभावी नियमन या माध्यमातून महाराष्ट्राच्या आरोग्य व्यवस्थेचे सक्षमीकरण करता येईल, असा या शोधनिबंधाचा निष्कर्ष आहे.

बीजशब्द: *सार्वजनिक आरोग्य व्यवस्था, महाराष्ट्र, आरोग्य खर्च, आरोग्य निर्देशांक, आर्थिक विकास, धोरण, सामाजिक समता.*

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प्रस्तावना

सामाजिक आणि आर्थिक विकासासाठी आरोग्य ही एक प्रत्येकाची मूलभूत गरज आहे. महाराष्ट्र हे भारतातील औद्योगिकदृष्ट्या पुढारलेले राज्य असले, तरीही राज्याच्या आरोग्य सेवा वितरणात असमानता आणि अडथळे कायम आहेत. ग्रामीण-शहरी विभाग, आर्थिक असमानता आणि जीवनशैलीतील बदल यामुळे आरोग्य व्यवस्था अनेक आव्हानांशी सामना करत आहे. सार्वजनिक खर्च, खासगी आरोग्य क्षेत्र, विमा प्रणाली आणि मानव संसाधन यांचा आरोग्यावर थेट प्रभाव पडतो. कोविड-19 काळात आरोग्य क्षेत्रातील उणिवा स्पष्टपणे समोर आल्या. शासकीय रुग्णालयांवरचा वाढीव ताण, ऑक्सिजनची कमतरता, रुग्णवाहिकांची अपुरी सेवा आणि आरोग्य कर्मचाऱ्यांची संख्या कमी असल्याचे दिसून आले. या काळात खासगी क्षेत्राकडून जास्त खर्च आकारण्यात आला, ज्यामुळे गरीब वर्ग अधिक त्रस्त झाला. प्रस्तुत शोधनिबंधाचा उद्देश महाराष्ट्रातील आरोग्य स्थितीचा विश्लेषनात्मक आढावा घेणे असून, आरोग्याचा आर्थिक विकास आणि अर्थव्यवस्थेच्या स्थैर्याशी कसा संबंध आहे हे स्पष्ट करणे आहे. राज्यातील आरोग्य व्यवस्था, प्रमुख आरोग्यविषयक योजना, आरोग्य निर्देशांक, आरोग्य आणि आर्थिक विकास आणि सार्वजनिक खर्च यांचा अभ्यास करून महाराष्ट्रातील सार्वजनिक आरोग्य व्यवस्था,अडचणी, आणि सुधारणा यांचा समग्र आढावा घेण्याचा या शोध निबंधात प्रयत्न केला आहे.

सार्वजनिक आरोग्य व्यवस्था –

सार्वजनिक आरोग्य ही एक व्यापक व बहुआयामी संकल्पना आहे. यात संपूर्ण समाजाच्या आरोग्याची काळजी घेणे अंतर्भूत आहे. आरोग्य व्यवस्थेचा मुख्य उद्देश केवळ आजारांचे उपचार करणे नसून, आजारांचे

प्रतिबंध, लोकांचे आयुर्मान वाढवणे आणि कार्यक्षम जीवनशैलीस प्रोत्साहन देणे हा आहे. जागतिक आरोग्य संघटनेच्या (WHO) मते, आरोग्य म्हणजे केवळ रोग व अशक्तपणाचा अभाव नव्हे, तर पूर्ण शारीरिक, मानसिक आणि सामाजिक कल्याणाची स्थिती होय.

सार्वजनिक आरोग्याची वैशिष्ट्ये:

सार्वजनिक आरोग्य यंत्रणा माहिती संकलन, पाहणी आणि विश्लेषण यांसारख्या माध्यमातून आजारांचे स्वरूप समजून घेते, साथीच्या रोगांवर लक्ष ठेवते, आणि त्यांच्यावर नियंत्रण मिळवण्यासाठी प्रत्युत्तरात्मक व प्रतिबंधात्मक उपाययोजना राबवते. यामध्ये लसीकरण मोहिमा, आरोग्य शिक्षण, जनजागृती, स्वच्छता चळवळी तसेच चांगल्या वर्तनासाठी प्रोत्साहन देणाऱ्या धोरणांचा समावेश होतो.

सार्वजनिक आरोग्याचा आणखी एक महत्त्वाचा पैलू म्हणजे सामाजिक समता व आरोग्य न्याय समाजातील सर्व घटकांपर्यंत गुणवत्तापूर्ण आणि परवडणारी आरोग्यसेवा पोहोचवणे हा त्याचा मूलभूत उद्देश आहे.

महाराष्ट्रात आरोग्य सेवा तीन स्तरांवर विभागलेली आहे — प्राथमिक आरोग्य केंद्रे (PHC), जिल्हा रुग्णालये, आणि खासगी रुग्णालये. या पायाभूत व्यवस्थेच्या माध्यमातून राज्य सरकार प्राथमिक ते तृतीय स्तरीय आरोग्यसेवा पुरवते. मुंबई, पुणे, नाशिक, नागपूर यांसारख्या शहरी भागांत आधुनिक सुविधा उपलब्ध असल्या तरी, विदर्भ, मराठवाडा आणि आदिवासी जिल्ह्यांत आरोग्य यंत्रणेची स्थिती तुलनात्मकदृष्ट्या दुर्बल आहे.

भारताची आरोग्य व्यवस्था मुख्यतः सार्वजनिक व खासगी या दोन स्तरांवर आधारित आहे. AIIMS, JIPMER सारख्या तृतीयस्तरीय उत्कृष्ट शासकीय रुग्णालयांसोबतच, खासगी रुग्णालये व वैद्यकीय महाविद्यालये देखील महत्त्वाची भूमिका बजावत आहेत. मात्र, ग्रामीण भागांतील प्राथमिक आरोग्य केंद्रांची संख्या, कुशल मनुष्यबळाची कमतरता, औषधांची अनुपलब्धता आणि आरोग्य शिक्षणाचा अभाव ही मोठी आव्हाने आहेत. कोविड-१९ महामारी ही भारताच्या आरोग्य व्यवस्थेसाठी एक मोठी कसोटी ठरली. या काळात टेलिमेडिसिन, मोबाइल हेल्थ युनिट्स, आणि ई-संजीवनी यांसारख्या नवकल्पनांनी ग्रामीण व दुर्गम भागातही आरोग्यसेवा पोहोचवण्याची नवी दिशा दिली आहे.

सार्वजनिक आरोग्य सुविधा -

भारतात तसेच महाराष्ट्रात आरोग्य यंत्रणेमध्ये काही महत्त्वाचे बदल घडले असले, तरीही सार्वजनिक आरोग्य सुविधांचा दर्जा आणि त्यांची पोहोच यामध्ये अजूनही अनेक अडथळे कायम आहेत. महाराष्ट्र सरकारने सार्वजनिक आरोग्य सेवा पुरवण्यासाठी प्राथमिक आरोग्य केंद्रे (PHC), उपजिल्हा व जिल्हा रुग्णालये आणि वैद्यकीय महाविद्यालयांशी संलग्न रुग्णालये कार्यरत ठेवली आहेत. मात्र, या काळात खासगी आरोग्य संस्थांची वाढ मोठ्या प्रमाणावर झाली असून, आरोग्यसेवा खासगीकरणाच्या दिशेने वळताना दिसत आहे.

सरकारी दस्तऐवजांनुसार, भारताचा सार्वजनिक आरोग्य खर्च सलग वाढत असून तो जीडीपीच्या २०१९–२० मध्ये सुमारे १.३५%, २०२०–२१ मध्ये १.६% आणि २०२१–२२ (RE) मध्ये जवळजवळ २.२% पर्यंत वाढला, २०२२–२३ (BE) मध्ये अंदाजे २.१% इतका होता तरीही हा स्तर जागतिक आरोग्य संघटनेच्या सुचविलेल्या सुमारे ५% आणि राष्ट्रीय आरोग्य धोरणातील "२०२५ पर्यंत २.५%" या उद्दिष्टांपेक्षा खूपच कमी आहे. त्यामुळे ग्रामीण भागांतील प्राथमिक आरोग्य सेवा आजही अपुरी व कमकुवत आहे. यामुळे या दशकात आरोग्यसेवांच्या क्षेत्रात सार्वजनिक गुंतवणूक वाढविण्याची गरज अधोरेखित झाली आहे.

केंद्रीय बजेटमधील आरोग्य खात्याचा वाटा २०१४–१५ मध्ये सुमारे १.८% होता, जो २०१७–१८ मध्ये वाढून २.४% झाला आणि नंतर कमी होऊन २०२२–२३ पर्यंत अंदाजे २% च्या आसपास राहिला. महाराष्ट्रात मात्र

राज्याच्या एकूण खर्चाचा फक्त सुमारे ४–४.६% वाटा आरोग्य विभागासाठी राखीव आहे. हा वाटा इतर अनेक राज्यांच्या सरासरीपेक्षा कमी असून आरोग्यावरच्या गुंतवणुकीची आवश्यकता अधोरेखित करतो. कोविड नंतरच्या काळात प्राथमिक आणि प्रतिबंधात्मक आरोग्य सेवांमध्ये मोठ्या प्रमाणात गुंतवणूक वाढवण्याची गरज आहे. महाराष्ट्र राज्याच्या आरोग्य सुविधांची स्थिती खालीलप्रमाणे आहे.

तक्ता क्र. १ : महाराष्ट्र राज्याच्या आरोग्य सुविधांची स्थिती

संस्थेचे प्रकार	**२०२०-२१**	**२०२४-२५**
उपकेंद्रे	१०,६६८	१०,७६५
प्राथमिक आरोग्य केंद्रे	१,८३०	१,९३६
सामुहिक आरोग्य केंद्रे	३६४	३६७
प्राथमिक आरोग्य पथके	१०८	१२१
फिरती वैद्यकीय पथके	५८	६६
उपजिल्हा रुग्णालये	९१	१०१
जिल्हा रुग्णालये	२३	१९
वैद्यकीय महाविद्यालयाशी संलग्न रुग्णालये	१९	३२
वैद्यकीय महाविद्यालयाशी संलग्न प्राथमिक आरोग्य केंद्रे	-	६
सामान्य रुग्णालये	८	८
स्त्री रुग्णालये	१३	२२
मनोरुग्णालये	४	४
कृष्ठरोग रुग्णालये	४	२
क्षयरोग रुग्णालये	४	५
विभागीय संदर्भ सेवा रुग्णालये	२	२

स्त्रोत: *महाराष्ट्राची आर्थिक पाहणी २०२४-२५ (आधार : आरोग्य सेवा संचालनालय, महाराष्ट्र शासन)*

वरील तक्त्यावरून असे दिसून येते कि, २०२०-२१ ते २०२४-२५ या कालावधीत महाराष्ट्रातील आरोग्य संस्थांच्या संख्येत काही महत्त्वपूर्ण बदल झाले आहेत. उपकेंद्रे, प्राथमिक आरोग्य केंद्रे आणि सामुहिक आरोग्य केंद्रांची संख्या थोड्या प्रमाणात वाढली असून प्राथमिक आरोग्य सेवा अधिक सक्षम करण्याचा प्रयत्न झालेला दिसतो. प्राथमिक आरोग्य पथके १०८ वरून १२१ झाली असून फिरती वैद्यकीय पथके ५८ वरून ६६ झाली आहेत, यावरून ग्रामीण तसेच दुर्गम भागांमध्ये आरोग्यसेवा पोहोचवण्यासाठी विशेष प्रयत्न करण्यात आले आहेत. उपजिल्हा रुग्णालयांची संख्या ९१ वरून १०१ वर गेली असून वैद्यकीय महाविद्यालयांशी संलग्न रुग्णालये १९ वरून ३२ झाली आहेत, हे उच्चस्तरीय आरोग्य सेवांचा विस्तार दर्शवते. जिल्हा रुग्णालयांची संख्या मात्र २३ वरून १९ वर घसरली असून ही घट प्रशासनिक पुनर्रचना किंवा इतर संस्थांमध्ये समावेशामुळे झाली असण्याची शक्यता आहे. याशिवाय, वैद्यकीय महाविद्यालयांशी संलग्न नवीन ६ प्राथमिक आरोग्य केंद्र आहे. स्त्री रुग्णालयांची संख्या १३ वरून २२ वर वाढली असून क्षयरोग रुग्णालयेही ४ वरून ५ झाली आहेत, तर कृष्ठरोग रुग्णालयांची संख्या ४ वरून २ वर कमी झाली आहे. एकूणच, आरोग्य सेवांचा विस्तार, विविध रोगांवर लक्ष केंद्रित करणे आणि उच्च गुणवत्तेच्या उपचारांची उपलब्धता वाढवणे यावर राज्य शासनाने भर दिल्याचे या आकडेवारीतून स्पष्ट होते.

शाश्वत विकास ध्येय - ३ मध्ये सर्व वयोगटातील लोकांसाठी उत्तम आरोग्याची सुनिश्चिती करणे आणि चांगल्या जीवनमानास चालना देणे यामध्ये महाराष्ट्र राज्याने सातत्याने प्रगती केलेली आहे.

शासनाच्या महत्त्वाच्या आरोग्यविषयक योजना

महाराष्ट्र आणि भारत सरकारने खालील योजनांच्या माध्यमातून आरोग्यविषयक सुधारणा घडवण्याचा प्रयत्न केला आहे. महात्मा फुले जनआरोग्य योजना (MPJAY) – गरीब व वंचित घटकांसाठी मोफत उपचार सेवा, राष्ट्रीय आरोग्य अभियान (NHM) – आरोग्य सेवांचे मजबुतीकरण, मिशन पोषण 2.0 – बालक व मातांसाठी पोषण कार्यक्रम, ई-संजीवनी – डिजिटल आरोग्य सल्ला सेवा इत्यादी तरीही ग्रामीण

भागात डॉक्टरांची कमतरता, अत्यावश्यक औषधांचा अभाव, आणि वैद्यकीय उपकरणांची कमतरता ही आव्हाने अजूनही कायम आहेत. शहरी भागात जरी आधुनिक सुविधा उपलब्ध असल्या, तरी आर्थिक असमतोलामुळे गरीब वर्गाला आरोग्यसेवा सहज उपलब्ध होत नाही.

'निरोगी महाराष्ट्र' या संकल्पनेचा गाभा म्हणजे – समावेशक, परवडणारी, गुणवत्तापूर्ण आणि न्याय्य आरोग्यसेवा, ही केवळ सामाजिक गरज नसून, राज्याच्या आर्थिक प्रगतीची अनिवार्य अट आहे.

तक्ता क्र. २ : महाराष्ट्रातील राष्ट्रीय आरोग्य अभियानांतर्गत योजनांवरील खर्च व लाभार्थी (2024-25)

योजना / कार्यक्रमाचे नाव	**खर्च (₹ कोटी) / लाभार्थी (२०२४-२५)**
राष्ट्रीय ग्रामीण आरोग्य अभियान (NRHM)	₹२,३६२.१९ कोटी
टेलीमेडिसीन सुविधा	२३ जिल्हा रुग्णालये, ३९ उपजिल्हा, ६ वैद्यकीय महाविद्यालये
राष्ट्रीय नागरी आरोग्य अभियान (NUHM)	₹२७७.२० कोटी
आपला दवाखाना योजना	९८ शहरांत १०० दवाखाने मंजूर
प्रजनन, माता, बालक व किशोर आरोग्य कार्यक्रम (RMNCH+A)	₹२८७.१७ कोटी
पल्स पोलिओ कार्यक्रम	₹०.५३ कोटी, लाभार्थी: १६.२६ लाख
राष्ट्रीय अंधत्व नियंत्रण कार्यक्रम	₹६.४१ कोटी, लाभार्थी: ७.४८ लाख
हिंदुहृदयसम्राट बाळासाहेब ठाकरे आपला दवाखाना योजना	₹२८.०१ कोटी लाभार्थी; ४२.४१ लाख बाह्यरुग्ण; ४.९८ लाख प्रयोगशाळा तपासणी; ६८,३७२ गर्भवती तपासणी
आयुष्मान आरोग्य मंदिर	२०२४ अखेर: १२,०४४ केंद्रे
राष्ट्रीय वृद्धापकाळ आरोग्य सेवा कार्यक्रम	₹९७.९० कोटी
राष्ट्रीय कर्णबधिरता प्रतिबंध व नियंत्रण कार्यक्रम	₹०.०१६ कोटी (१.६० लाख)
राष्ट्रीय मानसिक आरोग्य कार्यक्रम	₹१.०४ कोटी
राष्ट्रीय आयोडीन न्यूनता विकार नियंत्रण कार्यक्रम	₹४९.४७ कोटी
राष्ट्रीय एड्स नियंत्रण कार्यक्रम	₹९६.६१ कोटी
महाराष्ट्र आपत्कालीन वैद्यकीय सेवा (एमईएमएस)	९३७ रुग्णवाहिका, लाभार्थी: ७.९९ लाख
महात्मा फुले व आयुष्मान भारत योजना	२.९२ कोटी कार्ड, लाभार्थी: ४.८६ लाख
मानवी अवयव प्रत्यारोपण केंद्रे	२०२४ अखेर: २८४ केंद्रे
राज्य रक्त संक्रमण परिषद	रक्तकेंद्रे: ३९३

संदर्भ : *महाराष्ट्राची आर्थिक पाहणी २०२४-२५ आधार :महाराष्ट्र आरोग्य व कुटुंब कल्याण विभाग, वार्षिक अहवाल २०२४–२५, राष्ट्रीय आरोग्य अभियान (NHM) अंतर्गत प्रकाशित शासकीय माहितीपत्रके व बजेट दस्तऐवज, https://nhm.gov.in व https://arogya.maharashtra.gov.in*

वरील आकडेवारीनुसार असे दिसून येते कि, २०२४-२५ या वर्षात महाराष्ट्र शासनाने राष्ट्रीय आरोग्य अभियानांतर्गत आरोग्य सेवांमध्ये भरीव गुंतवणूक केली आहे. राष्ट्रीय ग्रामीण आरोग्य अभियानासाठी सर्वाधिक ₹२,३६२.१९ कोटींचा निधी मंजूर करण्यात आला असून टेलीमेडिसीनसारख्या नवतंत्रज्ञान सुविधांचा वापर जिल्हा, उपजिल्हा आणि वैद्यकीय महाविद्यालयांमध्ये करण्यात आला आहे. नागरी भागातील ९८ शहरांमध्ये 'आपला दवाखाना' योजनेअंतर्गत १०० केंद्रे मंजूर झाली असून ₹२७७.२० कोटींचा निधी मंजूर आहे.

मातृत्व व बालकांच्या आरोग्यासाठी RMNCH+A योजनेसाठी ₹२८७.१७ कोटी खर्च झाले आहेत. पल्स पोलिओ (१६.२६ लाख लाभार्थी) व अंधत्व नियंत्रण कार्यक्रम (७.४८ लाख लाभार्थी) यांना अनुक्रमे ₹०.५३ कोटी आणि ₹६.४१ कोटी खर्च करण्यात आले.

हिंदुहृदयसम्राट बाळासाहेब ठाकरे आपला दवाखाना योजना अंतर्गत ४२.४१ लाख बाह्यरुग्ण, ४.९८ लाख प्रयोगशाळा तपासण्या व ६८,३७२ गर्भवती तपासण्या झाल्या असून यासाठी ₹२८.०१ कोटी खर्च करण्यात आले. आयुष्मान आरोग्य मंदिर योजनेअंतर्गत १२,०४४ केंद्रे सुरू असून, वृद्ध, कर्णबधिर, मानसिक, आयोडीनसंबंधी आजार यांसाठी वेगवेगळ्या योजनांवर भर दिला गेला आहे.

आपत्कालीन सेवा म्हणून ९३७ रुग्णवाहिकांद्वारे जवळपास ८ लाख लोकांना सेवा मिळाली आहे. महात्मा फुले व आयुष्मान भारत योजनेतून २.९२ कोटी कार्ड वाटप झाले असून ४.८६ लाख लोकांना थेट लाभ मिळाला आहे. मानवी अवयव प्रत्यारोपणासाठी २८४ केंद्रे, ३९३ रक्तकेंद्रे, व विविध साथीच्या (राष्ट्रीय क्षयरोग, कृष्ठरोग, कीटकजन्य) व असंसर्गजन्य रोग नियंत्रण उपक्रमही प्रभावीपणे कार्यरत आहेत. आरोग्य सेवेचा ग्रामीण-शहरी समतोल, विशेषतः गरीब व दुर्बल घटकांसाठी सुविधा, आधुनिक सुविधा जसे टेलीमेडिसीन व डिजिटल कार्ड, आणि बाल, मातृत्व, वृद्ध, मानसिक आरोग्यावर केंद्रित योजनांचा प्रभावी अंमल महाराष्ट्राच्या सार्वजनिक आरोग्य धोरणाच्या यशाची साक्ष देतो.

भारताचे प्रमुख आरोग्य व विकास निर्देशांक

2015 ते 2025 या दशकात भारताने आरोग्यविषयक अनेक निर्देशांकांमध्ये संमिश्र प्रगती केली आहे. मानवी विकास निर्देशांक (HDI) मध्ये 2015 मध्ये 0.624 स्कोअर असून भारत 130 व्या क्रमांकावर होता, तर 2023 मध्ये हा स्कोअर 0.685 झाला तरी स्थान स्थिर राहिले, ज्यामुळे सुधारणा दिसून येते पण अजूनही 'मध्यम विकास' गटातच आपली स्थिती आहे. मानवी भांडवल निर्देशांक (HCI) 2018 मध्ये 0.44 वरून 2020 मध्ये 0.49 झाला, परंतु नंतर वाढ थांबली. जागतिक भूक निर्देशांकात (GHI) मात्र घसरण झाली असून 2023 मध्ये स्कोअर 28.7 आणि रँक 111 होता, जो 2024 मध्ये थोडा सुधारून 27.3 व रँक 105 झाला, तरीही भूक निर्देशांक "गंभीर" श्रेणीतच आहे. आरोग्य सेवा प्रवेश व गुणवत्ता निर्देशांक (HAQ) 2015 मध्ये 39–41 असून 2023 मध्ये तो 44.8 झाला, पण भारत 154 व्या स्थानी राहिला. आयुर्मान निर्देशांकात मात्र सातत्याने वाढ झाली असून 2015 मध्ये 68.3 वर्षे असलेली जीवन अपेक्षा 2025 मध्ये 72.48 वर्षांपर्यंत पोहोचली. यामागे आरोग्य सेवेतील सुधारणा, लसीकरण व कुपोषण नियंत्रणाचा मोठा वाटा आहे. एकूणच, भारताने आरोग्याच्या काही पैलूंमध्ये सुधारणा केली असली तरी पोषण, सेवा गुणवत्ता आणि महिला-बालकांचे आरोग्य या क्षेत्रांमध्ये अजूनही ठोस प्रयत्नांची आवश्यकता आहे.

भारताच्या अधिकृत आकडेवारीनुसार २०१७–१९ मध्ये मातृ मृत्यु दर (MMR) प्रति १००,००० सजीव जन्मांवर १०३ इतका होता महाराष्ट्रात हा दर ३८, तमिळनाडूमध्ये ५८, केरळमध्ये ३० इतके होते, तर बिहार (१३५) आणि उत्तर प्रदेश (१६७) जवळजवळ दुप्पट आहे. जास्त होते यामुळे दक्षिणेकडे उच्च

आरोग्यविकास दिसतो. नमुना नोंदणी अहवालानुसार २०२१ मध्ये देशाचा बाल मृत्यू दर (IMR) प्रति हजार जगलेल्या बालकांवर २७ इतका होता, त्यात केरळात सर्वात कमी (६) आणि मध्य प्रदेशात सर्वात जास्त (४१) नोंदले गेले. राज्यस्तरावर NFHS-5 च्या आकडेवारीनुसार केरळात हा दर फक्त ४, तमिळनाडूमध्ये १९, महाराष्ट्रात २३, बिहारात ४७ आणि उत्तर प्रदेशात ५० इतका होता. बालकांमधील पौष्टिकतेबाबत NFHS-5 नुसार महाराष्ट्रात सुमारे ३५% मुले, तमिळनाडूत २५% , केरळात २३% तर उत्तर प्रदेशात ४०% आणि बिहारात ४३% इतकी आहेत. पूर्ण लसीकरण दरात तमिळनाडूने ८९%, केरळाने ८६% पूर्ण लसीकरण केलेल्या बाळांची नोंद घेतली. महाराष्ट्रात ७४% बिहारात ७८% उत्तर प्रदेशात ७१% इतका पूर्ण लसीकरण दर होता. या आकड्यांवरून दिसते की दक्षिण भारतीय राज्य आरोग्यदर्शकांच्या वाटेवर आघाडीवर आहेत, तर बिहार–उत्तरप्रदेशात अद्याप बाल पोषण आणि लसीकरणात मोठे अंतर आहे.

महाराष्ट्र व भारतातील आरोग्य, लोकसंख्या आणि सामाजिक विकास निर्देशांकांची तुलनात्मक माहिती खालीलप्रमाणे दिलेली आहे.

तक्ता क्र. ३ :

महाराष्ट्र व भारतातील आरोग्य, लोकसंख्या आणि सामाजिक विकास निर्देशांकांची तुलनात्मक माहिती

तपशील	**महाराष्ट्र**	**भारत**
अर्भक मृत्यू दर (२०२०)	१६	२८
नवजात शिशु मृत्यूदर (२०२०)	११	२०
पाच वर्षाखालील बालकांचा मृत्यूदर (२०२०)	१८	३२
एकूण जनन दर (२०२०)	१.५	२.०
माता मृत्यू प्रमाण (२०१८-१९)	३३	९७
स्त्रियांचे लग्नाच्या वेळेचे सरासरी वय (२०२०)	२३.७	२२.७
मानव विकास निर्देशांक (२०२२)	०.६९५	०.६४४
बहुआयामी दारिद्र्य निर्देशांक (२०१९-२०२१)	०.०३३	०.०६६
बेरोजगारी दर (२०२३-२४)		
ग्रामीण	२.१	२.५
नागरी	५.२	५.१
साक्षरता दर	८२.३४	७२.९८

स्त्रोत : महाराष्ट्राची आर्थिक पाहणी :२०२४-२५

वरील आकडेवारीनुसार, महाराष्ट्र अनेक सामाजिक आणि आरोग्य संकेताकांमध्ये भारताच्या तुलनेत चांगली कामगिरी करत आहे. २०२० मध्ये महाराष्ट्राचा अर्भक मृत्यू दर (१६), नवजात शिशु मृत्यू दर (११) आणि पाच वर्षाखालील बालकांचा मृत्यू दर (१८) हे राष्ट्रीय सरासरीपेक्षा कमी आहेत, जे राज्यातील आरोग्य सेवा सुधारत असल्याचे सूचित करते. एकूण जनन दर महाराष्ट्रात १.५ असून भारताच्या २.० च्या तुलनेत कमी आहे, याचा अर्थ राज्यात लोकसंख्या वाढ नियंत्रित आहे. माता मृत्यू प्रमाणही महाराष्ट्रात (३३) राष्ट्रीय पातळीवरील (९७) प्रमाणाच्या तुलनेत खूपच कमी आहे. स्त्रियांच्या विवाहाचे सरासरी वय महाराष्ट्रात २३.७ असून भारताच्या २२.७ पेक्षा थोडे जास्त आहे, जे महिलांच्या सामाजिक प्रगतीचे द्योतक आहे. मानव विकास निर्देशांकात महाराष्ट्र (०.६९५) देशाच्या (०.६४४) पुढे असून बहुआयामी दारिद्र्य निर्देशांकही महाराष्ट्रात (०.०३३) तुलनात्मकदृष्ट्या कमी आहे. २०२३-२४ मध्ये ग्रामीण बेरोजगारी दर महाराष्ट्रात २.१ असून नागरी भागात ५.२ आहे, जे देशाच्या सरासरीशी जवळपास आहे. साक्षरता दरामध्ये महाराष्ट्र (८२.३४%) भारताच्या (७२.९८%) खूप पुढे आहे. एकूणच, महाराष्ट्र बहुतेक मानकांमध्ये देशाच्या सरासरीपेक्षा प्रगत असून आरोग्य, शिक्षण आणि सामाजिक विकासाच्या दृष्टीने सकारात्मक स्थितीत आहे.

महाराष्ट्र आणि इतर प्रमुख राज्यांच्या आरोग्य निर्देशांकांमध्ये माता मृत्यू दर, बाल मृत्यू दर, कुपोषण, लसीकरण यांची तुलनात्मक माहिती खालीलप्रमाणे दिलेली आहे.

तक्ता क्र. ४ :

भारत व निवडक राज्यांतील प्रमुख आरोग्य निर्देशांक (MMR, IMR, कुपोषण, लसीकरण) – (2020–2021)

राज्य / राष्ट्रीय सरासरी	माता मृत्यू दर (MMR) (प्रति लाख जिवंत बाळंतपण) (2020)	बाल मृत्यू दर (IMR) (प्रति 1000 जन्मे) (2021)	कुपोषणाचे प्रमाण टक्केवारी (2021)	लसीकरणाचे प्रमाण टक्केवारी (2021)
महाराष्ट्र	**33**	20	35%	80%
तमिळनाडू	**50**	22	28%	77%
केरळ	**42**	7	21%	86%
उत्तर प्रदेश	**197**	41	44%	63%
बिहार	**165**	34	43%	61%
भारत	**103**	32	35.5%	76%

स्त्रोत : MMR (माता मृत्यू दर, 2020): Sample Registration System (SRS), Special Bulletin on Maternal Mortality Ratio 2017–2019 (MOHFW, Published 2022), IMR (बाल मृत्यू दर, 2021): SRS Statistical Report 2021 – भारत सरकारचा अधिकृत डेटा. कुपोषण व लसीकरण (2021): NFHS-5 (National Family Health Survey – 2019–21)

(नोंद: 2023–2025 मधील नवीन आकडेवारी अजून प्रसिद्ध झालेली नाही (2025 पर्यंत), त्यामुळे सद्या उपलब्ध अधिकृत आकडेवारी ही NFHS-5 व SRS अहवालावर आधारित आहे.)

२०२१ व २०२० मधील उपलब्ध आकडेवारीनुसार, महाराष्ट्राची आरोग्यविषयक कामगिरी राष्ट्रीय सरासरीपेक्षा काही प्रमाणात चांगली आहे. उदाहरणार्थ, माता मृत्यू दर (MMR) महाराष्ट्रात ३३ आहे, तर राष्ट्रीय सरासरी १०३ असून, उत्तर प्रदेश (१९७) आणि बिहार (१६५) या राज्यांपेक्षा महाराष्ट्राची स्थिती अधिक समाधानकारक आहे. बाल मृत्यू दर (IMR) देखील महाराष्ट्रात २० असून, भारताच्या ३२ च्या सरासरीपेक्षा कमी आहे; केरळने या क्षेत्रात सर्वात उत्कृष्ट कामगिरी करत ७ चा दर राखला आहे. कुपोषणाच्या प्रमाणात, महाराष्ट्रात ३५% बालक कुपोषित आहेत, जे राष्ट्रीय सरासरी (३५.५%) जवळचे आहे. मात्र केरळ (२१%) व तमिळनाडू (२८%) या राज्यांनी या बाबतीत चांगली प्रगती केली आहे. लसीकरणाच्या बाबतीत महाराष्ट्राने ८०% बालकांना पूर्ण लसीकरण केले आहे, जे भारताच्या ७६% च्या सरासरीपेक्षा पुढे आहे; तथापि केरळमध्ये हे प्रमाण ८६% असून, सर्वाधिक आहे. उत्तर भारतातील बिहार व उत्तर प्रदेशमध्ये सर्व निर्देशांकांमध्ये परिस्थिती तुलनेने खालावलेली आहे. त्यामुळे महाराष्ट्राने काही क्षेत्रांमध्ये प्रगती केली असली, तरी केरळ व तमिळनाडूच्या तुलनेत विशेषतः कुपोषण आणि लसीकरणाच्या समावेशकतेसंबंधी अजूनही काही आव्हाने कायम आहेत. भारताचे प्रमुख आरोग्य व विकास निर्देशांक यांची तुलनात्मक माहिती खालीलप्रमाणे दिलेली आहे.

भारताचे प्रमुख आरोग्य व विकास निर्देशांक (2023-2025)

1.	**HDI (मानवी विकास निर्देशांक)**	स्कोअर: 0.685, क्रमांक : 130/193	स्कोअर सुधारला (0.644)	आरोग्य, शिक्षण, जीवनमानात प्रगती
2.	**HCI (मानवी भांडवल निर्देशांक)**	स्कोअर: 0.49 (2020), क्रमांक : 116/130	सौम्य सुधारणा	बाल आरोग्य, पोषणात असमतोल सुधारणा
3.	**GHI (जागतिक भूक निर्देशांक)**	स्कोअर: 27.3 (गंभीर), क्रमांक: 105/127	सौम्य सुधारणा	कुपोषण, स्टंटिंग, वेस्टिंग अजूनही मोठे आव्हान
4.	**HAQ (आरोग्य सेवा प्रवेश व गुणवत्ता)**	स्कोअर: 44.8, क्रमांक : 154/195	सौम्य सुधारणा	ग्रामीण आरोग्य सेवा अद्याप अपुरी
5.	**Life Expectancy (आयुर्मान)**	72.48 वर्षे	स्पष्ट वाढ	बाल मृत्यू कमी, लसीकरणाचा प्रभाव

संयुक्त राष्ट्र विकास कार्यक्रमाच्या अहवालानुसार भारताचा मानव विकास निर्देशांक (HDI) 0.685 इतका आहे आणि जगातील 193 देशांमध्ये भारताचा क्रमांक 130वी आहे. म्हणजे मागील वर्षीच्या तुलनेत (0.644) सुधारणा झालेली आहे. जागतिक बँकेच्या आकडेवारीनुसार मानव भांडवल निर्देशांक (HCI) मध्ये भारताचा गुणांक 0.49 इतका असून 2020 मध्ये 174 देशांपैकी 116व्या क्रमांकावर होता (२०१८ मध्ये 0.44 होते). जागतिक भूख निर्देशांकात (GHI) मध्ये भारताचा गुणांक 27.3 आहे जो "गंभीर" श्रेणीत मोडते; 2024

च्या अहवालानुसार 127 देशांपैकी भारताचा क्रमांक 105वी आहे हा गुणांक 2016 च्या 29.3 च्या तुलनेत काहीशी सुधारलेला असला तरी देशांतर्गत अन्नसुरक्षा आव्हाने कायम आहेत. आरोग्य प्रवेश व गुणवत्ता निर्देशांक (HAQ) मध्ये भारताचा गुण 41.2 (2016 चा डेटा) होता, ज्यामुळे ते 195 देशांमध्ये 145व्या स्थानी होते (GBD 1990 मध्ये हा गुण 24.7 होता, त्यामुळे लक्षणीय वाढ दिसते.) भारतातील सरासरी जीवन प्रत्याशा सुमारे 72 वर्षे आहे, जी 2023 मध्ये नोंदलेली देशातील सर्वात उच्च वयोमान दर्शविते. या आकडेवारींच्या आधारे भूख आणि आरोग्य सेवांमध्ये अजूनही आव्हाने कायम आहेत.

आरोग्य आणि आर्थिक विकासाचा परस्परसंबंध

आरोग्य सेवा, रोजगार आणि सामाजिक सुरक्षा यांचा परस्परसंबंध सामाजिक व आर्थिक विकासाच्या मूलाधारात असून, त्यांची परिणामकारकता देशाच्या उत्पादकतेवर थेट परिणाम करते. अमर्त्य सेन यांच्या "सक्षमतेच्या दृष्टिकोनातून" आरोग्य ही केवळ उपचाराची सेवा नसून, व्यक्तीला आर्थिक, सामाजिक संधी उपलब्ध करून देणारे माध्यम आहे. त्याचबरोबर गॅरी बेकर यांच्या 'मानवी भांडवल सिद्धांतानुसार' आरोग्य आणि कौशल्य विकासात गुंतवणूक केल्यास आर्थिक विकास अधिक शाश्वत आणि व्यापक बनतो. भारतात २०१५ ते २०२५ दरम्यान आरोग्य आणि रोजगार क्षेत्रात लक्षणीय सुधारणा झाली असून, NFHS-5 नुसार गरीब गटातील ४५% बालके कुपोषित असून श्रीमंत गटात हा दर फक्त १८% आहे — ही विषमता दारिद्र्य आणि आरोग्य यातील स्पष्ट संबंध अधोरेखित करते. आयुष्मान भारत, स्कील इंडिया, डिजिटल इंडिया आणि मनरेगा सारख्या योजनांमुळे सामाजिक संरक्षण यंत्रणा अधिक समावेशक झाली असली तरी, अजूनही ग्रामीण भागातील असमतोल दूर करणे ही मोठी गरज आहे. WHO नुसार, भारतात अनेक कुटुंबे आरोग्यखर्चामुळे दरवर्षी गरीब होतात, विशेषतः जेव्हा खासगी क्षेत्रात उपचार घेतले जातात. महाराष्ट्रात केवळ सुमारे ३०% लोकांना आरोग्य विम्याचे कवच मिळते, तर ग्रामीण भागात ७०% लोक कर्ज काढून उपचार घेतात. त्यामुळे सार्वत्रिक, सुलभ व परवडणारी आरोग्यसेवा ही सामाजिक न्याय आणि आर्थिक स्थैर्याचा मूलस्तंभ असल्याचे स्पष्ट होते.

कोविड-१९ महामारीने आरोग्य आणि रोजगार यंत्रणांचे कमकुवतपणा उघड केले. टेलीमेडिसिन, DBT आणि PMGKAY सारख्या उपायांनी तात्पुरता दिलासा दिला असला तरी, टायफॉइड, क्षयरोग, मानसिक आरोग्य आणि डेंग्यूसारख्या दीर्घकालीन आव्हानांसाठी पायाभूत आरोग्य सुविधा मजबूत करणे आवश्यक आहे. लेविसच्या 'द्वैधी अर्थव्यवस्थेच्या सिद्धांतानुसार' ग्रामीण व नागरी भागांतील संसाधनांतील असमतोल वाटणी ही प्रादेशिक असमतोल निर्माण करते. ती आर्थिक प्रगतीला आळा घालते. दुसरीकडे, आरोग्यसेवा क्षेत्र हे स्वतःच एक मोठे रोजगारनिर्माण केंद्र बनले आहे. WHO नुसार, भारतात आरोग्यसेवा क्षेत्रात मागील दशकात १५–२०% रोजगार वाढ झाली असून टेलिहेल्थ, डिजिटल हेल्थ आणि मोबाईल युनिट्समुळे नव्या संधी निर्माण झाल्या आहेत. निरोगी कामगार सातत्याने उपस्थित राहतो, उद्योगक्षेत्रात उत्पादनक्षमतेत वाढ होते आणि देशाचा GDP सुधारतो. म्हणून, औपचारिक रोजगार निर्मिती, महिलांचे सक्षमीकरण, ग्रामीण भागातील आरोग्य सुधारणे आणि डिजिटल समावेश यांद्वारे भारत केवळ आर्थिक महासत्ता नव्हे तर समावेशक व शाश्वत समाज म्हणून विकसित होऊ शकतो.

आव्हाने:

- भारतासाठी लोकसंख्या नियंत्रण, कुपोषण, वैद्यकीय कर्मचाऱ्यांची कमतरता आणि आरोग्य विम्याचा अपुरे संरक्षण.
- महाराष्ट्रासाठी आदिवासी व मागास भागात आरोग्य सेवा पोहोचवणे, खाजगीकरणामुळे वाढलेले

वैद्यकीय खर्च आणि डॉक्टरांची ग्रामीण भागात टंचाई.

धोरणात्मक सूचना:

1. सार्वजनिक आरोग्यावर खर्च वाढवावा. सकल राज्य उत्पन्नाच्या किमान 6% खर्च आरोग्यावर असावा.
2. ग्रामीण व आदिवासी भागात आरोग्य सुविधा वाढवाव्यात. जिल्हास्तरावर प्राथमिक आरोग्य केंद्रांची संख्या वाढवून ती आधुनिक करावीत. तसेच ग्रामीण व आदिवासी भागांमध्ये मोबाईल आरोग्य सेवा विकसित करावी.
3. आरोग्य विमा योजना सार्वत्रिक करून प्रभावीपणे राबवाव्यात. महात्मा फुले जनआरोग्य योजना अधिक प्रभावीपणे अंमलात आणावी.
4. मानव संसाधनात गुंतवणूक जसे डॉक्टर, परिचारिका व आरोग्य सेवकांची संख्या वाढवावी.
5. खासगी क्षेत्राचे नियमन करणे. खासगी रुग्णालयांवर उपचार दराचे बंधन आणि गुणवत्ता नियंत्रण असावे.
6. कामगारांसाठी नियमित आरोग्य तपासणी आणि सुरक्षेचे प्रशिक्षण देण्यावर भर देण्यात यावा.
7. सार्वजनिक आरोग्यावर गुंतवणूक वाढवावी.
8. सर्वसमावेशक अंबलबजावणीसाठी नियोजनबद्ध व धोरणात्मक प्रभावी अंबलबजावणी करण्यात यावी.

निष्कर्ष (Conclusion):

महाराष्ट्राची आर्थिक प्रगती ही केवळ औद्योगिकीकरणावर आधारित नसून, आरोग्य व्यवस्थेच्या समृद्धीवरही अवलंबून आहे. आरोग्य सेवा ही सामाजिक गरज असली तरी, ती आर्थिक स्थैर्य आणि दीर्घकालीन विकासाची अत्यावश्यक गुरुकिल्ली ठरते. तथापि, ग्रामीण-शहरी विभागांतील असमतोल, जीवनशैलीविषयक वाढते आजार, औद्योगिक धोके आणि मानसिक आरोग्याच्या समस्या ही आजची आव्हाने आहेत. यावर मात करण्यासाठी राज्याला परवडणाऱ्या, समावेशक व गुणवत्तापूर्ण आरोग्यसेवांचा विस्तार करावा लागेल. आरोग्यावरची गुंतवणूक ही खर्च नसून आर्थिक उत्पादनात मूल्यवृद्धी करणारी, दीर्घकालीन 'परतावा' देणारी गुंतवणूक आहे. त्यामुळे धोरण स्तरावर आरोग्य क्षेत्रात वाढीव आर्थिक तरतूद, प्रशिक्षित मनुष्यबळ, औषध आणि उपकरणांची पुरवठा साखळी मजबूत करणे, डिजिटल तंत्रज्ञानाचा उपयोग, स्वयंसेवी संस्थांची मदत, खासगी-शासकीय भागीदारी आणि वैद्यकीय शिक्षणात नवोपक्रम या माध्यमांतून आरोग्य क्षेत्रात मोठ्या प्रमाणावर प्रगती साधता येऊ शकते. उत्तम शारीरिक आणि मानसिक आरोग्य मिळवणे हा भारताच्या प्रत्येक नागरिकाचा मूलभूत अधिकार आहे. निरोगी लोकसंख्या म्हणजे उत्पादक आणि सशक्त राष्ट्र. त्यामुळे आरोग्य सेवांची सार्वत्रिक उपलब्धता ही शासनाच्या सर्वच स्तरांवर सामायिक जबाबदारी ठरली पाहिजे. महाराष्ट्रासह संपूर्ण भारताने आरोग्यविषयक योजनांची प्रभावी अंमलबजावणी, लोकजागृती आणि तंत्रज्ञानाचा समन्वय साधून आरोग्यव्यवस्थेचे सक्षमीकरण केल्यास आपण 'संपन्न राष्ट्र' या दिशेने वाटचाल करू शकतो.

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जोन रॉबिन्सन: आर्थिक तत्त्वज्ञानाचा समकालीन परिप्रेक्ष्यातील अभ्यास

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प्रस्तुत लेख हा विदर्भ अर्थशास्त्र परिषदेच्या ४८व्या अधिवेशनातील ग्रंथ-परिचय व्याख्यानाकरिता निवडलेल्या जोन रॉबिन्सन यांच्या 'आर्थिक तत्वज्ञान' (Economic Philosophy) या ग्रंथावर दिलेल्या भाषणाचा सारांश आहे.

जोन रॉबिन्सन: प्रारंभिक जीवन आणि शिक्षण

जोन व्हायलेट रॉबिन्सन (१९०३–१९८३) या केंब्रिज विद्यापीठातील नामवंत अर्थशास्त्रज्ञ होत्या. त्यांनी गिरटन कॉलेजमध्ये अर्थशास्त्राचे शिक्षण घेतले आणि पुढे 'केंब्रिज स्कूल ऑफ इकॉनॉमिक्स'मध्ये प्रभावशाली भूमिका बजावली. भारतातील वास्तव्यामुळे आलेला अनुभव व संशोधनामुळे त्यांचा दृष्टिकोन अधिक व्यापक झाला. त्यांनी अपूर्ण स्पर्धा, केन्सवादी अर्थशास्त्र, भांडवल संचय आणि मार्क्सवादी अर्थशास्त्र या क्षेत्रांत महत्त्वपूर्ण योगदान दिले. त्यांच्या 'अपूर्ण स्पर्धेचे अर्थशास्त्र' "The Economics of Imperfect Competition" (१९३३) या ग्रंथाने नवपरंपरागत अर्थशास्त्राला आव्हान दिले. केन्सच्या रोजगार व मागणी-आधारित संकल्पनांवर त्यांनी सखोल कार्य केले; तसेच मार्क्सवादी शोषण सिद्धांतावर टीका करत नव्याने मांडणी केली. भारतातील आर्थिक नियोजन, फेबियन समाजवाद व विकासावर त्यांनी भाष्य केले. त्यांचे विचार रिकार्डो, शुम्पीटर, सॅम्युअल्सन, आणि फ्रीडमन यांच्या संकल्पनांवर टीकेच्या स्वरूपात विकसित झाले. अर्थशास्त्र हे मूल्य-मुक्त विज्ञान नसून सामाजिक व तत्त्वमीमांसिक प्रभावांखाली असते असे त्यांचे स्पष्ट मत होते. १९७९ मध्ये त्या केंब्रिजमधील पहिल्या महिला प्राध्यापक बनल्या. नोबेल पारितोषिक न मिळाल्याचे दुर्दैव असले तरी, आधुनिक आर्थिक विचारसरणीतील त्यांचे योगदान अद्वितीय आहे.

'आर्थिक तत्वज्ञान' या जोन रॉबिन्सन यांच्या महत्त्वपूर्ण ग्रंथाचे पहिले संस्करण १९६२ मध्ये आणि दुसरे संस्करण १९९१ मध्ये प्रकाशित झाले. दुसऱ्या संस्करणासाठी शीलिया डॉव यांनी प्रस्तावना लिहिली असून, त्या रॉबिन्सन यांच्या विचारांची आजच्या काळातील उपयुक्तता अधोरेखित करतात. शीलिया डॉव सांगतात की रॉबिन्सन यांनी पारंपरिक अर्थशास्त्रावर कठोर टीका केली आणि अर्थशास्त्र केवळ वैज्ञानिक, मूल्य-मुक्त शास्त्र नसून त्यामागे वैचारिक व नैतिक प्रभाव कार्यरत असतो, हे ठामपणे मांडले.

प्रस्तावनेमध्ये त्यांनी अर्थशास्त्राची विचारसरणी, अर्थशास्त्रज्ञांची जबाबदारी आणि अर्थशास्त्राची पुनर्रचना या तीन मुख्य मुद्यांवर भर दिला आहे. डॉव यांच्यामते, अर्थशास्त्राचे सामाजिक व राजकीय पैलू समजून घेण्यासाठी रॉबिन्सन यांचे विचार आजही अत्यंत महत्त्वाचे आहेत. या ग्रंथात एकूण सहा प्रकरणे आहेत, जी अर्थशास्त्राच्या तत्त्वज्ञानाशी निगडित मूलभूत मुद्द्यांवर भाष्य करतात.

प्रकरण १ - तर्कमीमांसा, नैतिक मूल्ये, आणि वैज्ञानिक पद्धती (Metaphysics, Morals and Science)

जोन रॉबिन्सन या प्रकरणात अर्थशास्त्राचे स्वरूप, त्याचे तत्त्वज्ञान, नैतिक मूल्ये आणि वैज्ञानिक परिमाण यांचा सखोल आढावा घेतात. त्या स्पष्ट करतात की अर्थशास्त्र

केवळ एक शुद्ध, वस्तुनिष्ठ आणि प्रयोगशील विज्ञान नाही, तर त्यामध्ये तत्त्वज्ञानात्मक दृष्टिकोन, मूल्यव्यवस्था आणि मानवी आचरण समाविष्ट असतो. त्या म्हणतात की अर्थशास्त्रात वापरण्यात येणाऱ्या अनेक संकल्पना—जसे की "मूल्य", "मागणी", "पुरवठा"—या निश्चित व्याख्येत बसत नाहीत, पण तरीही त्या अत्यंत महत्त्वाच्या आहेत. 'मूल्य' ही संकल्पना विश्लेषित करताना त्या सांगतात की अर्थशास्त्रात गूढ व ठोस संकल्पनांना समजावून सांगताना तात्त्विक पद्धतींचा वापर होतो, आणि त्यामुळे ही शास्त्रशाखा केवळ परिमाणात्मक न राहता गुणात्मकही ठरते.

रॉबिन्सन असे नमूद करतात की कोणतेही आर्थिक विश्लेषण वस्तुनिष्ठ असण्याचा दावा करू शकत नाही, कारण अर्थशास्त्रज्ञ स्वतःच्या वैचारिक व ऐतिहासिक पार्श्वभूमीच्या आधारे विश्लेषण करतात. उदाहरणार्थ, ॲडम स्मिथ यांची बाजारपेठेतील 'अदृश्य हात' ही संकल्पना एक प्रकारचा तात्त्विक विश्वास आहे की बाजार स्वयंनियंत्रित असतात, तर मार्क्स यांच्या दृष्टिकोनातून समाजातील विषमता आणि शोषण महत्त्वाचे ठरते. त्यामुळे त्या सांगतात की प्रत्येक आर्थिक सिद्धांतामागे काही विशिष्ट विचारधारा आणि नैतिक पूर्वग्रह लपलेले असतात. आर्थिक निर्णय हे बहुतांशी सामाजिक, भावनिक व अपूर्ण माहितीच्या आधारे घेतले जातात, केवळ तर्कशुद्ध विचारावर आधारित नसतात. म्हणून पारंपरिक व नव-पारंपरिक अर्थशास्त्रातील गृहीतकेही विचारात घेण्याजोगी आहेत.

या प्रकरणात लेखिका विचारधारेचा तात्त्विक विश्लेषण करून सांगतात की "विचारधारा" म्हणजे केवळ एक बिंदू नसून ती 'हत्ती'सारखी व्यापक, अनुभवात्मक आणि समाजावर प्रभाव टाकणारी संकल्पना आहे. यासाठी केवळ तार्किक व्याख्यांची गरज नाही, तर निकषांची गरज आहे—म्हणजेच, विशिष्ट कृती किंवा धोरण कोणासाठी, किती आणि कसे उपयुक्त ठरते याचा सामाजिक संदर्भातून विचार होय. त्या सांगतात की आर्थिक धोरणे जरी राष्ट्रीय फायद्याच्या नावाखाली मांडली गेली, तरी अनेकदा त्याचा उपयोग विशेष गटांना होतो.

नैतिकतेच्या अनुषंगाने त्या सांगतात की वितरण, न्याय, आणि सामाजिक जबाबदारी ही केवळ आकडेवारीची नव्हे तर मूल्यांसंबंधित प्रश्न आहेत. ॲडम स्मिथ यांनी सांगितलेल्या नैतिक सहानुभूतीच्या भावनांचा संदर्भ देऊन त्या स्पष्ट करतात की आर्थिक व्यवहारात इतरांच्या संपत्तीचा आदर, प्रामाणिकपणा आणि सहजीवनाचे मूल्य महत्वाचे ठरतात. जर समाजात हे मूल्यमापन नसेल, तर सामाजिक व्यवहार टिकू शकत नाहीत. डॉ. जॉन्सन यांच्या विचारांचा हवाला देत त्या नमूद करतात की समाजाचे आरोग्य आणि सुरक्षितता ही नैतिकतेवर आधारित असते.

शास्त्रीय दृष्टिकोनातून त्या सांगतात की अर्थशास्त्रात वैज्ञानिक पद्धतींचा वापर करता येतो, पण नियंत्रित प्रयोगांची मर्यादा, वैयक्तिक पूर्वग्रह, आणि सामाजिक गुंतागुंत यामुळे या प्रक्रियेत अडथळे येतात. पारंपरिक विज्ञानात प्रमाणित प्रयोग व पुन्हा चाचणी करणे शक्य असते, पण अर्थशास्त्रात मानवी वर्तन बदलते असल्यामुळे अचूक व सार्वत्रिक निष्कर्ष देणे कठीण जाते. गृहीतके अनेकदा वास्तवाशी विसंगत असतात, त्यामुळे अर्थशास्त्रात वस्तुनिष्ठतेऐवजी विवेकी परीक्षण आणि खुले संवाद अधिक गरजेचे ठरतात.

रॉबिन्सन प्रकरणाच्या शेवटी सांगतात की अर्थशास्त्राचे कार्य हे केवळ गणितीय प्रारूप मांडणे नव्हे, तर ते समाजात वास्तववादी आणि नैतिकदृष्ट्या जबाबदार भूमिका पार पाडणारे असले पाहिजे. आर्थिक धोरणे तयार करताना सामाजिक, ऐतिहासिक आणि राजकीय घटकांचा विचार करणे अनिवार्य आहे. तटस्थतेच्या नावाखाली मूल्यशून्यता स्वीकारणे धोकादायक आहे. त्या सांगतात की अर्थशास्त्राच्या अभ्यासात समांतरपणे विचारधारा, नैतिकता आणि वैज्ञानिक भान यांचा समतोल साधणे अत्यावश्यक आहे. आर्थिक सिद्धांत विशिष्ट गृहीतकांवर आधारित असतात आणि ते नेहमीच

वास्तवाला लागू पडतील असे नाही. म्हणूनच, अर्थशास्त्राच्या अभ्यासात तटस्थता, वास्तववाद आणि सामाजिक संदर्भांचा विचार आवश्यक आहे.

प्रकरण 2 - परंपरागत - मूल्य (The Classics – Value)

जोन रॉबिन्सन यांचे *आर्थिक तत्वज्ञान* या पुस्तकातील दुसरे प्रकरण हे मूल्य या संकल्पनेच्या ऐतिहासिक, तात्त्विक आणि सामाजिक संदर्भांचे विश्लेषण करते. त्या ॲडम स्मिथ, डेव्हिड रिकार्डो आणि कार्ल मार्क्स यांच्या विचारांच्या आधारे मूल्याच्या संकल्पनेचा मागोवा घेतात. मूल्य ही केवळ वस्तूच्या बाजारभावाशी निगडित गोष्ट नसून तिच्यामागे श्रम, उत्पादन खर्च, सामाजिक आणि राजकीय संरचना, आणि नैतिकता या घटकांचे गुंतागुंतीचे जाळे आहे. रॉबिन्सन सांगतात की मूल्य म्हणजे उपयोगिता नसून त्याला विनिमय मूल्य आणि उपयोग मूल्य अशा दोन अंगांनी समजले जाते. पाण्याचा उपयोग मोठा असला तरी त्याचे विनिमय मूल्य कमी आहे, तर हिऱ्याचे उलट आहे – हे 'पाणी-हिरा विरोधाभास' अर्थशास्त्रातील मूलभूत कोडे आहे.

या संदर्भात, ॲडम स्मिथचा श्रममूल्य सिद्धांत महत्त्वाचा आहे. त्याने आदिम समाजात वस्तूंची देवाणघेवाण श्रमाच्या प्रमाणावर आधारित होती, हे सांगितले. परंतु समाज जसा जटिल होत गेला, तसे कौशल्य, मालकी आणि नफा हे घटकही मूल्य ठरवण्यात महत्त्वाचे ठरले. स्मिथच्या दृष्टीने 'अदृश्य हात' ही बाजारातील समतोल राखणारी नैसर्गिक यंत्रणा होती. रॉबिन्सन त्याच्या विचारांत नैतिक व तात्त्विक सीमांचाही निर्देश करतात – विशेषतः उत्पादक व अनुत्पादक श्रम यामधील फरक लक्षात घेतात.

डेव्हिड रिकार्डोने स्मिथच्या सिद्धांतात सुधारणा करत उत्पादन खर्च, जमीन, भांडवल व मजुरी यांचा विचार करून मूल्य ठरवले पाहिजे असे मांडले. त्यांनी दीर्घकालीन व अल्पकालीन किंमती यामधील भेद स्पष्ट केला आणि शेतीवरील खंडाच्या संकल्पनेतून मूल्यनिर्धारणाचे मुद्दे विशद केले. श्राफा यांचा उल्लेख करत रॉबिन्सन रिकार्डोच्या भूमिकेचा परिप्रेक्ष्यात्मक अभ्यास करतात. मात्र रिकार्डोचे विश्लेषण अत्यंत तांत्रिक असून त्यात नैतिक वा वैचारिक आशयाची कमतरता आहे.

या तुलनेत, कार्ल मार्क्सचा दृष्टिकोन भांडवलशाहीतील शोषणावर केंद्रित आहे. त्याने 'अधिशेष मूल्य' सिद्धांत मांडला – म्हणजेच मजुरांना त्यांच्या श्रमाच्या पूर्ण किमतीपेक्षा कमी वेतन दिले जाते आणि उर्वरित नफा भांडवलदार ठेवतात. मार्क्सचे विश्लेषण फक्त आर्थिक नसून तत्त्वमीमांसिक व सामाजिक आहे. तो उत्पादक व अनुत्पादक श्रम, वस्तूंचे अमूर्त उपयोग मूल्य, आणि आर्थिक अन्याय यावर प्रकाश टाकतो. रॉबिन्सन यावरून दाखवतात की मार्क्सचा उद्देश्य भांडवलशाहीवर केवळ आरोप करणे नव्हता, तर तिचा तार्किक वेध घेणे होता.

या प्रकरणाच्या शेवटी, रॉबिन्सन स्पष्ट करतात की मूल्य ही केवळ आर्थिक नव्हे तर सामाजिक संकल्पना आहे. आज जरी बाजारात किंमती मागणी-पुरवठ्यावर आधारित असल्या तरी मूल्य ही संकल्पना अधिक सखोल आहे. ती उत्पादन, वितरण आणि सामाजिक समता यांशी निगडित आहे. श्रम, नफा, मालकी, न्याय, नियोजन आणि किंमत या सर्व संकल्पना मूल्याभोवती फिरतात. म्हणूनच मूल्याचा अभ्यास हा केवळ तांत्रिक अभ्यास नसून तो राजकीय, नैतिक आणि मानवी मूल्यांशी जोडलेला आहे. रॉबिन्सन यांच्या मते, मूल्य ही एक अशा प्रकारची संकल्पना आहे, जिचा शास्त्रीय अभ्यास करता येतो, पण तिचे निर्णायक उत्तर मिळवणे हे आजही कठीण आहे. कारण मूल्य हे स्वतःमध्ये एक विचारप्रणाली आहे आणि अर्थव्यवस्थेतील मूल्यनिर्धारण ही समाजरचना व धोरणांवरही अवलंबून असते.

दुकानांमध्ये विकल्या जाणाऱ्या वस्तूंच्या किमती ह्या त्यांच्या मूल्यांच्या प्रमाणात बनवण्याकरता, गुंतवणुकीसाठी निधी गोळा करणे, मजुरी बिलावर

एकसमान कर लागू करणे आणि किमतींत करासह समाविष्ट करणे आवश्यक आहे. अशा प्रणालीची शिफारस करण्यासारखे बरेच काही असले तरी त्यात सुधारणा करणे आवश्यक आहे. पुरवठा आणि मागणीच्या अटींनुसार किंमती ठरणे आवश्यक आहे, कारण मूल्ये सर्व विशिष्ट टंचाईवर मात केल्यावरच मागणी किमतीशी सुसंगत होतील, जेणेकरून प्रत्येक वस्तूचा वैयक्तिकरित्या उत्तम प्रकारे लवचिक पुरवठा होतो. अशा प्रकारच्या किंमतींच्या प्रणालीचा प्रयत्न केला गेला नाही आणि समाजवादी सिद्धांतामध्ये सापेक्ष किमतींबद्दल कोणतेही स्पष्ट सिद्धांत दिसत नाही. राजकीय अर्थव्यवस्थेचा ग्रंथ आपल्याला फक्त हेच सांगतो की 'किंमतीच्या नियोजनात मूल्याच्या नियमाचे कार्य विचारात घेतले जाते'; पण कसे ते सांगत नाही.

रॉबिन्सन या प्रकरणाच्या शेवटी असे सांगतात की मूल्याची संकल्पना ही केवळ तांत्रिक अर्थाने महत्त्वाची नाही, तर ती सामाजिक आणि राजकीयदृष्ट्याही महत्त्वाची आहे. परंपरागत अर्थशास्त्रज्ञांनी मांडलेले मूल्यविषयक सिद्धांत हे आधुनिक काळातही महत्त्वाचे आहेत, कारण: परंपरागत अर्थशास्त्रज्ञांनी श्रम आणि उत्पादनाच्या आधारे मूल्य समजून घेण्याचा प्रयत्न केला. आधुनिक काळात, किंमत ठरवण्यासाठी *मागणी-पुरवठा, उत्पादन खर्च, नफा आणि बाजारातील शक्ती* हे सर्व घटक महत्त्वाचे ठरतात. तरीही, "अंतर्गत मूल्य" नक्की काय आहे, यावर अर्थशास्त्रज्ञ आजही एकमतास आलेले नाहीत. हे मूल्याच्या सर्व विविध अर्थांपैकी एक आहे, उत्पादन व्यायानुसार वाजवी किंमत (Just Price) संकल्पना जुनी आहे, ॲडम स्मिथने प्रत्येक प्रजातीला शिकारींना पकडण्यासाठी लागणाऱ्या वेळेच्या आधारावर त्यांच्या खेळाची अदलाबदल केली. किंमती अशा (राजकीय गरजेच्या अधीन) असाव्यात की देशात आणि शहरात एका दिवसाच्या कामातून समान उत्पन्न मिळते. परंतु जरी हे आदर्श म्हणून मंजूर केले गेले तरीही भिन्न वातावरणात भिन्न प्रकारचे जीवन जगणाऱ्या व्यक्तींसाठी समतुल्य उत्पन्न काय मानले जावे याची गणना करण्याची समस्या अजूनही आहे. मूल्य मदत करणार नाही. त्यात कोणतीही कार्यरत सामग्री नाही. तो फक्त एक शब्द आहे

प्रकरण ३- नव-परंपरागत : उपयोगिता (The Neo-Classics: Utility)

जोन रॉबिन्सन यांच्या *आर्थिक तत्वज्ञान* ग्रंथातील तिसऱ्या प्रकरणात नव-परंपरागत अर्थशास्त्रात उपयोगिता संकल्पनेचे स्थान, तिचे गृहितक व मर्यादा यांचे परखड विश्लेषण करण्यात आले आहे. नव-परंपरागत अर्थशास्त्र ग्राहकाच्या वागणुकीचे स्पष्टीकरण देताना, प्रत्येक निर्णय तर्कशुद्ध असून तो 'जास्तीत जास्त उपयोगिता' मिळवण्यासाठी घेतला जातो, असे मानते. १९ व्या शतकात जेव्हन्स, मेंगर व वॉल्रस यांनी "सीमांत उपयोगिता" सिद्धांत मांडला आणि या सिद्धांतावर आधारित गणितीय प्रारूप तयार केले. जेव्हन्सने बेन्थमच्या तत्त्वज्ञानावर आधारित वापराच्या प्रमाणात समाधान मोजण्याचा प्रयत्न केला, तर वॉल्रसने मागणी-पुरवठा वक्रांमधून मूल्यनिर्धारणाचे प्रारूप उभे केले. मार्शलने आंशिक समतोल विश्लेषणाद्वारे दीर्घकालीन आर्थिक प्रक्रियांचा विचार केला आणि औद्योगिक जीवनचक्र, तंत्रज्ञान व लोकसंख्येतील बदल यांचा समावेश केला. या अर्थशास्त्रज्ञांनी उपयोगिता ही मोजता येणारी, गणितीय स्वरूपात दर्शवता येणारी व सार्वत्रिक संकल्पना असल्याचे गृहीत धरले.

यावर जोन रॉबिन्सन कठोर टीका करतात. त्यांच्या मते उपयोगिता ही एक व्यक्तिनिष्ठ, सापेक्ष व तात्विक संकल्पना असून, ती मोजता येऊ शकत नाही. विविध व्यक्तींच्या पसंती, गरजा, परिस्थिती आणि सामाजिक प्रभाव वेगवेगळे असतात. म्हणजेच, तर्कशुद्धतेचे गृहितक प्रत्यक्ष व्यवहारात तितकेसे उपयोगी पडत नाही. ग्राहक भावनिक, अपूर्ण माहितीवर आधारित व समाज-सांस्कृतिक प्रभावाखाली निर्णय घेतो. शिवाय, सीमांत उपयोगितेचा नियम अनेक प्रसंगी लागू होत नाही—विशेषतः व्यसनाधीन वस्तूंमध्ये. किंमत ही फक्त

उपयुक्ततेवर अवलंबून नसून, ती उत्पादन खर्च, सामाजिक घटक, राजकीय हस्तक्षेप, व नियामक धोरणांवरही अवलंबून असते. 'पाणी-हिरा विरोधाभास' हे स्पष्ट दाखवते की वस्तूंची किंमत व उपयुक्तता यामध्ये थेट संबंध नसतो.

रॉबिन्सन वापराच्या सिद्धांतातील आणखी एका महत्त्वाच्या मर्यादेवर प्रकाश टाकतात – ती म्हणजे आर्थिक विषमता. नव-परंपरागत संकल्पना वैयक्तिक निवडीवर भर देतात, परंतु निवडीच्या संधींमध्ये समानतेचा अभाव असतो. गरीब व्यक्तींच्या पर्यायांची मर्यादा हीच त्यांची 'तर्कशुद्धता' ठरवते. त्यामुळे उपयोगिता महत्तमीकरण "Utility Maximization" ही संकल्पना सर्वांवर सारखी लागू होत नाही. रॉबिन्सन बाजारपेठ ही वस्तूंमधील उपयुक्ततेचे प्रतिबिंब दाखवते या गृहितकालाही आव्हान देतात. त्या म्हणतात की बाजारात विक्रेते व ग्राहक दोघांनाही संपूर्ण माहिती नसते; त्यामुळे व्यवहार नेहमीच 'इष्टतम' नसतो.

रॉबिन्सन नव-परंपरागत अर्थशास्त्राच्या मुक्त व्यापारासंबंधीच्या गृहितकांनाही नाकारतात. मुक्त व्यापार 'परिपूर्ण स्पर्धा', 'पूर्ण रोजगार' आणि 'आंतरराष्ट्रीय संतुलन' या आदर्श गृहितकांवर अवलंबून असतो, जे वास्तवात दुर्मीळ असतात. आर्थिक धोरणे राबवताना या गृहितकांची अंमलबजावणी अशक्य असल्यामुळे, हे सिद्धांत वास्तवाच्या समस्यांवर उत्तर देण्यात अयशस्वी ठरतात.

तथापि, रॉबिन्सन यांचा अंतिम निष्कर्ष असा आहे की नव-परंपरागत उपयोगिता सिद्धांत ही एक काल्पनिक आणि संकुचित चौकट आहे. वास्तविक जीवनातील आर्थिक वर्तन समजून घेण्यासाठी सामाजिक, राजकीय, आणि आर्थिक शक्ती-संबंधांचा विचार करणारे अभ्यास आवश्यक आहेत. नव-परंपरागत सिद्धांतांनी व्यावहारिकतेऐवजी आदर्श कल्पनांना अधिक महत्त्व दिले आणि म्हणूनच ते अर्थशास्त्राला वास्तवाशी जोडण्यात अपयशी ठरले. त्यांच्या मते, अर्थशास्त्र फक्त तर्कशुद्ध गणितीय प्रारूप नव्हे, तर ते मानवी समाज, विषमता आणि शक्तीच्या संधी यांचा अभ्यास करणारी शास्त्रशाखा असली पाहिजे.

प्रकरण ४ - केन्सवादी क्रांती (The Keynesian Revolution)

आर्थिक तत्वज्ञान या पुस्तकाच्या चौथ्या प्रकरणात "The Keynesian Revolution" या विषयावर सविस्तर चर्चा केली आहे. त्या नव-परंपरागत अर्थशास्त्रावर केन्सच्या विचारसरणीने केलेल्या क्रांतिकारी प्रभावाचे विश्लेषण करतात. नव-परंपरागत विचारांमध्ये अर्थव्यवस्था स्वयंपूर्ण आणि संतुलन साधणारी मानली जाते, परंतु १९२९ च्या महामंदीनंतर हे गृहितक अपयशी ठरले. जॉन मेनार्ड केन्स यांनी दाखवून दिले की, अर्थव्यवस्थेचे संतुलन काही वेळा बेरोजगारीसहही टिकू शकते आणि त्यामुळे सरकारचा हस्तक्षेप अनिवार्य आहे. केन्सने प्रभावी मागणीचा सिद्धांत मांडला आणि मागणी आधारित अर्थशास्त्राचा पाया रचला. 'से' च्या नियमाला विरोध करत त्यांनी सांगितले की, पुरवठा नव्हे तर मागणी ही अर्थव्यवस्थेची चालना असते. त्यामुळे मंदीच्या काळात सरकारने सार्वजनिक गुंतवणुकीद्वारे मागणीला चालना द्यावी, अशी त्यांनी शिफारस केली.

बचत ही आपोआप गुंतवणुकीत परिवर्तित होते हा नव-परंपरागत विश्वास केन्सने फेटाळला. उद्योजकांची मनोवृत्ती, भविष्याविषयीची अनिश्चितता, आणि सरकारचा हस्तक्षेप यावर गुंतवणूक अवलंबून असते. त्यांनी स्पष्ट केले की, मंदीच्या काळात बचत कमी करून सार्वजनिक खर्च वाढवणे जास्त योग्य ठरते. याशिवाय, त्यांनी राजकोषीय धोरणाचे महत्त्व अधोरेखित केले आणि सांगितले की, फक्त व्याजदर घटवून आर्थिक पुनरुज्जीवन शक्य नाही. केन्सच्या विचारांनुसार, बेरोजगारी ही अपुरी मागणी आणि गुंतवणुकीच्या कमतरतेमुळे होते, केवळ मजुरीतील लवचिकतेमुळे नाही. त्यांनी नव-परंपरागत तत्त्वज्ञांच्या कल्पनांचा विरोध केला की, कमी वेतनामुळे रोजगार वाढतो, कारण

त्यानुसार खरेदीशक्ती घटल्याने मागणीही घटते. त्यामुळे रोजगार, उत्पन्न आणि मागणी टिकवण्यासाठी सरकारची भूमिका निर्णायक ठरते. १९३० ते १९७० या काळात केन्सच्या विचारांनी कल्याणकारी राज्यांची संकल्पना पुढे आली. पण १९७० नंतर महागाई वाढल्याने केन्सीयन विचारांवर टीका होऊ लागली आणि नव-उदारमतवादी धोरणांना प्राधान्य मिळाले. केन्सने खासगी स्वार्थावर आधारित सार्वजनिक हिताच्या संकल्पनेला विरोध केला आणि विवेकाधारित विकास, युक्ततम हस्तक्षेप आणि सामाजिक गरजांवर भर दिला. त्यांनी बाजार व्यवस्थेवर संपूर्ण विश्वास न ठेवता सरकारकडून नियोजनबद्ध हस्तक्षेपाची गरज प्रतिपादित केली. त्यांनी प्रशुल्कावरील नव-परंपरागत विरोधाचा विरोध करत संरक्षणात्मक शुल्काचा बचाव केला. रॉबिन्सन केन्सच्या विचारांचे समर्थन करताना त्यांच्या मर्यादाही अधोरेखित करतात. त्या म्हणतात की केन्सीयन विचारधारा भांडवलशाहीस पोषक आहे, पण ती सामाजिक आणि आर्थिक असमतोल यांकडे दुर्लक्ष करते. त्या शक्ती-संबंध, उत्पन्नवाटप आणि दीर्घकालीन नियोजनातील कमतरता या बाबींवर केन्सीयन धोरणांची टीका करतात.

पूर्ण रोजगार ही संकल्पनाही त्या संशयास्पद मानतात कारण ती महागाई वाढवू शकते. मिचेल कलेकी यांची उदाहरणे देत त्या म्हणतात की, पूर्ण रोजगारासाठी गुंतवणूकदारांचा विरोध आणि सरकारवरचा दबाव बेरोजगारीच्या एका विशिष्ट पातळीला 'आवश्यक' मानतो. परिणामी, सरकार रोजगार निर्माणाऐवजी तुटीच्या भीतीने दबावात राहते. केन्सने मांडलेल्या आर्थिक हस्तक्षेपाच्या साधनांमध्ये कर आकारणी, सार्वजनिक खर्च, व्याजदरात बदल आणि सामाजिक सेवांमध्ये गुंतवणूक यांचा समावेश होतो. पण ही साधने बाजारशक्तींनी नियंत्रित वातावरणात कशी प्रभावीपणे वापरायची हाच रॉबिन्सनला प्रश्न पडतो. एकंदर, हे प्रकरण केन्सीयन क्रांतीचे तात्त्विक व व्यावहारिक परिणाम स्पष्ट करत आधुनिक अर्थशास्त्राच्या पुनर्विचारासाठी आवश्यक आधार देतात.

प्रकरण ५ - विकास आणि अर्ध-विकास (Development and Under-development)

या पुस्तकातील पाचवे प्रकरण हे आर्थिक विकास व न्यून विकास या संकल्पनांची खोलवर चर्चा करते. रॉबिन्सन म्हणतात की विकास म्हणजे केवळ उत्पादनातील सकल देशांतर्गत उत्पादनातील (GDP) वाढ नव्हे, तर तो रोजगार, उत्पन्नवाढ, आणि जीवनमानात सुधारणा या सर्व अंगांनी मोजला गेला पाहिजे. विकसित देश उद्योग, तंत्रज्ञान आणि भांडवल यामध्ये प्रगत असून त्यांना स्थिर शासन आणि उच्च पायाभूत सुविधा लाभतात. त्याउलट, विकसनशील देश कृषिप्रधान, कमी औद्योगिक, आणि विषम संपत्ती वितरणाने ग्रस्त आहेत. भारतासह, आफ्रिकन आणि लॅटिन अमेरिकन देश हे आजही या संघर्षात आहेत. रॉबिन्सन औद्योगीकरणाला विकासाचे केंद्र मानतात आणि मुक्त बाजारपेठेवर टीका करतात, कारण ती मोठ्या भांडवलशाही देशांना लहान देशांचे शोषण करण्यास प्रवृत्त करते. त्यांनी हॅरॉड-डोमर प्रारूपाचा उल्लेख करताना सूचित केले की बचत व तंत्रज्ञानप्रगत गुंतवणूक आवश्यक आहे, आणि हेच भारताच्या पंचवार्षिक योजनांचे मूळ होते. रॉबिन्सन आर्थिक इतिहासातील जुने सिद्धांत जसे की रिकार्डो, मार्क्स, व केन्स यांचे विश्लेषण करून सांगतात की नफ्याचे प्रमाण कालांतराने घटते आणि भांडवली गुंतवणुकीचे सीमांत उत्पादन कमी होते. हॅरॉड-डोमर प्रारूपाद्वारे त्यांनी सूचित केले की जर बचत वाढवली आणि ती अधिक उत्पादनक्षम भांडवली उपकरणांमध्ये वापरली गेली, तर वृद्धीचा दर वाढू शकतो. मात्र बचतीमुळे गुंतवणुकीला होणारा अडथळा कायम राहततो. गुंतवणुकीतील अनिश्चितता, जोखीम, आणि 'स्वायत्त गुंतवणूक' हे घटक महत्त्वाचे ठरतात.

विकासाचा इतिहास स्पष्ट करताना रॉबिन्सन वेबर, रोस्टोव व आयर्स यांच्या दृष्टिकोनाचा संदर्भ घेतात. वेबरच्या मते कॅल्व्हिनिस्ट नैतिकतेमुळे भांडवलशाहीला चालना मिळाली, तर आयर्सच्या मते युरोपने जुन्या कल्पना टाकून नवकल्पनांचा स्वीकार केला. तंत्रज्ञान,

संवाद, आणि नाविन्यपूर्ण शोधामुळे युरोपात औद्योगिक क्रांती शक्य झाली. रॉबिन्सन म्हणतात की अशाच प्रकारचे परिवर्तन आफ्रिकेसारख्या देशांसाठी गरजेचे आहे. लोकसंख्येच्या वाढीचा विचार करताना त्या माल्थसने दशविलेल्या धोक्याची आठवण करून देतात – की तुटपुंज्या संसाधनांवर अधिक लोकसंख्या ही संकट उभी करू शकते. त्यासाठी उत्पादनवाढ, संसाधनांचा कार्यक्षम वापर, आणि गुंतवणुकीचा योग्य विनियोग महत्त्वाचा आहे. मात्र त्यांनी सावधगिरी बाळगण्याचा इशारा दिला की केवळ दीर्घकालीन उत्पन्नवाढीच्या अपेक्षेने केलेली गुंतवणूक तात्काळ बेरोजगारी निर्माण करू शकते. 'नियोजनासाठी अर्थशास्त्र फारसे सांगत नाही' असा उपहासात्मक निष्कर्ष देऊन त्या म्हणतात की नियोजन करताना स्थितीची समग्र जाणीव आवश्यक आहे. तरीसुद्धा, सांख्यिकीय व गणितीय पद्धती अचूक वापरल्यास त्या फार उपयुक्त ठरू शकतात. रॉबिन्सन विकासाच्या अडथळ्यांमध्ये वसाहतवादाचा वारसा, संपत्तीचे केंद्रीकरण, परकीय आर्थिक प्रभुत्व, आणि शिक्षण व तंत्रज्ञानाचा अभाव या प्रमुख कारणांचा उल्लेख करतात. त्यांनी विकसनशील देशांसाठी विकासाचे धोरणही सुचवले – जसे की सरकारी हस्तक्षेप, संरक्षणवादी धोरणे, तांत्रिक शिक्षणावर भर, आणि कृषी-औद्योगिक समतोल. शेवटी त्या स्पष्ट करतात की विकास म्हणजे केवळ जीडीपी नव्हे, तर सामाजिक न्याय, समान संधी, आणि स्वावलंबन या मूल्यांचा समावेश असणे आवश्यक आहे. अशा समन्वित दृष्टीकोनातूनच विकसनशील देश वास्तविक प्रगती साधू शकतात.

प्रकरण ६ - खेळाचे नियम काय आहेत? (What Are the Rules of the Game?)

आर्थिक तत्वज्ञान या पुस्तकातील सहाव्या प्रकरणात अर्थशास्त्रातील नियम, बाजारव्यवस्थेतील शक्तिसंरचना आणि धोरणनिर्मितीतील राजकीय प्रभाव यांची सखोल चिकित्सा केली आहे. त्या स्पष्ट करतात की अर्थशास्त्र हे केवळ वैज्ञानिक नियमांवर आधारित नसून, त्यामध्ये सामाजिक, आर्थिक आणि राजकीय शक्तींचा प्रभाव मोठ्या प्रमाणावर असतो. नव-परंपरागत अर्थशास्त्र हे बाजारपद्धतीला नैसर्गिक, समतोल साधणारी आणि तटस्थ समजते. मात्र, रॉबिन्सन यांचे मत आहे की या तथाकथित तटस्थ नियमांवर भांडवलदार, सरकार, आणि जागतिक संस्था यांसारखे शक्तिशाली घटक नियंत्रण ठेवतात. त्यामुळे नियम सर्वांसाठी सारखे राहात नाहीत; ते शक्तिशाली वर्गाच्या फायद्यासाठी बदलले जातात.

मुक्त बाजारपेठ ही संकल्पना जरी सर्वांसाठी संधीची वाट उघडणारी भासली, तरी वास्तवात मोठ्या कंपन्या आणि प्रगत देश लहान उद्योग आणि विकसनशील देशांवर वर्चस्व गाजवतात. मोठ्या बहुराष्ट्रीय कंपन्या लहान स्थानिक कंपन्यांना गिळंकृत करतात, ज्यामुळे मुक्त बाजारपेठेतील स्पर्धा अयोग्य व एकतर्फी होतात. या पार्श्वभूमीवर सरकारची भूमिका अधिक निर्णायक ठरते. पारंपरिक विचारसरणी सरकारच्या हस्तक्षेपाला विरोध करत असली तरी रॉबिन्सन आणि केन्स यांच्या मते, असमानता कमी करण्यासाठी सरकारचे करधोरण, गुंतवणूक धोरण, आणि सामाजिक योजनांचे नियमन गरजेचे आहे. विशेषतः कर प्रणालीमधील अन्यायकारक रचना—ज्यामध्ये श्रीमंत कंपन्यांना करसवलती दिल्या जातात आणि सामान्य लोकांवर अधिक कर लादला जातो—ही अर्थव्यवस्थेतील मूलभूत व्यवस्था अन्याय दाखवते.

मौद्रिक आणि राजकोषीय धोरणांची चर्चा करताना रॉबिन्सन दाखवतात की बँकांचे व्याजदर व चलन पुरवठा यांसारख्या गोष्टी केवळ आर्थिक साधने नसून, त्यावरही शक्तिसंस्थांचा प्रभाव असतो. व्याजदरात बदल केल्याने आर्थिक मागणी नियंत्रित करता येते, पण हे धोरण नेहमीच सर्वसामान्यांसाठी फायदेशीर ठरत नाही. त्याचप्रमाणे, राजकोषीय धोरणांतर्गत सरकार मोठ्या उद्योगांना मदत करताना सामान्य लोकांसाठीच्या कल्याणकारी योजना कमी करते.

जागतिक पातळीवर, आंतरराष्ट्रीय नाणे निधी व जागतिक अधिकोष यांसारख्या संस्था मुक्त व्यापाराच्या नावाखाली विकसनशील देशांवर अटी लादतात. विकसित देश कृषी अनुदान देऊ शकतात, पण विकसनशील देशांकडे ही क्षमता नसल्यामुळे त्यांच्या शेतकऱ्यांना जागतिक बाजारात स्पर्धा करता येत नाही. त्यामुळे बाजाराचे नियम सार्वत्रिक नसून सामर्थ्यानुसार बदलणारे असतात.

रॉबिन्सन संपत्तीच्या वितरणाच्या प्रश्नावरही प्रकाश टाकतात. पारंपरिक अर्थशास्त्र हे सांगते की संपत्ती मेहनतीवर मिळते, पण वास्तवात संपत्ती भूतकाळातील मालकी हक्क, भांडवल आणि वर्गीय विशेषाधिकारांवर आधारित असते. त्यामुळे गरिबांसाठी आणि श्रीमंतांसाठी नियम वेगळे असतात.

अखेर रॉबिन्सन म्हणतात की केवळ वैज्ञानिक विचाराने किंवा बाजारपद्धतीवर अवलंबून न राहता, अर्थशास्त्रात लोकशाही आणि नैतिकतेचा समावेश गरजेचा आहे. "नियम बदलल्याशिवाय खेळ बदलणार नाही" हे त्यांचे मुख्य सूत्र आहे. त्या अर्थशास्त्राला एक तटस्थ विज्ञान न समजता, विचारसरणी, सत्ताकारण आणि सामाजिक वास्तव यांचा परिपाक मानतात. त्यामुळे धोरणनिर्मिती करताना लोकहित, समता, आणि न्याय या मूल्यांचा विचार करणारे नियम आवश्यक आहेत. या प्रकरणातून जोन रॉबिन्सन या गोष्टी अधोरेखित करतात की, अर्थशास्त्र हे सत्तेच्या रचनेशी निगडित असून, त्याचा उपयोग केवळ सिद्धांत मांडण्यासाठी नव्हे तर समाज सुधारण्यासाठीही व्हायला हवा.

आर्थिक तत्वज्ञान या ग्रंथाच्या शेवटी जोन रॉबिन्सन अर्थशास्त्राच्या स्वरूपावर एक मर्मभेदी आणि चिंतनशील विचार मांडतात. त्या स्पष्ट करतात की अर्थशास्त्र ही केवळ वस्तुनिष्ठ विज्ञानशाखा नाही, तर ती नैतिक मूल्ये, राजकीय दृष्टिकोन आणि सामाजिक पर्यायांशी जोडलेली आहे. रॉबिन्सन यांचा ठाम विश्वास आहे की कोणतेही आर्थिक तत्त्वज्ञान हे त्या-त्या काळातील ऐतिहासिक व सामाजिक संदर्भांतूनच उगम पावते. म्हणूनच कोणतेही आर्थिक नियम "नैसर्गिक" किंवा अपरिवर्तनीय मानणे चुकीचे आहे. त्या सांगतात की अर्थशास्त्रज्ञांनी आपल्या गृहितकांची आणि मूल्यमापनांची पारदर्शकता ठेवली पाहिजे, आणि आपले व्यक्तिगत पूर्वग्रह समजून घेतले पाहिजेत. त्यांच्या मते, आर्थिक धोरणे आखताना केवळ बाजाराच्या कार्यक्षमतेवर भर न देता सामाजिक कल्याण, समता आणि न्याय या मूल्यांचा विचार करणे आवश्यक आहे. शेवटी, रॉबिन्सन या पुस्तकातून अर्थशास्त्राला एका नैतिकदृष्ट्या जागरूक, सुस्पष्ट आणि जबाबदार शास्त्र म्हणून समोर आणतात — जे केवळ वास्तवाचे वर्णन करत नाही, तर समाज घडवण्यामध्ये महत्त्वाची भूमिका बजावते.

संदर्भ-

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