

SEMINAR PROCEEDINGS ON

75 *years of*

INDIAN ECONOMY AND POLITY
WAY FORWARD IN AMRIT KAAL

Edited By
Priyesh C.A.



Indian Institute of Advanced Study
Rashtrapati Nivas, Shimla-171005

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MESSAGE

The concept of “Amrit Kaal” represents a significant turning point in India’s national tale – a period of strategic and transformative potential. This issue provides an exploration of the nation’s evolving economic, social, and institutional settings, providing insights into India’s changing route. The studies presented in this volume demonstrate a robust approach to understanding national progress. By examining domains such as international trade, environmental sustainability, agricultural innovation, and financial systems, the papers reveal the complex mechanisms driving India’s progress.

The Amrit Kaal represents more than a milestone; it represents a strategic moment of potential and reimagination. The studies in this book highlight the pathways for sustainable growth, demonstrating how systematic analysis can inform future policy and strategic planning. For policymakers, researchers, and global observers, this volume offers a sophisticated lens through which to understand India’s

emerging economic and social landscape. The research captures the balance between historical context and future possibilities, providing a roadmap for navigating complex global challenges. The papers here reflect the intellectual capacity and innovative thinking propelling India's national development. By connecting diverse research domains and offering insights, this volume contributes to a deeper understanding of the nation's transformative journey. As India continues to position itself on the global stage, this venture stands as a proof to the innovative approaches and strategic thinking driving national progress.

Lov Verma

FOREWORD

As India enters its Amrit Kaal — a transformative 25-year period following its 75th year of independence — these works offer a deep examination of our nation's evolving economic, social, and developmental landscapes. Together, they shed light on the complex challenges and opportunities facing India, as it charts a course toward sustainable and inclusive growth. These studies reveal several interconnected themes that are critical to India's future.

India stands at a critical moment seeking to balance economic progress with environmental sustainability. This research highlights the complex trade-offs between development and ecological conservation, particularly in sensitive regions such as Himalayan states. Economic growth must be followed after carefully considering environmental impacts, and accepting the principles of sustainable development. Digital public infrastructure and technological advancements have emerged as key drivers of progress. From financial inclusion initiatives, such as the JAM Trinity, to innovative agricultural approaches, technology is reshaping India's economic and social ecosystem. These transformations promise to create

more inclusive and efficient systems that can address the long-standing developmental challenges.

The focus on millet as a “superfood” represents a turning point of agricultural innovation, nutritional security, and sustainable practices. By promoting crops that are nutritionally rich and environmentally resilient, India can simultaneously address multiple developmental goals, from fighting malnutrition to supporting climate-adaptive agriculture. A repeated theme is the need for balanced and equitable development that reaches all segments of society. Whether through wellness tourism, financial inclusion strategies, or targeted policy interventions, this volume focuses on creating pathways for marginalized populations to participate in and benefit from economic progress. India’s ambition to become a top global economic power is evident. The studies discuss strategies for enhancing international trade, improving logistics performance, and participating more effectively in value chains. These efforts are crucial to positioning India as a competitive and influential player in the global economy.

While acknowledging significant achievements, the research does not shy away from highlighting persistent challenges, from environmental risks and global warming to regional economic disparities. Each studies offer not just critique but also constructive recommendations to move forward, symbolizing the spirit of innovation and resilience that characterizes India’s developmental journey. As we stand at the key stage of Amrit Kaal, these views offer both a insightful look at our past and a determined vision for our future. They remind us that India’s progress is not just about economic metrics but about creating a more equitable, sustainable, and empowered society. The journey continues and its potential is immense.

- Prof. (Dr.) Vinay Kumar Pathak

Vice Chancellor, Chhatrapati Shahu Ji Maharaj University, Kanpur, UP

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List of Abbreviations

1. **AEPS** - Aadhaar Enabled Payment System
2. **Amrit Kaal** - Fortunate period
3. **ANOVA** - Analysis of Variance
4. **APC** - Assamese Performance Council
5. **ASDC** - Assam State Drama Council
6. **ASEAN** - Association of Southeast Asian Nations
7. **Atma Nirbhar Bharat** - Self-Reliant India
8. **AyUSH** - Ayurveda, Yoga, Unani, Siddha, and Homeopathy
9. **BHDA** - Bhakti Heritage Drama Association
10. **BIMSTEC** - Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
11. **BSE** - Bombay Stock Exchange
12. **CAGR** - Compound Annual Growth Rate
13. **CEPA** - Comprehensive Economic Partnership Agreement
14. **CII** - Confederation of Indian Industry
15. **COP** - Conference of the Parties
16. **CPI** - Consumer Price Index
17. **CSR** - Corporate Social Responsibility
18. **CWC** - Central Wool Development Board
19. **CWMI** - Composite Water Management Index
20. **DBT** - Direct Benefit Transfer

21. **DCH** - Development Commissioner for Handlooms
22. **EY** - Ernst & Young
23. **FAO** - Food and Agriculture Organization
24. **FAOSTAT** - Food and Agriculture Organization Statistical Database
25. **FD** - Food Diversity
26. **FDI** - Foreign Direct Investment
27. **FICCI** - Federation of Indian Chambers of Commerce and Industry
28. **FIP** - Financial Inclusion Plan
29. **FSSAI** - Food Safety and Standards Authority of India
30. **FTAs** - Free Trade Agreements
31. **GDP** - Gross Domestic Product
32. **GHG** - Greenhouse Gas
33. **GHI** - Global Hunger Index
34. **GSDP** - Gross State Domestic Product
35. **HCR** - Head Count Ratio
36. **HDI** - Human Development Index
37. **HIM** - Himalayan Ecosystem
38. **ICDS** - Integrated Child Development Services
39. **ICRISAT** - International Crops Research Institute for the Semi-Arid Tropics
40. **IISc** - Indian Institute of Science
41. **IMPS** - Immediate Payment Service
42. **IPCC** - Intergovernmental Panel on Climate Change
43. **ITC** - International Trade Centre
44. **ITC** - International Trade Centre
45. **ITDC** - India Tourism Development Corporation
46. **IUCN** - International Union for Conservation of Nature
47. **IYM** - International Year of Millets
48. **JAM** - Jan Dhan-Aadhaar-Mobile
49. **JAPI** - Joint Assamese Project Initiative (hypothetical from cultural reference)
50. **KVIC** - Khadi and Village Industries Commission
51. **LPG** - Liberalization, Privatization, and Globalization
52. **LPI** - Logistics Performance Index
53. **MDG** - Millennium Development Goals

54. **MDM** - Mid-Day Meal
55. **MNCs** - Multinational Corporations
56. **MNRE** - Ministry of New and Renewable Energy
57. **MoA&FW** - Ministry of Agriculture & Farmers Welfare
58. **MoT** - Ministry of Tourism
59. **MPCE** - Monthly Per Capita Consumption Expenditure
60. **MSME** - Micro, Small, and Medium Enterprises
61. **NAAC** - National Assessment and Accreditation Council
62. **NAPCC** - National Action Plan on Climate Change
63. **NEFT** - National Electronic Funds Transfer
64. **NEHU** - North-Eastern Hill University
65. **NEP** - National Education Policy
66. **NESF** - North East Social Forum
67. **NFHS** - National Family Health Survey
68. **NFSM** - National Food Security Mission
69. **NICRA** - National Innovations on Climate Resilient Agriculture
70. **NIFT** - National Institute of Fashion Technology
71. **NITI Aayog** - National Institution for Transforming India
72. **NPCI** - National Payments Corporation of India
73. **NSE** - National Stock Exchange
74. **OPEC** - Organization of the Petroleum Exporting Countries
75. **PDS** - Public Distribution System
76. **PESTEL** - Political, Economic, Social, Technological, Environmental, and Legal analysis
77. **PMJDY** - Pradhan Mantri Jan Dhan Yojana
78. **POSHAN** - Prime Minister's Overarching Scheme for Holistic Nutrition
79. **PPP** - Purchasing Power Parity
80. **PwC** - PricewaterhouseCoopers
81. **R&D** - Research and Development
82. **RBI** - Reserve Bank of India
83. **RCA** - Revealed Comparative Advantage
84. **RTAs** - Regional Trade Agreements
85. **RTGS** - Real-Time Gross Settlement
86. **SAARC** - South Asian Association for Regional Cooperation
87. **SDG** - Sustainable Development Goal

- 88. **SECC** - Socio-Economic and Caste Census
- 89. **SEZ** - Special Economic Zone
- 90. **UN** - United Nations
- 91. **UNDP** - United Nations Development Programme
- 92. **UNEP** - United Nations Environment Programme
- 93. **UNESCO** - United Nations Educational, Scientific and Cultural Organization
- 94. **UNFCC** - United Nations Framework Convention on Climate Change
- 95. **UPI** - Unified Payments Interface
- 96. **VAI** - Vaisnavite Tradition
- 97. **WPI** - Wholesale Price Index
- 98. **WTO** - World Trade Organization
- 99. **WTTC** - World Travel and Tourism Council
- 100. **WWF** - World Wildlife Fund

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INTRODUCTION AND OVERVIEW

Priyesh C.A.

India approaches its 100th year of independence, marking a critical moment on its road to prosperity, equity, and sustainability. “Viksit Bharat” aims to transform India into a knowledge-based, technologically advanced, and globalized economy by 2047. In the past six decades, India went from being deficient in food in the 1960s to becoming a major supplier of agricultural items such as rice, milk, and cotton (Juneja et al., 2021). Indian planners have been heavily influenced by Rostow’s economic development theory, as seen in five-year plans designed to achieve independent and sustainable growth (Kaufman, 1962). This shift resulted from modern technology adoption, institutional innovations that benefit small farmers, and supportive policies (Juneja et al. 2021). India’s economic growth, averaging 8% over the years, stems from reforms initiated in 1991 and greater global economic integration (Dahlman & Utz, 2005). India can leverage its skilled human capital, dynamic private sector, developed financial system, and robust science and

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technology infrastructure to transition into a knowledge-based economy (Dahlman & Utz, 2005). However, obstacles such as poverty, inequality, and regional disparities continue to impede inclusive growth, necessitating comprehensive reforms in education, healthcare, infrastructure, and governance to address them effectively (Dahlman & Utz, 2005). Enabling financial access and empowering rural areas is essential for reducing the gap between urban and rural regions and attaining equitable development. Combining digital technologies and fostering innovation enhances efficiency, generates employment opportunities, and makes India a key player in the global-knowledge economy.

India's remarkable economic progress in the past few decades has significantly changed its economy, bringing millions out of poverty and positioning itself as a major player in the global economy. However, industrialization and urbanization have brought about environmental issues that require attention to maintain India's sustainability. Since India is the most populous country in the world, it must take the front stage in global efforts to reduce pollution (Bhat, 1999; Singh & Bagchi, 2013). The expected rise in the country's GDP per capita may worsen existing environmental issues unless accompanied by sustainable practices (Parikh 1977). Therefore, balancing industrial growth with environmental protection is key. The media have raised awareness of the severity of India's environmental problems, prompting policymakers, entrepreneurs, and stakeholders to focus on environmental concerns (Bhat, 1999). The sustainable management of India's natural resources, including its land, mineral reserves, river systems, and groundwater, is essential for their future availability (Bhat, 1999; Dwivedi & Kishore, 1982).

Sustainable development balances economic growth and environmental preservation at the same time (Leelakrishnan, 1991). Developing countries such as India face challenges

like population growth, resource depletion, ecological degradation, and pollution (Leelakrishnan, 1991). India's cultural traditions emphasize the mutual dependence of nature and human communities, supporting transformative education and action (Chhokar, 2010). Aligning India's National Education Policy 2020 with the UN's Sustainable Development Goals offers a pathway for an inclusive future (Shukla et al., 2023). The Policy focuses on developing cognitive capabilities and higher-order skills, such as critical thinking and creativity, consistent with SDG 4's goal of quality education (Beerannavar & Pancrasius, 2024). By prioritizing curriculum reforms, pedagogical innovations, and teacher development, the policy aims to foster citizens who are capable of driving sustainable development. This foundation is essential for India's efforts towards social development and inclusion. As India approaches 2047, collaboration among the government, civil society, and private sector is vital for addressing systemic inequalities. Priorities include empowering women, uplifting economically disadvantaged people, and ensuring accessibility for disabled people. India's cultural diversity should be leveraged to promote unity, faith harmony and minority rights. Inclusive policymaking, targeted welfare programs, and innovative social enterprises can harness their people's potential and transform India into a model of equitable progress.

The journey of India's social development and inclusion has been a sign of its resilience and commitment to a diverse cultural heritage. As India moves towards its hundredth year of independence, the vision of "Viksit Bharat" presents an inclusive approach to preserving and celebrating the diverse cultural identity that has long been the foundation of the country (Pathak, 2013). The rich history of India's cultural heritage, as shown by its architecture, craft, and knowledge, holds the key to unlocking the nation's full potential and empowering its people. India's cultural heritage is not merely a collection of physical assets, but rather a philosophical

and spiritual experience. Traditional Indian societies have inherited a craft culture that has evolved over generations, serving as evidence of the uniqueness and adaptability of their communities. The preservation and revival of this knowledge, passed down through traditions and community practices, is key to maintaining the country's cultural sustainability and developing a sense of identity among its citizens (Jain & Thakkar, 2019).

A strong and efficient framework for policy execution and governance is essential for achieving India's Viksit Bharat Vision by 2047. This framework is important for converting a nation's developmental objectives into results that improve citizens' quality of life. A key component of this transformation is improving institutional capabilities and decision-making procedures and promoting increased responsibility and openness across all government tiers (Risco, 2023). Furthermore, effective policy implementation requires the involvement and cooperation of various stakeholders, including businesses, non-governmental organizations, and grassroots communities (Solomon et al. 2022). By approving an inclusive strategy, India can ensure that its vision of a Viksit Bharat is fulfilled, honor its diverse cultural legacy, and establish the lasting identity of its population.

India's vision for 2047 symbolizes a steady commitment to progress and prosperity. The Viksit Bharat roadmap focuses on agriculture, tourism, and trade, which are essential for India's economic and social structure. This vision is rooted in the nation's cultural and spiritual heritage, as highlighted by Lord Macaulay's insights (Pathak, 2013). It focuses on integrating traditional strengths and technological innovations through globalization. The agricultural sector, a major stakeholder in India's economy, shows promising growth through technology, thereby ensuring food security and empowering rural communities for a sustainable

future. Knowledge-based Tantra frameworks will increase productivity and resource utilization, whereas the latest technological interventions such as artificial intelligence will improve supply chain management and farmers' livelihoods (Prabhu & Subramanyam, 2023; Talaviya et al., 2020). The tourism sector aims to position India as a global destination by promoting cultural heritage, natural beauty, and infrastructure, thereby fostering economic growth and cross-cultural exchanges. Eco-tourism hubs, historical site preservation, and enhanced connectivity are key initiatives. The trade sector will drive economic transformation by strengthening India as a global trade hub and by attracting investment, innovation, and collaboration. Expanding trade agreements, supporting SMEs, and adopting advanced technologies will strengthen India's position in the global economy.

India's "Viksit Bharat" vision aims to transform the nation into a prosperous, equitable, and sustainable knowledge-based economy by 2047. India has made major improvements in agriculture, economic growth, and development. However, challenges such as poverty, inequality, and environmental issues still exist and require immediate attention. Sustainable development that maintains economic growth and environmental balance is essential to a better future. Initiatives, such as the National Education Policy 2020, align with the UN's Sustainable Development Goals to develop citizens capable of leading the message of inclusive development. Collaboration among stakeholders is essential to address systemic inequalities and strengthen marginalized communities. Effective policy implementation and governance involving various stakeholders are key to achieving Viksit Bharat's vision. The roadmap focuses on transforming agriculture through innovation, positioning India as a global tourism destination and strengthening its role as a global trading hub.

This compilation of essays is the outcome of a three-day national seminar organized under my convenorship at IIAS, Shimla from the 20th to the 22nd of November 2023. The submissions underwent initial screening at the editorial level followed by a rigorous blind peer review conducted by an external entity at the institutional level. Seventeen essays successfully navigated through multiple layers of evaluation and have been granted final approval for publication. This meticulously Peer Reviewed volume is indeed a commendable read.

An overview of the articles in this issue:

India's global trade status and its journey towards achieving developed nation status by 2047 was analyzed by Professor B.P. Sarath Chandran in his paper, *"India's International Trade in the Amrit Kaal -- Priorities and Way Forward."* The author analyzes India's current trade position, noting that despite being the fifth-largest economy, it ranks 15th to 20th in global trade. The study's effectiveness stems from its emphasis on data, offering thorough analyses of trade imbalances and logistics performance rankings, and revealed comparative advantages. The study highlights the challenges India encounters with Regional Trade Agreements, noting that partnerships with ASEAN, SAFTA, and bilateral agreements often result in imbalanced advantages for the participating nations. This study pinpoints particular areas in need of improvement, including the need to diversify export products, boost participation in Global Value Chains, and improve trade logistics. The author's assessment of India's strengths in 43 product categories and identification of potential export markets provides practical advice for policymakers. The article concludes with recommendations on how to use India's strengths in demographic dividends, digital infrastructure, and the manufacturing sector while addressing challenges related to infrastructure and competitiveness. The in-depth examination in this study

details a feasible strategy for India's economic development through trade, considering various opportunities and obstacles in the Amrit Kaal period.

The problems and prospects of water resource management in 17 states outside the Himalayan region were explored in the paper "*Evaluating the Performance of Non-Himalayan States of India in NITI Aayog's Composite Water Management Index*" by Sheila Srivastava. Srivastava's analysis employs nine crucial indicators from the CWMI to evaluate these states' water management strategies. This study focuses on the outstanding leadership of Gujarat, holding the highest position for three years in a row, and highlights the impressive achievements of water-deficient states such as Tamil Nadu, Madhya Pradesh, and Haryana, demonstrating their dedication to effective water management. Haryana and Goa have made significant progress owing to their proactive actions in addressing water problems. This study highlights the achievements of states with limited water resources in reviving water sources, replenishing groundwater, and managing city sewage, showcasing their ability to adjust and create new solutions. The CWMI framework is praised for promoting collaborative federalism and directing policymakers to incorporate water management in agricultural and industrial planning. Srivastava effectively communicates the requirement for enhanced policies in slower-developing states and highlights sustainable strategies, such as water pricing and community education, to improve water efficiency and equality. This paper provides suggestions on how to tackle India's escalating water shortage using strong comparisons between different states and recommendations based on evidence.

In his article "Examining Diet Patterns, Food Diversity, and Caloric Intake in Himachal Pradesh: A Study of Urban-Rural Convergence," R. Santhosh presented a thorough investigation of the changing dietary habits in Himachal

Pradesh between 1993-2012. This research is successful in utilizing NSS data and new metrics, such as the Simpson Diversity Index, to highlight important dietary changes among different income groups. The results showed a significant decrease in dependence on grains and a higher focus on dairy, vegetables, and processed foods, indicating a varied diet. It is noteworthy that attention was given to enhancing food diversity and caloric intake among rural low-income groups, which exceeded national averages by 2012. Santhosh's observations on the convergence of urban and rural diets stand out because they reveal the impact of economic liberalization on socioeconomics and nutrition. The detailed fractile group analyses the differences and similarities among income groups, enhancing the research's strength and practicality. In general, this research has a sizable impact on comprehending food consumption patterns, providing helpful insights for creating nutrition-focused policies and interventions in HP and other areas.

"Amrit Kaal" emphasizes India's potential to reshape its global economic position, Professor Arun Kumar and Dr. Ranjit Singh presented a forward-looking analysis of India's economic potential in their paper *"Envisioning India @ 2047: The Pivotal 'Amrit Kaal' Journey & 'Self-Reliant India Campaign'"*, demonstrating a clear path to the development of status by 2047. Their detailed study on. The authors highlight key growth factors, particularly the demographic dividend, noting that 68% of India's population is of working age, with a median age of 28 years, compared to aging economies such as the US (median age 45) and Japan (median age 49). The Confederation of Indian Industry's projection of a US\$40 trillion GDP by 2047 is credible, supported by the extensive evidence in this paper. The analysis extends beyond economic forecasts, examining the "Atma Nirbhar Bharat Abhiyan" (Self-Reliant India Campaign) and its five principles, along with sectors such as the digital economy, service exports, and real estate. The inclusion of global

consultancy reports from Ernst, Young, and PwC enhances the credibility of this paper. The forecast of India's per capita GDP reaching US\$13,404 by 2046, potentially elevating it to a developed status, is ambitious yet well supported. The authors consider more than economic metrics, embracing the ethos of "Kartavya Kaal"—the Age of Duty—as articulated by Prime Minister Narendra Modi, emphasizing collective national progress and self-reliance. This paper, maintaining academic rigor, offers an inspiring narrative of India's future as an advanced economy driven by its youthful population, technological innovation, and strategic economic planning, making it essential for policymakers, economists, and those interested in India's global economic trajectory.

The importance of India's handloom industry in both the economy and culture in their study conducted by Dr. Ankita Srivastava and Dr. Ankur Saxena, titled "*Role of Handloom Sector in Indian Economy*." The cottage industry, which has 23.77 lakh looms, provides employment to approximately 35 lakh workers, 72.29% of whom are women. The industry accounts for 19% of India's textile output and demonstrates strong potential for exports. During 2021-2022, there was a notable increase in home furniture exports to the United States and other countries, with over 20 countries receiving these exports. Even with competition from power looms, handloom weaving remains competitive because of its flexibility and distinct designs, showcasing the regional traditions of West Bengal, Gujarat, and Tamil Nadu. A PESTEL examination demonstrates the complexity of the industry: politically endorsed by governmental programs, economically essential for rural earnings, culturally important, and environmentally sustainable. This supports India's aim to achieve net zero carbon emissions by utilizing natural fibers and low-energy production techniques. Nevertheless, issues such as a lack of infrastructure and poor salaries persist. Top designers are receiving more attention, and new online platforms are providing opportunities for growth. The handloom industry

not only symbolizes economic value, but also showcases Indian skills, innovation, and a variety of cultures.

Another critical analysis by Saxena and Srivastava investigated the impact of global warming on India's crucial apparel manufacturing industry, which plays a vital role in the national economy and the job market. In their article titled "*Global Warming- The Biggest Challenge of Indian Economy- 'A Case Study of Indian Apparel Manufacturing Industry,'*" the authors praised the adoption of eco-friendly production techniques through structured approaches, such as Interpreted Structural Modeling and Fuzzy Delphi Methods. The COVID-19 pandemic has brought complex challenges to the Indian textile sector, including its key apparel manufacturing components. Declines have been observed in production, turnover, employment, and exports, with an unclear recovery path. In contrast, prior to the pandemic, the domestic apparel industry was projected to experience steady growth of 7.3% in 2009, despite the 2008-09 economic downturn. The industry has also experienced globalization through technological advancements, with Western markets embracing Indian fashion sensibilities and the introduction of luxury fashion brands and high-end fashion magazines to the Indian market.

India's journey to development often comes at the cost of the environment, and Dr. Ashok Kumar's paper titled "*Economic Development and Challenges in Our Environment During The 75 Years of the Indian Economy*" offers a thorough examination of India's economic growth and efforts towards environmental preservation in the last 75 years. Kumar's comprehensive understanding of India's policy environment is clear in its fair depiction of obstacles and successes, highlighting its importance as a valuable tool for understanding the complex connection between development and sustainability. The author analyses the environmental and energy sustainability of India, highlighting the significant focus, authentic worry,

and importance of ecological balance that have marked the start of a new era of sustainability. This study explores the complex challenges that emerge when development, the environment, and natural resource conservation intersect in traditional development models. The discussion also covers the significance of economic modeling, governance, and institutions in sustainability theory and practice across different sectors and for economic decision-makers. Kumar's research is based on studying the current obstacles India is encountering, such as fair allocation of resources, calls for climate justice, and the need for sustainable economic development within environmental limits. The impartial approach and in-depth analysis of this paper greatly enhance the comprehension of India's sustainability story.

The elimination of hunger has remained a primary goal of India since its independence. Dr. Anubhav Vishwakarma and his fellow authors conducted a thorough assessment of India's ongoing issues with hunger in their article "*Amrit Aahar in Amrit Kaal: A Ray of Light to Achieve Sustainable Development Goal 2*," carefully assessing the country's standing on the Global Hunger Index, India placing 111th out of 125 nations in 2023. This study carefully analyzes the complicated issue of food insecurity in India, referencing multiple national and international reports that reveal concerning statistics: approximately 190 million people go to bed hungry each night, and 35.5% of children are malnourished according to the National Family Health Survey. The research thoroughly examines current government initiatives to eliminate hunger, such as the Zero Hunger Programme, the Mid-Day Meal Programme, and the Eat Right India Movement. By conducting a systematic analysis, they identified various barriers that hinder these projects, including low agricultural productivity, ineffective execution, insufficient monitoring, lack of storage capacity, corruption, and conflicts between departments. This paper introduces the "AMRIT AAHAR Yojana" as a crucial element

strategically linked to the Atmanirbhar Bharat initiative. The strategy designed as follows.

- Reach the goals of SDG 2 by the year 2030.
- Eradicate hunger in every part of India.
- Greatly enhances India's position on the global hunger index.

The authors recommend a comprehensive plan with innovative solutions, such as social audits, utilizing technology for program monitoring, revamping the Public Distribution System, and setting up mobile nutrition clinics in isolated regions. This study connects India's national development goals with global sustainable development targets, providing a practical and future-oriented method to tackle one of the country's major social issues. It provides a detailed comprehension of the intricate relationship between economic, social, and agricultural factors leading to food insecurity.

Professor Bhanu Shankar's paper titled *"Trade-Off Between Economic Development and Environmental Conservation With Special Reference To The Catastrophe In Himachal Pradesh And Uttarakhand"* provides a detailed examination of the environmental weaknesses in mountainous areas encountered during development projects. This research explores the balance between economic growth and the preservation of the environment in the environmentally delicate Himalayan areas of Himachal Pradesh and Uttarakhand. By examining the environmental vulnerabilities of mountain ecosystems, this study investigates how infrastructure development, such as road expansion, hydropower schemes, and uncontrolled tourism activities, jeopardize fragile equilibrium in those areas. Through an examination of recent disasters and environmental difficulties, the report highlights the critical necessity for sustainable development plans that emphasize ecological conservation alongside economic goals.

In her insightful study *“The Role of Medieval and Pre-Independence Assamese Drama in Establishing Integrity and Infusing Assamese Society with The Spirit of Nationalism,”* Dr. Bibha Devi discusses the transformative impact of Assamese drama on fostering social unity and patriotic sentiment. The analysis of Sankaradeva’s literary works in this paper is very interesting, effectively linking cultural legacies with wider societal objectives, thus making a significant contribution to literary and historical research. Assamese theatrical heritage has been deeply connected to the cultural and social framework of the region for a significant period of time. Assamese folk culture and literature passed down through oral tradition long before written scripts were introduced, eventually evolving into written form. The Vaisnava play, called “Chihnno Jatra,” was the initial theatrical form in Assamese literature, developed by the famous Vaisnavite intellectual Srimanta Sankaradeva for spreading his “Ek Saran” religion. Sankaradeva made many plays in Assamese that were important for social and religious reform, showing how dramas can influence wider societal objectives. In contrast to the adaptable Jatra tradition of Bengal, the Assamese dramatic tradition remained firmly connected to its Vaisnavite roots, despite the changing political and social environment.

Millet has been a transformative crop for sustainable agriculture and nutritional security in India, offering a comprehensive analysis of its global significance. Dr. Jomon Mathew’s paper on *“Millets for Sustainable Agriculture and Nutritional Security: An Evaluation of India’s Role and Performance in Amrit Kaal”* explores the future role of Millets in India. The study reveals that the global millet market reached USD 11.02 billion in 2023, with India contributing 41% of global production across over 93 countries. Millets are highlighted as nutritional powerhouses, being three to five times more nutritious than traditional staples, such as wheat and rice, packed with vitamins, minerals, and dietary

fiber, which can help manage weight and reduce health risks. Agriculturally, these ‘miracle grains’ are remarkably resilient, requiring 70% less water than rice, maturing faster than wheat, and demanding 40% less energy for processing. Despite their potential, the research exposes a concerning trend: millet cultivation has dramatically declined from 40% to 20% of grain production, with a 62.57% reduction in cultivated area over six decades. This study methodically examines this decline using sophisticated statistical techniques such as Compound Annual Growth Rate (CAGR) and standard deviation, drawing data from authoritative sources such as the Ministry of Agriculture and FAOSTAT. In conclusion, this study urges institutional support and farmer education to revitalize millet cultivation, positioning these crops as critical to addressing global food security and climate adaptation challenges.

The article *“Wellness Tourism Products and Services for Economic Growth -- Opportunities in the Amrit Kaal with Special Reference to Kerala”* by Dr. Manju T.K. explores the potential of wellness tourism, particularly Ayurveda, to stimulate India’s economy during the Amrit Kaal period. This study provides a comprehensive analysis of health, medical, and wellness tourism by focusing on Kerala’s unique position as a leading destination for Ayurvedic health retreats. By presenting statistics on international visitor arrivals and their motivations, this study demonstrates the economic viability of wellness tourism. The author explains Ayurveda’s holistic approach to wellness, emphasizing its focus on both curative and preventive aspects, which sets it apart from conventional medical treatment. This study emphasizes how Ayurveda tourism contributes to local economies through employment generation, promotion of indigenous products, and facilitation of cultural exchange. This research is valuable for the strategic examination of governmental initiatives, infrastructure development, and marketing strategies aimed at elevating Ayurveda to a

global health and wellness brand. By exploring destinations such as Kerala and Rishikesh, this study offers a forward-looking perspective on how India can leverage its traditional healthcare expertise to drive economic growth. The article's strength lies in its multidisciplinary approach, which integrates tourism studies, healthcare, economic development, and cultural insights to present a compelling narrative about the transformative potential of wellness tourism.

India's post-independence planning aimed at growth and reducing poverty while also striving for balanced regional development; however, studies highlight significant disparities in this regard. Dr. Jagat Jyoti Barua discussed the planning of India over five years and specifically looked at the development in the Assam region compared to six other states after their independence in 1950. The research highlights a contrast in the socio-economic status of regions such as Maharashtra and Gujarat compared to less developed areas such as Assam and Bihar based on factors such as literacy rates and poverty levels, as well as historical factors such as colonial legacy and regional neglect. The research indicates obstacles to development in the states and Bihar, despite governments endeavoring to achieve balanced advancement. Dr. Barua recommended measures such as planning, detailed economic assessment, effective resource distribution, rigorous expense oversight, and concentrated attention on underprivileged regions. The study delivers an evaluation of Indian planning using data and puts forth a framework for future tactics that are comprehensive and adaptable to address diverse socioeconomic circumstances in various states.

India's evolving financial inclusion tactics, stressing on the impact of Pradhan Mantri Jan Dhan Yojna (PMJDY) and the inventive JAM (Jan Dhan-Aadhaar-Mobile) Trinity was critically evaluated by Dr. Rakhee Pushparaj Singh

and Dr. Prashant Kumar in the article “*Advancing Financial Inclusion through JAM Trinity Integration.*” This study shows how these innovative programs greatly increased financial opportunities for many disadvantaged Indians, especially in rural and underserved regions. Through the use of technology and digital infrastructure, the government has effectively opened opportunities for unbanked populations to join the traditional financial system. This study follows the development of financial reforms in India after gaining independence, showing that recent methods have been more successful than previous ones. The writers display impressive advancements, such as the creation of more than 50 crore Jan Dhan accounts, the distribution of RuPay debit cards, and the incorporation of Aadhaar for direct benefit transfers. This study highlights that financial inclusion involves more than just opening bank accounts; it also involves building lasting economic opportunities, encouraging digital literacy, and empowering disadvantaged groups. This research offers an optimistic view of how specific policy actions can stimulate equitable economic growth and societal change.

The article “*The Impact of Crude Oil Price Fluctuations on the Indian Economy,*” by Dr. Malkhan Shree Ramesh and Dr. Arun Kumar offers a detailed and enlightening evaluation on the influence of crude oil price changes on various economic indicators in India. The research is noteworthy for its strong research methods, analyzing ten years of secondary data from March 2013 to March 2022 to investigate the complex connections between crude oil prices and economic factors such as the stock market (BSE Sensex and Nifty 50), exchange rates, inflation, and GDP. Researchers have used statistical methods such as Karl Pearson’s Correlation Coefficient and Analysis of Variance (ANOVA) to offer a detailed understanding of the intricate patterns in oil price fluctuations. The strengths of this study include its methodological approach, thorough data analysis, and its clear hypotheses that provide perspectives on India’s

economic strengths and weaknesses. The study shows important connections between oil prices and economic indicators and offers suggestions for India to manage risks by diversifying oil imports, building strategic oil reserves, and enhancing refining capabilities. This study provides valuable insights into the impact of oil price changes on the overall economy of India, which relies heavily on energy resources.

In her research paper *“The Role of Digital Public Infrastructure in Shifting Approaches to Financial Inclusion in India,”* Dr. Sindhu K investigates India’s utilization of latest digital methods to boost financial accessibility. The study stresses the considerable advancements in financial inclusion achieved through the deployment of digital public infrastructure, notably the India Stack, which encompasses digital identification, payment systems, and data-exchange mechanisms. Bank account ownership in India has seen a remarkable surge, rising from 35.2% in 2011 to 77.5% in 2021, primarily due to initiatives such as Pradhan Mantri Jan Dhan Yojana (PMJDY). This program has demonstrated inclusivity, with women comprising over half of the account holders, and rural areas accounting for two-thirds of the accounts. This paper documents India’s progressive schemes, including the Atal Pension Yojana, Pradhan Mantri Mudra Yojana, and Stand-up India Scheme, which have empowered marginalized groups such as women, scheduled castes, and tribes. The Unified Payments Interface (UPI), a key component of the digital payment ecosystem, has transformed financial transactions, facilitated 803.6 crore transactions, and enabled instant, free transfers. Dr. Sindhu’s analysis showcases India’s effective implementation of digital financial inclusion strategies and offers valuable insights for other developing nations seeking to mitigate economic disparities through technological innovations.

Judicial involvement in public policy is highlighted as a potent tool for societal change, as noted by Adv. Vinayak Sachin in his work *“Policy Interventions by the Judiciary in Shaping Our Polity.”* This study examines the role of the Indian judiciary in tackling societal issues and safeguarding citizens’ rights in cases where the legislative and executive branches are unable to fulfill their duties. Sachin charts the development of judicial activism from the significant AK Gopalan case to more recent rulings, emphasizing the judiciary’s crucial role in interpreting constitutional clauses and promoting social equality. This article points out how court interventions have played a key role in safeguarding basic rights, advancing gender equality, stopping abuse in custody, and guaranteeing personal privacy. This research focuses on how the judiciary can bridge gaps in governance by thoroughly examining important cases such as Maneka Gandhi, Vishaka, and Justice K.S. Puttaswamy. Sachin’s work is admirable for its well-rounded perspective, effectively differentiating between judicial activism, restraint, and overreach, and offering a complex framework for interpreting judicial interventions. Overall, the research praises the judiciary’s function as a protector of constitutional values, highlighting its capacity to renew trust in democratic institutions and advocate for marginalized communities through legal analysis.

Summary

India is approaching its 100th year of independence and aims to transform into a knowledge-based, technologically advanced, and globalized economy by 2047. The past six decades have seen India going from being food deficient to being a major supplier of agricultural items such as rice, milk, and cotton. India’s economic growth, averaging 8% over the years, stems from reforms initiated in 1991, and greater global economic integration. However, obstacles, such as poverty, inequality, and regional disparities, continue to

delay inclusive growth. India's cultural traditions emphasize the mutual dependence of nature and human communities, supporting transformative education and action. Policies should focus on developing cognitive capabilities and higher-order skills, such as critical thinking, creativity, and consistent sustainable development goals. This is important because it highlights the challenges India faces in its pursuit of a knowledge-based, technologically advanced, and globally integrated economy by 2047. This issue discusses the progress made by India in recent decades, including its becoming a major supplier of agricultural products and achieving an average economic growth of 8% over the years. However, it also points out that poverty, inequality, and regional disparities continue to impede inclusive growth, and environmental issues require attention to maintain India's sustainability. These studies highlight the need to balance industrial growth with environmental protection, raise awareness of the severity of India's environmental problems, and sustainably manage India's natural resources.

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INDIA'S INTERNATIONAL TRADE IN THE AMRIT KAAL – PRIORITIES AND WAY FORWARD

B.P. Sarath Chandran

Abstract

India is one of the fastest-growing economies in the world, and a major engine of growth in the post-pandemic global economy. In the last seventy-five years of the independent period, India transformed from a protected inward-looking economy to a liberalized global economy, with exports and imports growing substantially in the recent period. Despite this growth, the share of India's trade is small compared to developing countries, emerging economies, and India's export competitors. International trade must play a much more dominant role in the Amrit Kaal to become a developed nation and achieve the status of the third largest economy in the world. This requires the formulation of carefully calibrated policies and sustained efforts to address the lingering problems of the economy. Foreign Trade Policy 2023 discusses achieving two trillion dollars in trade and announces various innovative policies to address this.

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Despite rapid strides in trade facilitation measures, India still ranks lower in the logistics performance index and ease of doing business, making it less competitive with its trade competitors. Most international trade occurs through Global Value Chains, and India's participation in GVC is smaller, and the gains are limited. The inverted duty structure prevailing in many product categories prevents participation in the export trade, resulting in additional imports. India's trade needs to be diversified into many products and markets to sustain higher export growth. India has signed many Regional Trade Agreements and is a dominant member of the South Asian Association for Regional Cooperation (SAARC), an FTA partner with ASEAN, and is actively pursuing an RTA with BIMSTEC.

JEL Classification Codes: F10, F13, and F15.

Keywords: Export Competitiveness, Regional Trade Agreement, Export Policies

Introduction

The “Viksit Bharat” (Developed India) target is an ambitious goal set by the Indian government to transform India into a developed nation by 2047, which will mark 100 years of independence. Viksit Bharat envisions a prosperous, inclusive and sustainable society where India will assign the role of a global leader in the global order. India's GDP has to improve to 27–30 trillion US\$ to become a developed nation with a per capita income of over 12,000 US\$. This is possible through sustained high economic growth powered by the manufacturing sector growth and enhanced export performance. In addition, an environment of skill development, innovation, and entrepreneurship must be developed to sustain high economic growth rates. Both physical and social sector development are paramount to improving the quality of life of a developed nation. This necessitates institutional reforms, transparency, and

effective governance to deliver essential services. This study examines the role of international trade in promoting economic growth to achieve the objective of *Viksit Bharat*. It outlines the challenges faced by India's trade sector and the initiatives required during the *Amrit kaal* period to achieve the desired objective.

Trade Profile of India

India is one of the world's fastest-growing economies, with a considerable share in world trade. Being a founder member of the WTO, India is part of many regional trade formations and is in a position to influence global trade architecture and policy formulations. The sustained economic growth experienced in the post-nineties got India the tag of the emerging economy of the world. India actively participates in global trading foras and is a prominent voice of the global south and developing countries. India's trade-to-GDP ratio for 2022 was 49.23 per cent, rising steadily over the recent period. India's merchandise exports for the year 2021 were 394.814 billion, and merchandise imports amounted to 590.402 billion, resulting in a considerable trade deficit of 175. 588 billion for the year. India has a better performance in service trade, with exports contributing 240.655 billion US \$ and imports accounting for 137.974 billion US \$, resulting in a trade surplus of 102.691 billion for the same year. The United States, the United Arab Emirates, and China are the major export destinations of India, and the major import partners are China, the UAE, and the United States. India is one of the world's well-protected economies, with a simple average tariff of 9.86 per cent, a weighted average tariff of 5.87 per cent, and a maximum tariff rate of up to 150 per cent.

There has been a structural shift in India's composition of export products from traditional agricultural natural resource products to industrial products. In terms of the value of exports, the top five HS-digit products for the

year 2023 were mineral fuels, pearls and precious stones, electrical machinery, nuclear reactors, and pharmaceutical products. However, these products have a relatively small export share in the global market. The three export products with a larger share are Cotton, Carpets and Lac, which are relatively low-value products. This shows that India does not export high-value technological products and is confined to relatively low-value industrial and metallurgical products.

Table 1 India’s Export Share in Value with the World - 2023

HS Product Code	Product Label	Value in 2023, USD thousand	Share in world exports, %
‘27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	89677657	3
‘71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	33418175	4
‘85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	32153774	1
‘84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	29436515	1
‘30	Pharmaceutical products	21420580	2
‘87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	20858390	1

‘29	Organic chemicals	19423278	4
‘72	Iron and steel	11825795	2
‘10	Cereals	11291058	7
‘73	Articles of iron or steel	9805318	3
‘62	Articles of apparel and clothing accessories, not knitted or crocheted	7846777	3
‘76	Aluminium and articles thereof	7334810	3
‘39	Plastics and articles thereof	7116838	1
‘61	Articles of apparel and clothing accessories, knitted or crocheted	6658938	2
‘38	Miscellaneous chemical products	6511285	2
‘52	Cotton	6492693	13
‘03	Fish and crustaceans, molluscs and other aquatic invertebrates	6302852	5
‘63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	5389048	7
‘90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...	5057607	1
‘40	Rubber and articles thereof	4413686	2

Source: ITC Trade Map

Table 2 Export Commodities with Larger Share in World Exports – 2023

Product Code	Product Label	Value in 2023, USD thousand	Share in world exports, %
'52	Cotton	6492693	13
'57	Carpets and other textile floor coverings	1811059	11
'13	Lac; gums, resins and other vegetable saps and extracts	956671	10
'78	Lead and articles thereof	718700	8
'09	Coffee, tea, maté and spices	4350001	7
'10	Cereals	11291058	7
'50	Silk	116614	7
'53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn	434087	7
'63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	5389048	7
'17	Sugars and sugar confectionery	4279128	6
'03	Fish and crustaceans, molluscs and other aquatic invertebrates	6302852	5
'55	Man-made staple fibres	1678015	5
'69	Ceramic products	3053583	5
'79	Zinc and articles thereof	889276	5

‘29	Organic chemicals	19423278	4
‘32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring ...	3004476	4
‘36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations	257216	4
‘67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles ...	565197	4
‘71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	33418175	4
‘14	Vegetable plaiting materials; vegetable products not elsewhere specified or included	45874	3

Source: ITC Trade Map

**Table-3 India's Top Ten Export and Import Partners – 2023
(US \$ 1000)**

Importers	Exported value in 2023	Exporters	Imported value in 2023
United States of America	75842751	China	101338799
United Arab Emirates	33044237	Russian Federation	61602410

Netherlands	23148724	United Arab Emirates	44815112
China	16266543	United States of America	42735946
United Kingdom	13373973	Saudi Arabia	33934311
Singapore	12103870	Iraq	29475307
Bangladesh	11251079	Indonesia	22770032
Saudi Arabia	10841068	Korea, Republic of	21409244
Germany	9669594	Singapore	20086826
Hong Kong, China	8723115	Switzerland	19607894
World	431997639	World	667179960

Source: ITC Trade Map

Trade Logistics Performance of India

Trade Performance largely depends on a country's trade infrastructure. A comparison of India's trade logistics with those of its competitors showed a considerable gap, which adversely affects trade costs and competitiveness. Despite its recent improvements, India's rank in the Logistics Performance Index for the year 2023 was 38, which is far below that of Singapore (1), Germany (3), Japan (13), and China (19). India's ranking fares poorly in customs (47), infrastructure (47), Tracking and Tracing (41), and Logistics Competence and Equality (38). India needs to improve its trade logistics and trade facilitation to improve its trade performance.

Table 4 Trade Logistics Performance Index -2023

Economy	LPI Score	LPI Rank	Customs	Infrastructure	International Shipments	Logistics Competence and Equality	Timeliness	Tracking and Tracing
Singapore	4.3	1	1	1	2	1	1	1
Germany	4.1	3	7	3	8	3	10	3
Japan	3.9	13	7	5	38	9	17	16
China	3.7	19	31	14	14	20	30	23
India	3.4	38	47	47	22	38	35	41

Source: Trade Logistics Performance Index, World Bank

India has a trade surplus with many countries, and the highest is with the USA, followed by the Netherlands, Bangladesh, Nepal, and the United Kingdom. Other developed nations where India had a trade surplus include France, Italy, and Spain. Among its neighbors in the South Asian region, India has a trade surplus with Bangladesh, Nepal, and Sri Lanka.

**Table 5 India's Positive Trade Balance for the year 2023
(US \$ 1000)**

Partners	Balance in value in 2020	Balance in value in 2021	Balance in value in 2022	Balance in value in 2023
United States of America	22704923	30123681	28457722	33106805
Netherlands	3299610	5934186	12578166	18056381
Bangladesh	6888377	12328648	11832148	9349183
Nepal	5224639	7872139	7637417	6390262
United Kingdom	3056773	3629393	1613120	5631058
Israel	846783	1623317	4799391	4092141
Türkiye	2056562	5298254	6315873	3836394
Kenya	1889537	2329195	2817452	3134657

Togo	940435	2564077	4856505	3110721
Area Nes	617266	894862	2820012	2835249
Egypt	380738	287223	1289664	2425430
Sri Lanka	2537814	3819933	5291577	2375742
France	1367196	2240376	3804204	2224707
Mexico	-20448	18956	561784	2204745
Italy	652790	2884114	2980195	2082673
Spain	1652260	2401442	2006077	1880474
Albania	44008	25895	39254	1355317
Tanzania, United Re- public of	499044	-196076	1249572	1237132
Djibouti	319914	606038	838052	1145600
Portugal	712964	947084	787419	1004940

Source: ITC Trade Map

India's highest trade deficit is with China, which ranges from 35 to 40 percent of the country's total trade deficit. Other major economies with large trade deficits are the Russian Federation, Iraq, and Saudi Arabia, from which we import the bulk of our petroleum crude imports. Interestingly, India has a trade deficit with most of its FTA partners, including South Korea and Japan, and ASEAN members, such as Indonesia, Singapore, Thailand, Malaysia, and Vietnam. This indicates that some of our initial FTA signings did not yield the desired trade effect.

Table 6 India's Major Trade Deficit for the year – 2023
((US \$ 1000))

Partners	Balance in value in 2020	Balance in value in 2021	Balance in value in 2022	Balance in value in 2023
China	-39790558	-64498539	-87164779	-85072256
Russian Federa- tion	-3378361	-5360774	-37701069	-57511537
Iraq	-14714992	-24533652	-36613362	-25965053

Saudi Arabia	-11569537	-19443928	-36035451	-23093243
Switzerland	-10064667	-28201717	-14962604	-18213438
Indonesia	-7657053	-8635412	-18798727	-15368551
Korea, Republic of	-7652373	-9972703	-13225611	-15122661
Japan	-6163566	-8335076	-10049504	-12562145
United Arab Emirates	-5947772	-17623706	-22528649	-11770875
Qatar	-6866650	-9829964	-15561653	-11112257
Hong Kong, China	-5040976	-6911490	-9658960	-9625858
Australia	-3792169	-8185673	-11415460	-8953943
Singapore	-4011727	-7551444	-12587930	-7982956
Kuwait	-4964447	-8251869	-11731969	-7244849
Taipei, Chinese	-2177774	-3183566	-5077089	-6004859
Germany	-2027444	-3451637	-3461454	-5565751
Thailand	-1446698	-3153023	-5211092	-5187150
Ireland	139154	-447336	-1889911	-4926574
Malaysia	-1184035	-5385446	-6351823	-4201701
Viet Nam	-1064085	-436925	-3123965	-3540788
World	-92491618	-175588331	-279881779	-235182321

Source: ITC Trade Map

Revealed Comparative Advantage (RCA)

The revealed Comparative Advantage Index shows how competitive a product is in countries' exports compared with the product share in world trade. A product with high RCA is competitive and can be exported to countries with low RCA. Measures of Revealed Comparative Advantage (RCA) have been used to assess a country's export potential. It can also provide useful information on potential trade prospects with new partners. Countries with similar RCA profiles are unlikely to have high bilateral trade intensities unless intra-industry trade is involved. If estimated at high levels of product disaggregation, RCA measures can focus on other non-traditional products that might be successfully exported. The RCA index of country 'i' for product 'j' is often measured by the product's share of the country's exports in relation to its share of world trade:

$$RCA_{ij} = \frac{(x_{ij}/X_{it})}{(x_{wj}/X_{wt})}$$

where x_{ij} and x_{wj} are the values of country i's exports of product j and world exports of product j, respectively; X_{it} and X_{wt} refer to the country's total exports and total world exports, respectively. A value less than unity implies that the country has revealed a comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a comparative advantage in the product. The developed comparative advantage is extracted from the World Bank's WITS database for the year 2023 for HS 2-digit commodity classification. The RCA of HS-2 commodities is classified into four categories: products with High Comparative Advantage, Low Comparative Advantage, High Comparative Disadvantage and Low Comparative Disadvantage. The RCA values showed that there were 17 products with high comparative advantages

and 26 products with low comparative advantages. India's comparative advantage lies in these 43 product categories, and the government has to adopt product-specific strategies to improve export value and export share in world trade.

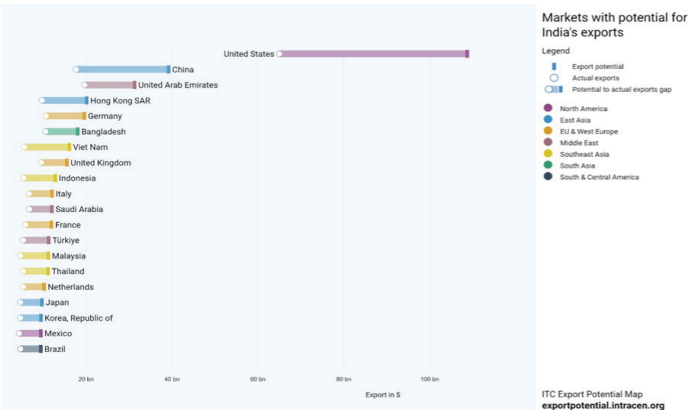
Table 7 Comparative Advantage/Disadvantage of India in HS-2 digits products- 2023

Products (HS-2) with High Comparative Advantage	Products (HS-2) with Low Comparative Advantage
52, 57, 13, 78, 9, 10, 53, 63, 17, 50, 3, 79, 55, 27, 69, 71, 29	36, 67, 89, 25, 62, 14, 32, 76, 54, 68, 23, 61 58, 41, 72, 24, 11, 73, 46, 30, 38, 40, 42, 5 7, 2
Products (HS-2) with High Comparative Disadvantage	Products (HS-2) with Low Comparative Disadvantage
28, 64,56,15,33,59,16,93,21,48, 51,82,74,20 26,34,8,12,49,60,70,84,39,85, 87,96,83	35, 19, 94, 90, 65, 86, 88, 92, 75, 4, 81, 44 97, 80, 18, 43, 6, 95, 22, 31, 45, 91, 37, 66 1, 47, 99

Source: Computed from WITS

The export potential of a country is the difference between its potential and actual trade and is a useful indicator for understanding the potential markets and products that can be tapped to increase the exports of a country. The export potential of India for the year 2023, with export partners, showed that the USA has the highest untapped potential, followed by China, the UAE, Hong Kong, Germany, Bangladesh, Vietnam, and the UK. This shows that India must concentrate on these destinations to improve its trade performance. Interestingly, India did not sign an FTA with countries with high unmet export potential.

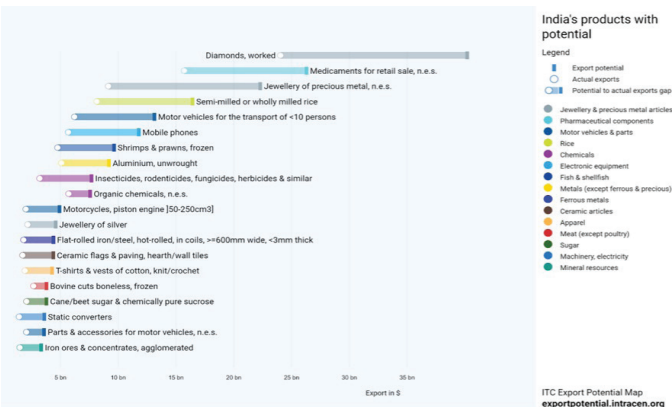
Fig-1 Export Potential with Partner Countries of India



Source: ITC Trade Map

It is also important to identify the product categories in which high export potential exists. Export potential analysis from the Trade Map tool of ITC showed that diamonds, medicaments, jewelry, rice, motor vehicles, and mobile phones are among the products where trade potential exists, and India needs to concentrate on these products to improve its trade performance.

Fig-2 Export Potential with Major Product Categories



Source: ITC Trade Map

India's Major Regional Trade Agreements

After an initial hesitation, India signed many Regional Trade Agreements (RTAs) to improve trade performance and create market access for its products. One of the earliest agreements signed by India was the SAFTA on January 1, 2006, which comprised the subcontinental neighbors of India. India's international trade rose from 1.6% in 2005-06 to 2.5% in 2018-19, and Indian exports to SAFTA countries increased faster than their imports, leading to a significant rise in trade surplus with these economies from about US\$ 4 billion to US\$ 21 billion. The maximum growth in exports to the SAFTA region was recorded in Bangladesh and Nepal. As a subregional association, SAARC could not evolve into a dynamic regional block due to the internal differences between the two largest members, namely India and Pakistan, and intra-regional trade among SAARC countries is among the lowest in the world at 5.6% (2017). India's trade with South Asian countries has remained roughly between 1.7% and 3.8% of global trade. On the other hand, China consistently increased its exports to the region from US\$ 8 billion in 2005 to US\$ 52 billion in 2018, a growth of 546%. The presence of para-tariffs, high logistical costs, inadequate infrastructure, and high informal trade coupled with other non-tariff barriers (NTBs) are the key reasons for India's low intra-regional trade in the neighborhood. Until internal differences are resolved, the SAFTA does not promise to significantly improve India's trade potential.

India signed its first RTA with the ASEAN trade block on August 13, 2009, and the agreement came into force on January 1, 2010. Singapore is India's major exporter partner, while other major export partners include Vietnam, Malaysia, Indonesia, and Thailand. India's trade intensity is lower than Cambodia and Laos, and the Philippines enjoys a comparative advantage across all ASEAN countries with regard to Chemicals and Metal products. India's

disadvantages include product categories, such as fuel, plastic and rubber, wood, footwear, machinery, and electrical and miscellaneous products.

Bilateral trade between the two sides surged from about US\$ 43 billion in 2009-10 to US\$ 97 billion in 2018-19, but India's imports from ASEAN increased at a significantly higher rate than Indian exports to ASEAN. The faster growth in imports has resulted in a significant increase in India's trade deficit with ASEAN, from less than US\$ 8 billion in 2009-10 to about US\$ 22 billion in 2018-19. ASEAN's share in India's total trade deficit increased from approximately 7% to 12% during the same period. This shows that the FTA did not provide the desired results, and that there is an urgent need to renegotiate the agreement to bring mutual gains for both parties.

Another promising regional cooperation is the Bay of Bengal Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), which came into existence on June 6, 1997, as a link between South and Southeast Asia – SAARC and ASEAN. The BIMSTEC region has large natural resources to explore, and India can gain considerably if there is further liberalization of trade barriers between members. However, challenges exist, including connectivity and infrastructure constraints, non-tariff challenges such as a long negative list, trade facilitation problems, border issues, refugee issues, lack of political will, bureaucratic hurdles, and lack of regular summit meetings. Given the current standoff between India and Pakistan and the volatile political differences, BIMSTEC has emerged as a viable sub-regional integration

India also signed many bilateral FTAs with countries such as Sri Lanka, Singapore, South Korea, Japan, Malaysia, and Thailand. The India-Korea CEPA became operational in 2010, and during the period 2009-10 to 2018-19, bilateral trade between the two countries increased from about US\$ 12 billion to US\$ 21.5 billion and grew at a pace more or less

similar to that of India's trade with the world. However, Indian imports from Korea surged much faster than exports. While India's imports increased at a CAGR of approximately 8%, exports to Korea rose at a CAGR of less than 4%. All bilateral FTAs showed similar results: while overall trade increased after signing the FTA, the gain was disproportionately large for partner countries, while India's gain remained moderate.

There was a proposal to create a mega trade block, namely, the Regional Comprehensive Economic Partnership (RCEP) agreement between the ten-member ASEAN group and its six RTA partners. India, being ASEAN's FTA partner, participated in the negotiation but pulled out at the last-minute non-availability of special and differential treatment with major countries with whom we have a huge trade deficit.

India's tariff levels are high compared with other Southeast countries and are bound to aggravate the trade deficit immediately after signing FTAs. India's loss in trade in goods should be compensated for by the gain in services trade and investment cooperation, and India should pursue a comprehensive trade agreement with goods, services, and investment components.

Trade Led Growth during Amrit Kaal

India's trade performance did not commensurate with its economic size. Being the fifth-largest economy in the world, India's trade position ranges from 15th to 20th in the world. India's exports are confined to a small basket of traded commodities, and there should be a conscious effort to identify new products for global exports. RCA analysis showed that there are a large number of products with comparative advantage, and they have to be developed to cater to the export market. India needs to strengthen its product strategy for high-value commodities such as engineering goods, electronics, drugs, and pharmaceuticals,

as well as competent areas such as leather, textiles, gems, and jewelry. Service exports also need to be augmented in areas such as IT, Education, health, and tourism. In the presence of digital infrastructure, India should concentrate more on digital service exports and promote e-commerce platforms. India also needs to diversify its export destinations away from the traditional markets of the USA, Europe, and South Asia. Special emphasis should be placed on Africa, Latin America, Central Asia, and other developing countries.

Currently, a large share of international trade occurs through Global Value Chains (GVCs). Global production of commodities by MNCs is diverse across the globe, and participating nations contribute value to the final product of the commodity. Most of the high-value commodities trade, such as electronics, automobiles, and textiles, occurs through GVCs. China is the global hub of the GVC, and the USA, European nations, and Southeast Asian countries are actively participating in GVCs to improve their trade. India needs to identify the products and processes to participate in GVCs and RVCs so that trade can be substantially improved in the future. Technology Integration is important in value chain creation, and the government must promote the adoption of Industry 4.0, technologies such as AI, IoT, robotics, and blockchain. The implementation of digital supply chain management systems, encouraging R&D activities for innovative production, and skill upgradation are important during the Amrit Kaal period for value chain creation.

Trade facilitation is important as it simplifies and harmonizes international trade, reduces transaction costs and time, and thereby improves export competitiveness. India needs to take further measures to digitalize the trade process, streamline documentation, and effectively coordinate with trade border agencies. Trade logistics reduces transport costs and time, and helps improve

competitiveness and participation in value chains. India currently ranks low in the Logistics Performance Index (LPI) of the World Bank, and efforts should be made to improve last-mile connectivity, establish multimodal transportation, and establish warehousing and storage facilities.

In recent years, there has been a growing integration of services into manufacturing processes and products known as “servification of manufacturing.” Manufacturing servification occurs mainly through technological improvements, changing customer preferences, globalization of supply chains, and product differentiation. Since India enjoys a comparative advantage in services trade, this can result in higher value-added activities, increased customer loyalty, steady revenue streams, and enhanced product differentiation and competitiveness.

The highly negotiated agreements did not yield the desired results for India, and the trade partner took a larger share of enhanced trade. In addition, India has not had a trade arrangement with important trading partners like the U.S.A, the U.K, Australia, and the U.A.E for a long time. Learning from past mistakes, India is now negotiating FTAs with important trade partners and has recently signed agreements with Mauritius, Australia, and the UAE. India is also currently negotiating trade agreements with the UK, the EU, Israel, and others. These types of carefully crafted, enduring trade agreements can enhance India’s trade during the Amrit Kaal period.

Conclusion

India is the fastest growing economy in the world and currently occupies the position of the fifth largest economy in the world. India has certain inherent strengths of demographic dividends, large educated human resources, digital infrastructure, rapidly improving connectivity, a large manufacturing base, and an evolving technological

environment. With these strengths, India can grow rapidly, catering to its large population, and exporting goods and services across different regions and product groups. India enjoys a comparative advantage in terms of many products and services. There is scope for improving the intensive and extensive margins of trade. However, India faces challenges in terms of infrastructure, competitiveness, logistics, and strategic trade policies at the national and state levels. Conscious efforts to untangle these challenges through a calibrated approach help drastically improve trade performance, which can act as an important driver of growth to achieve the Viksit Bharat objective.

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AN ASSESSMENT OF THE PERFORMANCE OF NON-HIMALAYAN STATES OF INDIA IN THE COMPOSITE WATER MANAGEMENT INDEX OF NITI AAYOG

Sheila Srivastava

Abstract

The Composite Water Management Index is an earnest and pioneer attempt of the NITI Aayog to index scarce water resources, map various sources, and the prevalent water management system of various States of the India. This index consisted of nine themes and 28 indicators. The present study attempts to compare and contrast the performance of 17 non-Himalayan states of India by selecting nine core indicators. Gujarat ranks top in three consecutive years in the index. States like Andhra Pradesh Madhya Pradesh, Haryana, Tamil Nadu, Goa etc. are also performing well in all indicators whereas Jharkhand, Odisha, Uttar Pradesh, Bihar, Kerala etc. are lagging behind. It is also interesting to note that water scarce states like Gujarat, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra etc. are extremely well in managing water resource whereas water rich states like Kerala, Bihar, Chhattisgarh are poor. Poor management

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of water resources by major agriculture producing states like Uttar Pradesh, Maharashtra etc. is alarming.

Keywords. Water resources, Composite Water Management Index, rural drinking water, NITI Aayog

Introduction

India, with 17% of the world's population and 4 % of fresh water resources, is suffering from an acute water crisis with its faster economic growth; at present, nearly 600 million Indians face a high to extreme water crisis (NITI Aayog 2019). Approximately, two lakhs of Indians die every year because of inadequate water, sanitation, and hygiene. India is close to the threshold per capita availability of water of 1000 m³ per Falken Mark scarcity of water indicator, and the Ganges River basin area, which generates nearly 40 percent of the nation's GDP, is below this threshold level (NITI Aayog 2019). There is a paradox of mass wastage of surface water in water-rich states on the one side and widespread overexploitation of groundwater resources in both water-rich and water-scarce states of India. To meet irrigation needs, India relies more on groundwater, which amounts to 44.7 per cent (NITI Aayog 2018). It is projected that by 2030 nearly 6 % of India's GDP is going to be affected by water scarcity and the nation will host nearly 1.5 billion people and feeding its entire population will be a daunting task. Depleting access to potable water impacts food security and health which in turn can cause social unrest and political instability. Thus it is high time to deepen our knowledge about nation's water resources and use pattern for its efficient management and sustainability. The Composite Water Management Index (CWMI) of National Institute for Transforming India (NITI) Aayog identifies these vulnerabilities and pioneered a great step towards this juncture. NITI Aayog developed the CWMI to assess the present status of water resources and their management, but also to enable future effective water management systems in India. This report provides a clear

indication of the performance of states on key indicators, how states have progressed in it, identifying areas for further investment with respect to water resources, and developing a national-level data platform for all states to cooperate and compete. This study compares and contrasts the performance of various states of India in the CWMI of the NITI Aayog.

Methodology and Data Source

The prime source of data for this study is the CWMI of NITI Aayog. The CWMI report for the Financial Year (FY) 2016-17, 2017-18 with base year 2015-16 was taken into consideration. This is a composite index of nine themes, each with different weights attached. These themes were subdivided into 28 indicators. In the present study, only 9 indicators were selected on the basis of relevancy and also for data amenability. Though CWMI index has classified Indian States into Himalayan states and Non-Himalayan states, present study considers non-Himalayan states only since it consists of 17 major States of the Indian union. The value of the theme index ranges between 0 and 100; as the index value increases, performance also improves, and vice versa. The value of indicators is represented as a percentage of performance ranging from 0 to 100 %; zero means worst and 100 means best performance.

Results and Discussion

The status and progress of states on water management on the basis of nine themes using 2015-16 as the base year and changes over it in FY 2016-17 and 2017-18 are given in Table 1. It is obvious that 13 states improved their water management scores between FY 15-16 and FY 17-18. Ten States across these categories showed an improvement of more than five points.

Table: 1.Performance in CWMI by different states during the study period

States	FY 2017-18		FY 2016-17		2015 -16 (base year)	Trend in ranking from 2016-17 to 2017-18)
	Rank	Index score	Rank	Index score	Rank	
Gujarat	1	75	1	75	1	No change
Andhra Pradesh	2	74	3	68	2	Up by 1 position
Madhya Pradesh	3	70	2	69	3	Down by 1 position
Goa	4	60	11	44	10	Up by 7 points
Karnataka	5	59	4	56	5	Down by 1 position
Tamil Nadu	6	58	7	51	6	Up by 1 position
Haryana	7	54	16	38	16	Up by 9 position
Maharashtra	8	56	5	55	4	Down by 3 position
Punjab	9	52	6	53	7	Down by 3 position
Telangana	10	50	8	50	11	Down by 2 position
Rajasthan	11	47	10	48	13	Down by 1 position
Kerala	12	45	12	42	12	No change
Chhattisgarh	13	45	9	49	8	Down by 4 position
Odisha	14	39	13	42	9	Down by 1 position
Uttar Pradesh	15	39	15	38	14	No change
Bihar	16	38	14	38	15	Down by 2 position
Jharkhand	17	34	17	35	17	No change

Source: NITI Aayog Composite Water Management Index (2018, 2019)

The average change in scores across states was +4.8 points. Haryana reported maximum progress in tuning of 26 points during this period. Gujarat has retained its top most position in all the three consecutive years. There is a fall in the scores of Punjab, Rajasthan, Chhattisgarh, Odisha and Jharkhand. At the same time, states such as Goa and Haryana have substantially improved their rankings. Uttar Pradesh (UP), Bihar, and Jharkhand are bottom liners. It is interesting to note that water-scarce states showed efficacy and urgency in the management of water resources and bagged top positions in ranking. In the case of UP, it is a home for more than 23 crores of people producing 23.6 per cent of national agriculture produce, bagged only the 15th position in the national ranking, signifying the non-sustainability of Indian agriculture. Paradoxically, Kerala, with 2.76 per cent of the nation's population, with only 1.2 per cent of the total land area of India receiving 4.4 per cent of the total national rainfall, ranks 2 in national rainfall among non – Himalayan states, bagged only 12th position in CWMI(NITI Aayog,2019, HimaHari,2015, GOK,2017). Ironically, certain low-performing states bear the largest burden on national population and agricultural production.

Although the CWMI consists of 28 indicators, the present study attempts only 9 indicators to compare and contrast only nine indicators. These indicators are Indicator1, 2, 3 20, 21,22,23,24 and 27. Here, a comparative study of FY 2017-18 with 2016-17 was made and the values in parentheses are the respective ranks. Indicator 1 measures the area irrigated by restored water bodies as a proportion of the total area that can be irrigated by restoring all the identified water bodies, including rivers, ponds, and tanks. It designates a tangible benefit of state efforts for the restoration of water bodies. Significant variation exists among the state performances, with the median state restoring 45% of the possible irrigation potential of the identified water bodies. Seven of the 17 reported states restored more than 80% of the possible

irrigation potential. Punjab has slipped its top most position in 2016-17 to 7th position though there is no decline in its score (Table 2 column 2). However, Madhya Pradesh bagged the top rank by restoring 100 per cent of its water bodies. Tamil Nadu and Telangana also scored cent per cent performance in water body's restoration whereas UP is the bottom line. In general water scarce states performed well in the restoration of water bodies compared to water rich states. Indicator 2 measures the percentage of over-exploited and critical groundwater units that have experienced a rise in water table levels as compared to the previous year. This indicator signals special attention, given that India's groundwater resources are rapidly declining. Most states displayed good performance in the groundwater recharge indicator during this period (Table 2, Col 3). Overall, the median increase was 27 percentage points between the base and reference years. The major champions of this jump were Gujarat and Tamil Nadu by bagging top positions. However, other states also performed well, such as Madhya Pradesh, Kerala, Karnataka, and Chhattisgarh. Upsettingly, performance of Maharashtra, Punjab, Uttar Pradesh, Rajasthan etc. are meagre. Alarming factor is that these states are major agriculture producers of the nation. In this instance, water-scarce states, in general, performed well compared to water-rich states.

Indicator 3 measures the percentage of overexploited and critical groundwater units that have been mapped and identified for recharging by the state. Abysmal changes were observed in states' performance on the indicator, except in the case of five states that reported mixed performance. Three states—Andhra Pradesh, Gujarat, and Tamil Nadu—had 100% coverage for all three years. Apart from these three states, Punjab, Kerala, and Jharkhand reported a change greater than 10 percentage points in the indicator over the last three years, all of which moved in the positive direction. Worryingly, Uttar Pradesh, which accounts for more than 15% of India's groundwater resources has

mapped only one-fifth of major groundwater recharge areas. Indicator 20 measures drinking water access as well as water infrastructure coverage at household level in rural areas. On average, in India, 70% of rural habitations are fully covered with drinking water. Nine out of 17 states had more than 90% of rural dwellers fully covered with drinking water. Gujarat, Punjab, Madhya Pradesh, Goa, Maharashtra, Uttar Pradesh, Tamil Nadu etc. are best performing states. Kerala is the worst performer and bottom most liner with only 28 % of the rural households are having access to drinking watersupply.

Indicator 21 measures the percentage reduction of households facing water quality problems, and states have displayed improvement in water quality in rural areas in FY 17-18 compared to previous years, but in absolute terms, this is trivial. Interestingly, states such as Gujarat, Tamil Nadu, and Goa have achieved complete reduction in the previous FY itself, and these states have been awarded a full score on the indicator in the index score calculation. Telangana and Maharashtra achieved a 100 per cent reduction during FY 2017-18. Here, the performance of the UP is very poor. Indicator 22 measures urban drinking water access as a percentage of the urban population supplied with drinking water. 93%of India's urban population have access to 'basic water.'Gujarat, Madhya Pradesh and Maharashtrareported the maximum improvement in this indicator.On the other,in states such as Rajasthan and Bihar it is less than 50 %.Indicator 23 measures the ability of states to treat urban wastewater by examining the percentage of total urban wastewater that can be treated using the currently installed capacity. Treating wastewater is important because water contamination is a significant challenge for India. Haryana is the top performer, with an installed capacity to treat 100% of the generated wastewater. Jharkhand, Odisha, and Kerala performed the worst.

Table: 2.Performance (in % rate) of State on selected indicators for the FY 2016-17&2018- 19

States	Indicator 1		Indicator 2		Indicator 3		Indicator 20	
	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17
Gujarat	86 (6)	82 (4)	76 (2)	31 (7)	100 (2)	100 (2)	100 (1)	100 (1)
Andhra Pradesh	91 (5)	72 (8)	75 (3)	28 (9)	100 (1)	100 (1)	69 (12)	68 (11)
Madhya Pradesh	100 (1)	94 (2)	59 (7)	31 (6)	60 (8)	15 (13)	100 (2)	100 (2)
Goa	20 (14)	33 (13)	Na (17)	Na (17)	Na (17)	Na (15)	99 (3)	99 (3)
Karnataka	65 (9)	49 (12)	68 (4)	6 (11)	46 (9)	39 (9)	37 (16)	33 (16)
Tamil Nadu	100 (3)	79 (6)	78 (1)	37 (5)	100 (3)	100 (3)	95 (8)	92 (8)
Haryana	44 (11)	0 (17)	17 (13)	0 (13)	89 (4)	89 (4)	97 (7)	96 (6)
Maharashtra	41 (12)	77 (7)	33 (11)	31 (8)	69 (6)	69 (6)	90 (10)	87 (10)
Punjab	94 (7)	94 (1)	3 (14)	4 (12)	77 (5)	45 (8)	70 (11)	67 (12)
Telangana	100 (2)	70 (9)	49 (8)	90 (2)	12 (14)	77 (5)	60 (14)	55 (14)
Rajasthan	58 (10)	81 (5)	29 (12)	Na (15)	63 (7)	66 (7)	47 (15)	44 (15)
Kerala	95 (4)	82 (3)	62 (6)	40 (4)	28 (11)	10 (14)	28 (17)	22 (17)
Chhattisgarh	11 (16)	57 (11)	67 (5)	100 (1)	17 (13)	17 (12)	97 (6)	94 (7)
Odisha	68 (8)	65 (10)	Na (15)	Na (14)	Na (15)	Na (17)	93 (9)	88 (9)
Uttar Pradesh	0 (17)	0 (16)	34 (9)	21 (10)	21 (12)	30 (10)	99 (5)	99 (4)
Bihar	37 (15)	24 (14)	Na (16)	Na (16)	Na (16)	Na (16)	64 (13)	61 (13)
Jharkhand	13 (15)	8 (15)	33 (10)	50 (3)	29 (10)	28 (11)	99(4)	97 (5)

Source: Composite Water Management Index, NITI Aayog, 2018 and 2019.

States	Indicator 21		Indicator 22		Indicator 23		Indicator 24		Indicator 27	
	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17
Gujarat	-	100 (1)	100 (1)	100 (1)	78 (2)	71 (4)	65 (3)	62 (4)	89 (2)	87 (1)
Andhra Pradesh	29 (11)	29 (5)	83 (9)	83 (7)	32 (12)	24 (11)	30 (11)	26 (11)	44 (11)	44 (10)
Madhya Pradesh	20 (9)	24 (6)	100 (2)	98 (2)	34 (11)	34 (10)	35 (9)	34 (9)	64 (8)	59 (8)
Goa	-	0 (17)	100 (3)	Na (15)	36 (10)	Na (17)	36 (8)	Na (17)	100 (1)	Na (17)
Karnataka	37 (5)	31 (4)	93 (4)	86 (6)	62 (5)	59 (6)	64 (4)	62 (3)	71 (5)	60 (14)
Tamil Nadu	-	0 (16)	74 (12)	70 (10)	52 (9)	52 (7)	31 (10)	31 (10)	47 (10)	46 (9)
Haryana	100 (1)	51 (2)	91 (6)	90 (5)	100 (1)	92 (2)	100 (1)	95 (1)	70 (6)	0 (16)
Maharashtra	23 (7)	19 (7)	85 (7)	72 (9)	72 (4)	79 (3)	71 (2)	58 (6)	64 (7)	59 (5)
Punjab	10 (10)	0 (14)	84 (8)	94 (3)	60 (6)	100 (1)	64 (5)	62 (5)	57 (9)	56 (6)
Telangana	100 (2)	1 (11)	83 (10)	77 (8)	57 (7)	41 (9)	54 (6)	38 (8)	77 (4)	75 (2)
Rajasthan	23 (8)	2 (10)	41 (16)	38 (13)	77 (3)	42 (8)	32 (7)	71 (2)	82 (3)	73 (3)
Kerala	53 (4)	11 (9)	63 (13)	53 (13)	9 (15)	17 (13)	4 (15)	7 (13)	21 (14)	16 (12)
Chhattisgarh	34 (6)	0 (15)	80 (11)	66 (11)	18 (14)	3 (15)	1 (16)	3 (15)	43 (12)	54 (7)
Odisha	7 (13)	0 (13)	62 (14)	62 (12)	6 (16)	7 (14)	6 (14)	4 (14)	41 (13)	41 (11)
Uttar Pradesh	0 (14)	0 (12)	92 (5)	92 (4)	55 (8)	65 (5)	27 (12)	45 (7)	Na (17)	0 (14)
Bihar	9 (12)	18 (8)	24 (17)	20 (14)	18 (13)	18 (12)	18 (13)	18 (12)	0 (16)	0 (15)
Jharkhand	70 (3)	37 (3)	54 (15)	45 (14)	0 (17)	0 (16)	0 (17)	0 (16)	16 (15)	11 (13)

Indicator 24 specifies the actual proportion of the treated urban wastewater. Haryana is the only state that has installed and utilized 100% of its capacity for treating wastewater. Haryana was followed by Maharashtra and Gujarat. Treated wastewater can help bridge the supply-demand gap that is likely to arise in the future. Treated water can help meet the irrigation needs of the country as well as support the increasing demand from industries and households, and can dwindle the burden on already-diminishing freshwater resources. The performances of Jharkhand, Chhattisgarh, and Kerala are bleak in this regard. Indicator 27 portrays the percentage of urban households charged for water supply across states. This indicator is important because pricing of environmental goods, especially water, not only ensures sustainability and improvement of infrastructure and utilities but also encourages judicious use of water among households in an increasingly water-scarce environment. Overall, the proportion of households charged for the water supply increased during this period. Goa reported that 100% of the urban households were charged for water supply, followed by Gujarat. The worst performers were UP, Jharkhand, Bihar, and Kerala.

Conclusion

The CWMI is an earnest initiative of NITI Aayog and a pinpointer for the quantum of water resources and its management system among different states to ensure sustainability, comparability, and cooperative federalism in India. This paper presents a comparative study of 17 non-Himalayan states in India. This inter-state comparison of the performance of various indicators would help state administrators to take a more holistic view of water in their policymaking. From the analysis, it is clear that, overall, states are improving in their performance on various themes and indicators during the period, but inter-state disparity exists. Gujarat retained its top rank position in three

consecutive years in theme index. In the selected 9 indicators also Gujarat finds a place among the best performers. States like Andhra Pradesh Madhya Pradesh, Haryana, Tamil Nadu, Goa etc. are also performing well in all indicators whereas Jharkhand, Odisha, Uttar Pradesh, Bihar, Kerala etc. are lagging behind. It is also interesting to note that water scarce states like Gujarat, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra etc. are extremely well in managing water resource whereas water rich states like Kerala, Bihar, Chhattisgarh are poor managers. Poor management of water resources by major agriculture producing states like Uttar Pradesh, Maharashtra etc. is alarming. Therefore, States should begin using a water lens while developing agricultural policies and incentives. Industrial water quotas, Tradable Pollution permits, and water availability-linked licenses can help to optimize water usage in scarce regions and minimize the water supply deficit. The proper pricing of water is also considered an alternative strategy. In addition, it is essential to create awareness among people about the economic and scarcity value of water and the need to reduce the massive misuse and overuse of water resources.

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EXAMINING DIET PATTERNS, FOOD DIVERSITY, AND CALORIC INTAKE IN HIMACHAL PRADESH: A STUDY OF URBAN-RURAL CONVERGENCE

R. Santhosh

Abstract

In the post-liberalization era and in the Amrit Kaal, India witnessed notable advancements in per capita income and Monthly Per Capita Consumption Expenditure (MPCE) on food. This study examined the extent of transformations observed in dietary patterns, food diversity, and calorie intake among rural and urban populations of Himachal Pradesh (HP). An examination of National Sample Survey (NSS) data spanning the years 1993-94 and 2011-12 has unveiled a skewed expenditure pattern, primarily favoring cereals and milk products. Nevertheless, there was a substantial decline in the concentration of expenditure on cereals across various income strata in both rural and urban HP during the study period, with a more pronounced decline observed among rural residents. Regarding Food Diversity (FD), rural HP consistently lagged behind their urban counterparts in both the periods. However, rural HP exhibited significant

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improvements in FD during the study period driven by a substantial reduction in cereal expenditure and an increase in spending on other food categories. Both rural and urban populations showed impressive growth in calorie intake over the study period. Notably, the low-income group experienced a substantial growth in calorie intake, underscoring the importance of addressing nutritional needs in this segment. Overall, this study sheds light on the evolving dietary patterns and nutritional trends in Himachal Pradesh in the wake of economic liberalization, highlighting the need for targeted interventions to ensure adequate nutrition, particularly among vulnerable populations.

Keywords. Diet pattern, Food diversity, calorie intake, food consumption

Introduction

Food represents an elemental human necessity, serving as the cornerstone of physical well-being, cognitive development, and overall health. A nutritious and well-rounded diet is not merely a fundamental human entitlement but also a pivotal determinant of an individual's overall quality of life. Remarkably, it occupies the foremost position in the expenditure of families regardless of their income strata. Nevertheless, disparities have emerged both spatially and interpersonally in terms of food intake and expenditure, as has been documented by Safia et al. (2010) and Morrison et al. (2011). Many factors influence and shape the dietary patterns of societies. Among these factors, shifts in income, urbanization, and consequent lifestyle changes have gained recognition as pivotal drivers of dietary transformations. A global analysis of dietary patterns revealed that as income levels rise, individuals tend to optimize their nutrient intake by allocating more resources to readily available staple foods. Subsequently, as incomes continue to increase and access to a wider array of food items expands, people tend to diversify their diets (Radhakrishna and Ravi 1992).

A comprehensive review of the Consumer Expenditure Survey data from the National Sample Survey Organization (NSS) spanning–1993-94 to 2011-2012 reveals conspicuous disparities in food consumption patterns, dietary diversity, and caloric intake profiles across various states in India. Internationally endorsed dietary guidelines underscore the importance of consuming diverse food items to promote a healthy diet. Empirical evidence has further substantiated the positive health outcomes associated with diversified diets (Rashid et al., 2006). Research on dietary diversity has also demonstrated that diet quality improves as the diversity of the food groups consumed increases (Rashid et al., 2006). It is a fact that diet diversification is indispensable, as cereals and starchy foods provide the bulk of our energy, while meat, fish, and pulses enrich our diets with essential proteins crucial for both physical and cognitive health. Fruits and vegetables play a vital role in supplying the essential vitamins necessary for bodily functions. Consequently, dietary diversification contributes to a balanced diet, which is paramount for overall well-being. In line with this perspective, Kennedy et al. (2009) argue that a sufficiently diverse diet may serve as an indicator of nutrient adequacy. Therefore, dietary diversity can be viewed as a proxy for food security, indicating the availability of a nutritionally rich and balanced diet.

In the post-liberalization era and the *Amrit Kaal*, there has been notable and substantial growth in both absolute and real terms concerning Monthly Per Capita Consumption Expenditure (MPCE) on both food and non-food items across various income strata in nearly all states of the Union of India (Baiju, 2002, Santhosh,2013). Himachal Pradesh, a state in northern India renowned for its scenic beauty and mountainous terrain, exhibits distinct patterns of food expenditure based on data from the NSS. Analyzing expenditure trends in this region provides valuable insights into the economic and dietary dynamics of Himachal

Pradesh(HP). The NSS data pertaining to Himachal Pradesh reveal a noteworthy distribution of food expenditure across various income groups and demographics. As a predominantly agrarian state with a substantial rural population, HP's food expenditure patterns are often influenced by agricultural cycles and seasonal income variations. Rural areas in HP typically allocate a significant portion of their income to food, reflecting the importance of agriculture and subsistence farming in these regions. Expenditure on staples, such as cereals, pulses, and vegetables, remains a primary focus for rural households. These communities often rely on locally grown produce and traditional dietary staples, which can be influenced by geographical isolation and limited access to urban markets. In the urban areas of Himachal Pradesh, there is a greater diversity in food expenditure patterns. Urbanization has led to increased exposure to a wide range of food options, including processed and convenient foods. As income levels rise in urban settings, there tends to be a shift toward more diversified diets with increased spending on fruits, dairy products, meat, and other non-staple items. In light of this context, this study investigates whether there have been any advancements in Food Diversity (FD), calorie intake, and alterations in dietary patterns among distinct income strata within the rural and urban areas of HP during the post-liberalization era and *Amrit Kaal*.

Data source and methodology

The study relies exclusively on secondary data sources, with the primary data originating from the Consumer Expenditure Survey (CES) reports provided by the NSSO for two quinquennial rounds, specifically the 50th round (1993-94) and 68th round (2011-12). To conduct an exhaustive analysis and effectively illustrate the disparities and commonalities in the levels and patterns of food consumption among various income strata, this study employs a technique known as fractile group analysis, as indicated in the NSS

data. This method categorizes the population into segments based on the income distribution. The lowest percentage of the population, referred to as F1, represents the bottom fractile, whereas the top five percent of the population, denoted as F12, constitutes the top fractile. Collectively, the bottom four fractiles are referred to as the bottom group, encompassing the lowest 30 per cent of the population. The subsequent four fractiles are termed the Middle Group, which comprises the middle 40 per cent of the population. Finally, the top four fractiles are designated as the Top Group, encompassing the top 30 per cent of the population. For ease of reference and simplicity, these distinct groups are loosely characterized as the “poor,” “middle,” and “rich,” respectively. Such categorization facilitates a nuanced analysis of food consumption patterns and expenditure across different income strata, offering valuable insights into economic disparities and consumption trends within HP during specified time frames.

In this study, Food Diversity (FD) is defined as the average number of different food items consumed by a household within a one-month reference period out of the total number of food items available. To measure FD, the study employed the Simpson Diversity Index (SDI), calculated using the following formula: $\text{Simpson Diversity Index (SDI)} = 1 - \sum w_i^2$, where $\sum w_i^2$ is the sum of squares of the expenditure share or calorie share of food group ‘i.’ The Simpson Diversity Index (SDI) used in this study provided values within the range of zero to one. A higher SDI value signifies a greater level of Food Diversity (FD), indicating that a household consumes a wider range of food items. Conversely, a lower SDI value indicates a lower FD, suggesting that the household’s diet is less diverse and consists of a narrower selection of food items (Nguyen & Winters, 2011). In this study, expenditures on food items were systematically classified into 12 distinct and comprehensive groups. This categorization allows for a detailed and nuanced analysis of the spending patterns

across various food categories. By breaking down food expenditure into these broad groups, this study explores how households allocate their resources among different types of food items, thereby providing valuable insights into consumption preferences and trends. Furthermore, to enable a thorough comparative evaluation, this study incorporates the concept of per capita per consumer intake of calories (PCUI). The PCUI is a crucial metric that measures average calorie intake per person. It provides a vital dimension to the analysis by assessing not only the diversity of food consumption, but also the nutritional aspects of diets. By combining these two approaches—categorizing food expenditure into 12 groups and considering PCUI—the study provides a comprehensive understanding of dietary patterns and nutritional outcomes among different income strata and regions. This holistic approach enhances the study's capacity to explore the multifaceted nature of food consumption and its implications for households' well-being within the study period. Top of Form

This study spans the period from 1993-94 to 2011-12, enabling a comprehensive examination of changes in Food Diversity, expenditure patterns, and calorie consumption over this time frame.

Results and discussion

Decomposition analysis of the NSS data spanning from 1993-94 to 2011-12 unveils substantial changes in the dietary patterns of different urban and rural income strata within the HP. These changes are evident in the shifting allocation of expenditure across various food items, as illustrated in Tables 1 and 2. Remarkably, there is a considerable disparity in the percentage allocation of expenditure on different food items across various income strata. In urban HP, during the 1993-94 period, the primary expenditure item for the poor and middle-income groups was cereals, while for the rich, it was milk and milk products.

Notably, in 1993-94, the second-highest expenditure item for the poor was milk and its products, whereas for the rich, it was beverages and processed foods. Intriguingly, cereals ranked third in terms of expenditures for the rich. For the bottom-income group, the third largest expenditure was on pulses. It is worth noting that, as income increased, expenditures on processed food and beverages escalated at an increasing rate across all income classes. During the 1993-94 period in urban HP, the bottom income group allocated nearly 50 per cent of their expenditure to cereals, aligning with Engel's law, which suggests that spending roughly 50 per cent or more on cereals indicates a poor-quality diet. This demonstrates a significant skew towards cereals in the dietary patterns of the urban poor in HP during that period. However, expenditures on items such as eggs, fish, and meat were insignificant, reflecting a preference for vegetarianism, which differed from the national average and the patterns observed in some southern and northeastern states of India. In the 2011-12 period, urban HP witnessed a noteworthy shift in dietary patterns. There was a considerable decrease in expenditure allocated to cereals across all income strata. For instance, the bottom 5 per cent of the population (F1) allocated nearly 50 per cent of its expenditure to cereals in 1993-94, which fell to 26.98 per cent in 2011-12. Even in the top-income group, expenditures on cereals decreased significantly. In 2011-12, for the Bottom Group, milk and its products became the primary expenditure item, with cereals slipping into the second position. This shift indicated an improvement in the dietary quality of the urban poor. The third most significant item of expenditure for the poor was beverages and processed food. Among the rich, beverages and processed food ranked first in expenditure, followed by milk and its products, with cereals in third position. Expenditure for eggs, fish, and meat increased significantly across all income strata, particularly among the middle-income group. Conversely, pulse expenditure decreased

across all income groups. An interesting trend is the increase in expenditures on vegetables, fresh fruits, etc., across all income classes. Additionally, there was an overall increase in the percentage allocation of expenditure on milk, and the consumption of edible oil increased among the poor and middle-income groups, but decreased among the rich. Another noteworthy observation is the substantial increase in expenditures on beverages and refreshments among the poor, which represents a significant change in consumption patterns. It signals the next generation shift in consumption patterns in favor of processed food, packaged, and ready-to-eat food among urban people with HP. In general, Urban HP shows a significant shift in diet patterns, which cues an improvement in diet quality.

In rural HP during the 1993-94 period, expenditure patterns revealed distinctive dietary preferences among the different income strata. For the poor- and middle-income groups, cereals emerged as the primary item of expenditure, followed by milk and its products in the second position, and edible oil in the third position (Table 2). Notably, the poor income group allocated nearly 50 per cent of their expenditure to cereals, indicating a pronounced skew towards cereals in their dietary choices, which reflects a relatively poorer quality diet. Conversely, for the Rich, milk and its products constituted the highest expenditure, followed by cereals, beverages, and processed foods in the second and third positions.

In 2011-12, there was a significant shift in expenditure patterns among rural households in HP. The percentage allocation of expenditures on cereals saw a considerable decrease for all income groups. For the bottom group, it decreased from approximately 50 per cent to roughly 30 per cent. In the case of the top group, it decreased from 20 per cent to approximately 15 per cent, and for the entire class, it dropped from 31 per cent to 19 per cent. This reduction

signalled a convergence in the expenditure on cereals in percentage terms among the rich and poor, although the poor still allocated nearly double the proportion of their expenditure to cereals compared to the Rich. The poor income group retained cereals as the primary item of family budget allocation for food, while expenditure on milk and its products was rapidly approaching surpassing cereals. Processed food emerged as the third item of expenditure among the poor, reflecting a changing dietary pattern among rural HP. For the top-income group, milk and its products took the forefront in food expenditure, followed by cereals, with processed foods being the third item of expenditure. Pulse expenditure increased among the poor and middle-income groups, while it decreased among the rich. A slight shift was also observed in expenditures on eggs, fish, and meat, particularly among the rich, although it remained consistent with the dietary pattern observed in HP and contrasted with the national average.

A slight improvement in fruit expenditure was observed. As expenditures on cereals fell, there was a corresponding increase in expenditures on all other food items, including pulses, milk, vegetables, and fruits. Interestingly, the consumption of edible oils decreased across all income groups, suggesting a relatively healthier and more diverse dietary pattern in this society. The notable growth in expenditure on grams and pulses among the poor validates the trend that, as income increases beyond a certain threshold for cereals, people tend to allocate more of their expenditure to pulses and then to other food items (Santhosh, 2013). However, the concentration of expenditure on processed foods and beverages is a cause for concern, signalling a shift towards more modernized consumption patterns, likely influenced by urbanization in HP. This analysis suggests that as income rises, people tend to diversify their dietary patterns away from cereals towards a wider array of food items.

Table 1: Percentage allocation of expenditure (0.00%) on each broad group food item 1993-94 to 2011-12 HP (Urban)

Food items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	ALL
Cereals	26.98 (50.97)	21.49 (37.99)	22.44 (50.87)	20.19 (38.11)	19.32 (29.31)	17.83 (27.94)	21.53 (26.91)	18.23 (23.38)	17.54 (21.97)	14.46 (17.73)	9.78 (14.55)	14.51 (10.12)	17.50 (20.69)
Gram	1.51 (2.33)	1.02 (1.53)	0.76 (0.50)	1.12 (0.27)	0.91 (0.51)	0.57 (0.93)	0.93 (0.83)	0.73 (0.97)	0.54 (0.79)	0.94 (0.68)	0.46 (0.66)	1.32 (0.35)	0.85 (0.66)
Cereal sub-stitutes	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	0.01 (0.00)
Pulses	9.02 (13.11)	7.84 (9.09)	7.31 (9.60)	6.37 (7.10)	6.77 (7.62)	6.80 (7.67)	8.30 (7.20)	5.89 (7.25)	6.48 (6.42)	5.88 (6.01)	4.41 (4.89)	5.88 (3.43)	6.43 (6.01)
Milk & products	20.69 (8.74)	24.67 (20.39)	29.59 (13.04)	30.01 (18.91)	29.27 (26.62)	30.74 (21.55)	25.26 (22.75)	30.23 (23.97)	29.54 (27.78)	27.16 (27.50)	17.61 (23.47)	22.14 (26.77)	26.91 (25.23)
Sugar& products	4.14 (4.81)	2.96 (5.41)	4.16 (5.06)	3.72 (4.93)	3.53 (5.09)	3.31 (5.19)	2.90 (5.62)	3.04 (5.06)	3.42 (4.63)	2.72 (4.18)	1.68 (4.04)	2.83 (2.64)	3.09 (4.30)
Salt	0.27 (0.44)	0.32 (0.50)	0.22 (0.37)	0.24 (0.36)	0.21 (0.32)	0.18 (0.37)	0.18 (0.33)	0.19 (0.33)	0.20 (0.27)	0.17 (0.26)	0.12 (0.23)	0.17 (0.15)	0.19 (0.26)

Edible oil	7.49 (5.24)	6.18 (6.88)	7.21 (6.84)	5.40 (7.18)	5.77 (8.98)	5.28 (9.09)	4.99 (8.55)	5.69 (8.09)	5.80 (7.47)	4.51 (7.65)	2.90 (7.00)	5.79 (4.88)	5.33 (7.24)
Egg fish & meat	2.35 (0.00)	2.82 (4.76)	2.42 (0.16)	5.13 (0.84)	5.39 (0.68)	5.21 (1.08)	4.66 (2.56)	4.54 (2.30)	2.87 (2.30)	2.07 (1.90)	3.62 (3.37)	3.08 (2.78)	3.75 (2.17)
Vegetable	10.03 (8.30)	9.08 (8.24)	9.30 (6.44)	9.13 (9.34)	9.32 (8.77)	7.91 (9.51)	9.20 (10.12)	8.69 (10.98)	10.20 (9.01)	9.09 (9.03)	5.81 (8.80)	7.88 (6.99)	3.75 (8.83)
Fruits(fresh)	1.98 (0.00)	2.11 (0.00)	2.88 (0.07)	4.06 (1.22)	3.58 (1.99)	3.68 (3.47)	3.87 (3.05)	4.66 (4.02)	5.23 (3.94)	5.22 (4.86)	5.09 (4.75)	5.09 (5.30)	4.29 (4.06)
Fruits(dry)	0.34 (0.00)	0.75 (0.00)	0.97 (0.00)	1.21 (0.53)	1.34 (0.65)	1.32 (0.71)	1.57 (0.35)	1.58 (0.82)	1.83 (0.63)	2.60 (0.42)	4.36 (2.10)	4.36 (1.21)	1.99 (0.82)
Spices	4.46 (3.50)	4.61 (2.62)	3.47 (3.69)	3.52 (4.87)	3.78 (3.75)	3.72 (4.06)	4.42 (3.08)	3.05 (3.74)	3.33 (3.10)	3.10 (2.94)	2.72 (3.69)	3.64 (2.16)	3.47 (3.13)
Beverages & processed foods	10.73 (2.93)	16.15 (2.57)	9.29 (3.35)	9.81 (6.34)	10.80 (5.71)	13.45 (8.44)	12.19 (8.66)	13.50 (9.11)	13.01 (11.69)	22.09 (16.82)	44.40 (22.44)	23.31 (33.21)	17.45 (16.59)
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100

Source: Estimated from the NSS CES for the 50th and 68th rounds of reports. Figures in the parenthesis are 1993-94 figures

Table 1: Percentage expenditure on each food item 1993-4 2011-12 HP rural

Food items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	ALL
Cereals	29.88 (53.36)	30.42 (49.35)	23.63 (46.26)	21.64 (45.78)	21.95 (42.81)	21.75 (39.76)	20.82 (36.26)	18.98 (34.43)	17.30 (31.94)	15.94 (27.53)	16.86 (24.84)	15.41 (20.20)	19.72 (31.10)
Gram	0.80 (0.13)	0.99 (0.00)	1.07 (0.29)	0.85 (0.16)	0.80 (0.46)	0.82 (0.58)	0.95 (0.42)	0.74 (0.72)	0.72 (0.64)	0.71 (0.83)	0.90 (0.76)	0.90 (0.84)	0.82 (0.67)
Cereal sub-stitutes	(0.00) 0.00	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Pulses	8.48 (7.63)	7.52 (7.28)	7.08 (7.63)	7.27 (8.33)	.88 (8.37)	7.09 (8.45)	6.42 (8.00)	6.78 (8.37)	6.32 (7.91)	5.95 (7.30)	.17 (7.52)	7.44 (6.92)	6.76 (7.71)
Milk & products	20.52 (8.12)	18.36 (15.84)	21.49 (13.42)	28.73 (14.11)	28.98 (15.74)	26.78 (17.41)	30.32 (22.02)	30.15 (22.19)	34.50 (23.49)	32.88 (27.46)	32.38 (28.79)	29.19 (29.88)	29.41 (24.11)
Sugar	3.90 (6.81)	(4.11) (5.01)	3.92 (4.94)	.98 (5.76)	3.70 (5.92)	3.88 (5.59)	3.91 (5.32)	3.75 (5.68)	3.56 (5.33)	3.37 (5.68)	3.75 (5.66)	4.28 (5.45)	3.79 (5.55)
Salt	0.29 (0.41)	0.25 (0.40)	0.23 (0.40)	0.18 (0.10)	0.17 (0.39)	0.20 (0.38)	0.18 (0.35)	0.18 (0.36)	0.17 (0.32)	0.16 (0.30)	0.15 (0.28)	0.21 (0.26)	0.19 (0.32)

Edible oil	7.44 (7.26)	7.56 (7.68)	7.59 (8.92)	7.06 (8.74)	6.19 (7.82)	5.98 (8.44)	5.53 (8.50)	5.95 (8.73)	5.51 (8.07)	5.21 (7.65)	5.21 (7.67)	6.38 (7.46)	6.06 (8.00)
Egg fish & meat	1.24 (1.50)	2.06 (1.84)	3.77 (2.21)	4.13 (1.43)	4.56 (1.55)	5.14 (1.81)	6.17 (1.64)	4.99 (1.26)	4.59 (1.92)	4.61 (2.12)	4.05 (2.72)	3.91 (2.28)	4.48 (1.98)
Vegetable	7.10 (7.05)	7.23 (6.12)	7.55 (7.32)	7.89 (7.10)	7.27 (7.29)	7.65 (7.22)	7.00 (7.26)	7.64 (7.71)	7.09 (7.51)	7.59 (7.59)	8.30 (7.43)	8.36 (8.33)	7.57 (7.60)
Fruits(fresh)	0.75 (0.16)	1.78 (0.42)	1.69 (0.77)	2.25 (0.28)	2.36 (0.85)	2.58 (1.14)	2.45 (1.04)	3.20 (1.15)	3.14 (1.61)	3.33 (2.20)	4.52 (2.40)	3.76 (3.90)	2.87 (1.95)
Fruits(dry)	0.25 (0.87)	0.64 (0.00)	0.42 (0.05)	0.54 (0.14)	0.62 (0.24)	0.59 (0.21)	0.84 (0.20)	1.01 (0.16)	0.83 (0.40)	1.57 (0.39)	1.25 (0.49)	2.58 (0.65)	1.04 (0.37)
Spices	4.20 (3.78)	4.08 (2.99)	3.99 (3.59)	3.64 (4.01)	3.65 (3.98)	4.17 (3.64)	3.45 (3.62)	3.84 (3.80)	3.58 (3.67)	3.67 (3.48)	3.56 (3.53)	3.86 (3.48)	3.75 (3.62)
Beverages & processed food	15.14 (2.93)	15.00 (3.07)	17.58 (4.05)	11.80 (3.78)	12.86 (4.58)	13.37 (5.36)	11.96 (5.37)	12.78 (5.42)	12.68 (7.21)	15.01 (7.46)	13.06 (7.89)	13.73 (10.35)	13.53 (7.02)
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Estimated from the NSS CES for the 50th and 68th rounds of reports. Figures in the parenthesis are 1993-94 data

Trend in Food diversity in HP in comparison with All India

Food Diversity (FD) serves as a vital metric for evaluating dietary quality, offering insights into the variety of food items incorporated into individual or household diets. A diverse diet is pivotal for maintaining optimal physical and cognitive well-being in human populations. This study analyzes NSS data spanning the periods 1993-94 and 2011-12, encompassing both urban and rural regions of HP, while drawing comparisons with the national average. The findings reveal significant trends: In 1993-94, rural HP exhibited lower FD than its urban counterpart, with FD levels increasing alongside income. Conversely, during 2011-12, urban HP saw substantial FD improvements among the lower- and middle-income groups, while the rich segment experienced a slight decline. In rural areas, FD has significantly improved across all income strata, with the most notable enhancement observed among the poor- and middle-income groups, surpassing the national FD average. This progress in FD primarily stems from a shift in expenditure patterns, notably reduced spending on cereals, and increased allocation to various other food categories. These findings underscore the evolving dietary behaviors in HP and highlight the fundamental role of dietary diversity in enhancing nutritional outcomes and overall well-being.

The analysis of NSS data revealed a consistent and noteworthy upward trajectory in FD within both urban and rural regions of HP over the study period, as illustrated in Figures 1-4. Additionally, a compelling observation is the evident trend of convergence in FD between rural and urban HP, as shown in Figure 3. It is on par with the national trend (Figure 4). This convergence implies that the dietary patterns in these regions became more similar during the analytical period. One contributing factor to the observed improvement in FD is a reduction in the concentration of expenditure on

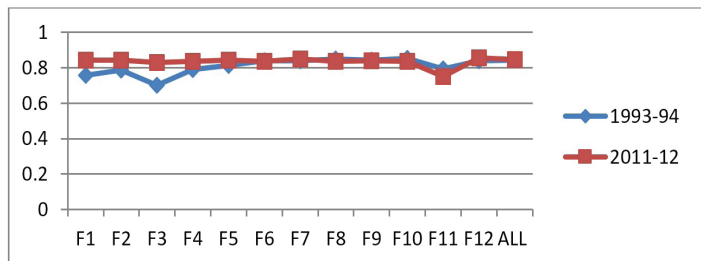
**Table: 3. Food Diversity HP and All India
1993-94- 2011-12**

50th Round (1993-94)					68th Round (2011-12)			
SIMPSON DIVERSITY INDEX(SDI)								
Frac- tile	HP(U)	HP(R)	All India (U)	All India (R)	HP (U)	HP (R)	All India (U)	All India (R)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
F1	0.7570	0.6854	0.7593	0.6664	0.8441	0.8243	0.8373	0.8095
F2	0.7875	0.7117	0.7783	0.6791	0.8442	0.8304	0.8504	0.8247
F3	0.7011	0.7429	0.8015	0.7046	0.8298	0.8456	0.8600	0.8315
F4	0.7909	0.7443	0.8218	0.7305	0.8371	0.8349	0.8636	0.8430
F5	0.8139	0.7659	0.8345	0.7457	0.8416	0.8319	0.8654	0.8491
F6	0.8394	0.7842	0.8440	0.7701	0.8352	0.8419	0.8669	0.8540
F7	0.8398	0.7937	0.8507	0.7859	0.8503	0.8310	0.8643	0.8582
F8	0.84958	0.8036	0.8560	0.7999	0.8365	0.8361	0.8654	0.8602
F9	0.8416	0.8144	0.8605	0.8139	0.8408	0.8170	0.8642	0.8629
F10	0.8515	0.8208	0.8626	0.8319	0.8372	0.8258	0.8581	0.8609
F11	0.7944	0.8262	0.8595	0.8388	0.7515	0.8297	0.8510	0.8604
F12	0.8398	0.8355	0.8570	0.8537	0.8548	0.8486	0.7928	0.8665
ALL	0.8443	0.8169	0.8563	0.8014	0.8460	0.8364	0.8634	0.8601

Source: Estimated from NSS data for 50th and 68th round

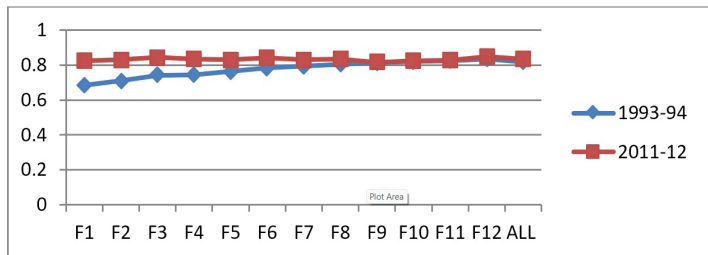
cereals coupled with a corresponding increase in spending on various other food categories. It is noteworthy that urban HP consistently reported higher FD levels than their rural counterparts. These findings provide valuable insights into the evolving dietary behaviors and nutritional choices in HP, underscoring the importance of dietary diversity in shaping dietary quality and overall nutritional well-being across different geographical and socioeconomic contexts.

Figure: 1. Trend in Food diversity by Simpson Index for HP (Urban)



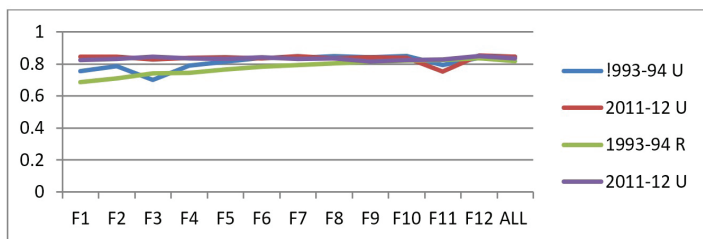
Source: Estimated from NSS data for 50th and 68th round

Figure: 2. Trend in Food diversity by Simpson Index for HP (Rural)



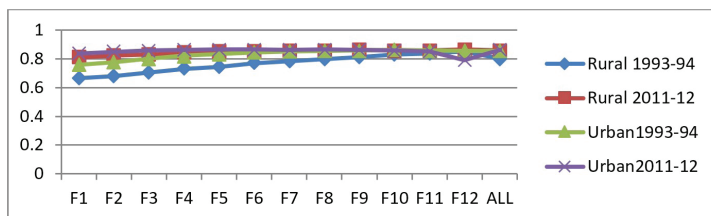
Source: Estimated from NSS data for 50th and 68th round

Figure : 3 Trend in the convergence of rural and urban in FD in HP



Source: Prepared from NSS data for 50th and 68th round reports

Figure : 4 Trend in convergence of rural and urban in FD (All India)



Source: Prepared from NSS data for 50th and 68th round reports

Trend in the per capita intake of calorie

Real increases in food expenditure and alterations in the allocation of spending across diverse food categories have discernible repercussions on calorie intake across various income strata. During the study period, both rural and urban HP experienced not only an absolute but also a real increase in food expenditure. This section examines whether there were noteworthy changes in calorie intake among income strata in urban and rural HP during the specified study duration. Notably, with the exception of specific fractile groups, urban HP witnessed a substantial surge in calorie intake over the study period, as detailed in Table 4.

This growth in calorie intake was particularly pronounced among the top-income groups. In rural HP, both the poor- and middle-income groups showed remarkable improvements in their calorie intake, which was notably low during the 1993-94 period. In the comparative analysis, it was observed that the caloric consumption patterns in the urban areas of Himachal Pradesh (HP) surpassed the national average during two distinct study periods. In contrast, during the 1993-94 timeframe, the rural poor population of HP demonstrated caloric intake exceeding the national average, while the middle- and high-income strata in rural HP exhibited caloric consumption levels trailing behind the national

Table 4: per capita per Consumer Unit per Diem intake of Calorie by Fractiles (Urban & Rural)

MPCE class as Frac-tile	NSS Rounds												Percentage growth (0.00per-cent) in the intake of calorie (HP)
	50th Round (1993-94)						68th Round (2011-12)						
	Intake of calorie						Intake of calorie						
	In kcal						In kcal						
	HP (U)	HP (R)	All India (U)	All India (R)	HP (U)	HP (R)	All India (U)	All India (R)	HP (U)	HP (R)	All India (U)	All India (R)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)			
F1	1793	1477	1327	1327	1822	1949	1588	1624	1.59	24.22			
F2	1782	1613	1560	1583	1827	2139	1679	1724	2.46	24.59			
F3	1987	1635	1697	1721	1809	2195	1760	1820	(-)9.84	25.51			
F4	1895	1787	1787	1850	2289	2335	1855	1911	17.21	23.47			
F5	2156	1899	1890	1968	2271	2411	1917	1977	5.06	21.24			
F6	2054	1960	1987	2048	2377	2357	1977	2038	13.59	16.84			
F7	2207	2134	2070	2154	2345	2485	2049	2111	5.88	14.12			
F8	2223	2234	2186	2271	2730	2547	2127	2184	18.57	12.29			
F9	2576	2423	2299	2410	2760	2643	2244	2267	6.67	8.32			
F10	2472	2577	2474	2592	2935	2822	2378	2348	15.78	8.68			
F11	2698	2817	2689	2804	3295	2748	2518	2531	18.12	(-)2.51			
F12	3408	3242	3011	3262	4103	3612	2757	2793	16.94	10.24			
All	2416	2324	2071	2153	2512	2502	2058	2099	1.59	7.11			

Source: NSS reports for 50th and 68th round

average. However, in the subsequent period of 2011-12, it is noteworthy that all income strata within the rural Himachal Pradesh exhibit caloric consumption rates surpassing the national average. However, it is essential to acknowledge the existence of significant disparities in calorie intake, both between and within income strata, in both rural and urban HP. A notable trend is the unexpected absence of a decline in calorie intake, despite a shift away from cereals among both the rural and urban income strata in HP. This absence of a decline can be attributed to a substantial increase in food expenditure. Equally intriguing is the observed trend of convergence in calorie intake among different income strata in rural and urban HP. There is a mismatch between the growth in

Monthly Per Capita Consumption Expenditure (MPCE) on food and growth in calorie intake among the rich, primarily due to their dietary diversification, favoring foods other than cereals. For the low-income group, visible growth in calorie intake is attributed to their ongoing transition as they have not yet reached a saturation level in cereal intake. However, this shift away from cereals may have influenced overall calorie intake. It is essential to note that dietary diversification promotes a balanced diet and reduction in excessive calorie intake, which can be considered a positive health outcome. Furthermore, a rich income group likely leads to a sedentary lifestyle, and an average intake of 4000 kcal per day may contribute to the emergence of lifestyle-related diseases. Throughout the analysis period, the urban poor income group in the HP consistently surpassed their rural counterparts in terms of caloric intake.

Conclusion

Although food is a necessity for all, disparities in expenditure on food, FD, and calorie intake persist among different segments of the population. An examination of NSS data spanning the years 1993-94 to 2011-12 unveils

a notable concentration of food expenditure on cereals in both urban and rural HP in 1993-94, which shifted towards milk and its products by 2011-12. As spending on cereals decreased, allocation to food groups, such as milk, its products, and beverages, increased. Notably, expenditures on eggs, fish, and meat remained considerably lower in HP than in other states in South and Northeast India. Regarding FD, rural HP consistently lagged behind urban areas in both periods because of the predominant expenditure on cereals. However, rural HP made significant strides in FD during the study period, primarily driven by a substantial decrease in cereal expenditure and increase in spending on other food categories. Nevertheless, urban HP maintained a lead over rural areas in terms of FD. The overarching trend suggests a shift in dietary patterns, with a decline in the proportion of expenditure on cereals and an increase in high-value foods such as milk and its products, grams, and vegetables. Notably, expenditure on beverages, including processed and ready-to-eat foods, as well as dining out, increased across all income segments, indicating dietary diversification during the study period. In the context of FD, it was observed that it initially increases with income, stabilizes, and eventually exhibits a declining trend. Notably, the FD increased for all income groups during the post-liberalization period. It is also noteworthy that, while FD initially increases with income, it stabilizes and eventually shows a declining trend, indicating shifting dietary preferences with rising income levels. Of particular significance was the marked growth in calorie intake among the low-income group during the study period. Ensuring sufficient calorie intake for the poor is paramount, particularly considering their probable involvement in physical and manual labor. In Amrit Kaal, it falls upon the State and Union to guarantee an ample supply of calories for the less privileged and promote dietary diversity among them. Given that these individuals constitute the workforce in manual labor and agriculture, serving as the backbone of

the nation in the present and future, India's true development hinges on eliminating poverty. A nation can only be deemed genuinely developed when it not only eradicates poverty, but also achieves a surplus in food production, which can then be distributed to the underprivileged. Strengthening the public distribution system and increasing awareness among both the poor- and middle-income groups regarding the advantages of dietary variety, while ensuring the fulfilment of basic calorie needs from cereals, represents a viable solution. An authentic Amrit Kaal signifies an era devoid of poverty and characterized by an equitable distribution of fundamental life necessities, notably food.

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ENVISIONING INDIA @ 2047: THE PIVOTAL “AMRIT KAAL” JOURNEY & “SELF RELIANT INDIA CAMPAIGN”

Arun Kumar¹ & Ranjit Singh²

Abstract

India's economic growth has been remarkable in the last decade, escalating from the 10th to the 5th largest economy. The country is now in the “Amrit Kaal” period, a 25-year journey towards becoming a developed nation by 2047. This paper discusses the key factors driving India's economic growth, including the “Self Reliant India Campaign,” the first Amrit Kaal Budget 2023-24, and various government initiatives. The service sector, demographic dividend, and digital economy are identified as major contributors to the country's economic progress. Projections from multinational professional services firms, such as Ernst & Young (EY) and PricewaterhouseCoopers (PwC), indicate that India is on track to become a developed economy by 2047, with a potential GDP ranging from US\$3 trillion to US\$40 trillion.

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The real estate sector is also expected to play a significant role in India's growth, with an estimated demand for 230 million housing units by 2047. Despite the ambitious nature of these goals, India possesses the potential to become a world leader by its centenary of independence, driven by its favorable demographic structure, increasing foreign direct investment, digital transformation, and rising urbanization.

Keywords: Amrit Kaal, Self-Reliant India Campaign, Economic Growth, Service Sector, Demographic Dividend, Digital Economy, Real Estate Sector.

Introduction

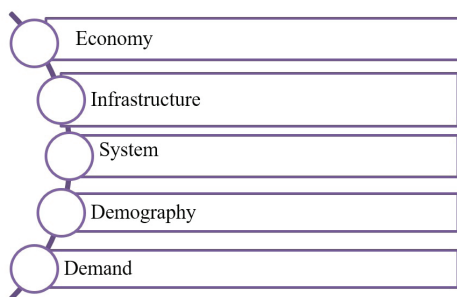
The country's progress in the last decade has been phenomenal. India has escalated to 5th largest economy this year from the 10th largest economy a decade ago and is on the beam to be 3rd largest in this '*Amrit Kaal*' period. **Amrit Kaal** originated from Vedic astrology and is regarded as a fortunate era to commence any new beginning. For India, **the Amrit Kaal** has a time span of 25 years, starting from the 75th year of independence.

The term **Amrit Kaal** became popular in the Indian context only after the 75th Independence Day celebration. On this prestigious occasion, our prime minister presented a detailed development plan for the next 25 years. PM Modi said that the ultimate aim of **Amrit Kaal** is to enhance the standard of living of Indian citizens, eliminate the development disparities among the rural-urban areas and opt for technological advancements.

Atma Nirbhar Bharat Abhiyan is the dream project of New India featured by our prime minister, Shri Narendra Modi, on 12th May 2020. This proposal was made to create a sense of self-reliance among the nationals. **Atma Nirbhar Bharat Abhiyan** was built upon the following five pedestals: economy, infrastructure, system, vibrant demography and demand.

“Self Reliant Campaign’ does not mean that India will isolate itself from the other world; it means that India should no longer depend on others for its success. The Self-reliant India campaign indicates that the country should not depend on other countries for employment and livelihood. The Self Reliant India campaign aims to make the country and population self-reliant in every way.

Figure-1 Aatmanirbhar Bharath Abhiyan



Source: <https://taxguru.in/finance/atmanirbhar-bharat-abhiyaan-call-nation-self-reliance.html>

Figure 1 shows the five pillars on which the self-reliant Indian campaign will stand. A brief introduction of 5 pillars is as follows:-

First Pillar: The campaign focuses on the economy and aims to bring a ‘quantum jump’ and not just ‘incremental change’ in the economy.

Second Pillar: The country’s infrastructure should have global equivalence, representing modern India.

Third Pillar: Our system should be fully technology based.

Fourth Pillar – India’s growing population has the most important positive aspect; that is, the more extensive section is youth, which would be the source of energy and helpful in achieving self-reliance.

Fifth Pillar: The chain of demand and supply is the economy's strength and should be strengthened by proper supply to demand. The demand and supply chain must be utilized to its fullest potential to supplement economic growth.

The Atma Nirbhar Bharat Abhiyan package consists of the five tranches or phases:-

First – Business with MSMEs.

Second – underprivileged peasants

Third – Farming

Fourth –Growth via economic progress

Fifth – Government Reforms

An Opening Budget To Amrit Kaal

Amrit kaal was included in the union budget 2023-24 to strengthening inclusive development. The main agenda was to promote overall economic development by focusing on knowledge creation and technology enhancement ³.

Figure – 2 Focus Areas of Amrit Kaal



Source: <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1895313>

Figure 2 clearly shows the vision for this ‘Amrit Kaal’ with a solid and inclusive economy that provides opportunities for citizens, and the main focus is on youth. There will be job creation in the country, and a balanced macro-economic environment will be maintained during ‘Amrit Kaal.’

1. Saptarishi – Guide For Amrit Kaal Phase

While presenting the budget 2023-23, Smt Nirmala Sitharaman presented the seven priorities or the Saptrishi that will guide throughout ‘Amrit Kaal.’

Figure- 3



Source: <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1895313>

Figure 3 shows the seven priorities named Inclusive Development working on the ‘Sabka Sath Sabka Vikas’ policy so that each unit of society benefits equally and minimizes inequality. The government has made several plans to increase investments in infrastructure. The government is working towards a healthier environment to live in and unleash the full potential of the population. The government is investing in education and the development of youth skills and also brings stability to the financial sector.

Factors Fuelling Growth In Economy

1. India’s Service Sector

India’s service sector is among the dominant sectors of the economy, contributing more than 50% to the country’s GDP. This sector attracts a large amount of foreign investment and shares a major portion of exports. The **information technology and business process management (IT-BPM) Industry, E-Commerce, Real Estate, Logistics & Transportation** financing, insurance, real estate, and business services are some of the major contributors to this sector.

The economic survey of 2022-23 shows India's significant growth in service exports, and in 2021, India is among the world's top ten service exporters. Records show a 27.7% increase in service exports in April-December 2022 compared to 20.4% in the previous year. According to the World Investment Report of 2022, India has achieved the seventh position as the largest recipient of FDI among 20 countries. In the financial year 2022, India received US\$ 84.8 billion as its largest FDI in the service sector.⁴

1.1 India's Service Exports

Ernst and Young (EY), in their report entitled 'India@100-Realizing the potential of a US\$26 trillion economy, details the growth of India's services exports in the last 22 years. They elaborate on this in detail, as if the service sector grows at this momentum in the next 25 years, it will be a key factor in economic growth and exports.

1.2. Demographic Dividend in India

The demographic dividend represents the potential economic growth. This potential growth in a country occurs because of a change in the age structure of its population. A country with a higher demographic dividend will experience an increase in its working-age population (15 to 64 years) compared with the working-age population (below 14 years and above 65 years)⁵ (UNFPA).

According to the UNFPA World Population Report 2023, India is the most populated country in the world; among these, 68 % is the working-age population. Such a situation with a higher demographic dividend is a golden opportunity for the country and can be exploited for the sake of development in subsequent years. In 2020, India had the youngest population at all times, with a median age of 28. This is much more severe in a world with an ageing population. All the leading economies of the world are suffering from aging, where in the US, the median age is

45 years; in China, it is 37 years; and the median ages in West Europe and Japan are 45 and 49 years, respectively. The demographic dividend in India is supposed to last for another 37 years from the year 2018 up to 2055.⁶

In 2047, India will have approximately 1.1 billion people only in the working-age group⁷.

India's demographic dividend gives a huge scope of growth opportunities due to the increasing working-age population in the '*Amrit Kaal*' period. India has an excellent opportunity to increase productivity by investing in providing skills to its working population. The Confederation of Indian Industry (CII) report states that India could earn a GDP ranging from US\$3 trillion to US\$40 trillion in 2047 only if the country effectively utilizes its working-age population. The report of the CII, entitled *Harnessing India's Demographic Dividend for Boosting Growth*, further predicts the possibility of increasing the working class from 2020 to 2050 and will trigger economic growth⁸.

3. Digital Economy

The Government of India is taking numerous steps to broaden digital transactions, both for the sake of the financial sector and to increase the standard of living. In recent years, many convenient and easy digital payment modes have been introduced. Some of the popular ones are IMPS, NETC, and BHIM-UPI. Most of the aforementioned payment systems successfully accomplished person-to-person (P2P) and person-to-merchant (P2M) payments. Among the different payment systems, BHIM UPI is the radically opted payment mode with 803.6 crore digital payment transactions in January 2023.⁹

3.1 Digital Economy Projections

While virtually Addressing the IIT Bombay Alumni Association, Finance Minister Nirmala Sitharaman argued that 2030 will mark a spontaneous growth of 800 billion

\$ in our digital economy. She added that India currently occupies more than 6,300 fin techs, and within this, 28% are solely related to investment technology and 27 per cent are reserved only for payments¹⁰.

Future Ready India @100 – Developing To Developed Economy

By the end of the **Amrit Kaal** period, India had celebrated 100 years of independence. The country has not only decided to celebrate this occasion holistically but has also reached the milestone of becoming the world's second-largest economy, surpassing the USA in 2050. In the context of **Amrit Kaal**, i.e. next 25 years, 2022 to 2047, PM Shri Narendra Modi said in 2021, "In forthcoming 25 years, during **Amrit Kaal**, the country is going to fulfil the promises took for '*Atma Nirbhar Bharat*.'"

India is set to become a developed nation by 2047 as the '*Amrit Kaal*' has been named '*Kartavya Kaal*' – The Era of Duty by Sh. Narendra Modi. "India is advancing by prioritising duties," he said.

The RBI bulletin states that India will remain the fifth largest economy in 2023. The report also added that India will achieve a 3.7 trillion US\$ economy in 2023 and maintain its supremacy over the UK. **International Monetary Fund (IMF)** mentions that India will transfer into fourth place in the year 2025 and to third place in 2027 with a 5.4 trillion US\$ economy.¹¹

India aspires to become a developed nation after celebrating 100 years of independence in 2047. What exactly is a developed nation or economy?

The development experience of a country can be measured using per capita income, degree of industrialization, standard of living, and technological enhancement. However, per capita gross domestic product (GDP) is a commonly accepted tool for measuring development. However, there is still

no strict rule or classification for measuring development, and economists themselves are confused with watertight classifications¹².

Many research reports by multinational professional services firms have projected the growth of the Indian Economy in 'Amrit Kaal.' Below discussed are the reports:-

1. Ernst & Young (EY) Projections - India @ 100

(EY) is a British Multinational Professional service partnership. It is one of the largest professional service networks worldwide, along with Deloitte, KPMG, and PwC. It is among the four big four accounting firms..¹³

In their comprehensive report entitled "India @ 100 – Realizing the potential of US\$ 26 trillion economy" about India's future in the upcoming 25 years of Amrit Kaal, they have projected that India's per capita GDP (in US\$) is expected to reach a level of US\$ 13,404 in FY46, which put India in the category of Developed Economies.

The profile of the Indian Economy from 2020 to 2048 is an odyssey from a developing economy to a developed economy. In their report, EY mentioned that India's per capita income will exceed US\$ 13000 by the year 2045, which will convert India into a developed economy.

2. PWC: The World In 2050

Pricewater house Coopers International Limited, also known as (PWC) is one of the largest multinational professional service brands. It is the second-largest professional services network in the world and is also considered one of the big four accounting firms, along with Deloitte, EY and KPMG.¹⁴

PWC report: The World in 2050 was published in February 2017, and is about emerging markets or economies (E7) and advanced economies (G7). Their report's key results indicate that the growth of emerging markets is two times faster than

that of advanced economies. According to this, India will soon come into the second position among the top ten world economies.

3. India Real Estate Sector In ‘Amrit Kaal’

Indian real estate is important in India’s economic growth and development. It employs a large labor force that is both skilled and nonskilled. The Real Estate sector employs labor from rural areas, where agriculture is the only source of income; it provides the major infrastructure that attracts foreign direct investment in India.

3.1 India Real Estate Vision 2047

Knight Frank LLP, the world-famous real estate consultancy primarily located in London,¹⁵ published a report entitled ‘ India Real Estate Vision 2047’, which envisioned India’s real estate sector for the next 25 years. The report stated that India’s real estate sector creates 18% of the total jobs, making it a massive employment generator after the agricultural sector. This sector provides 7.3% of total output. By 2047, this sector will again flourish, creating 15.5% of the total output at a forecasted rate.

3.2. Estimating Residential Demand for 2047

The report further researched the residential demand in India until 2047. This illustrates that the Indian Population will extend to 1.7 billion by 2047; within this, almost 51% of the population will be in urban areas. This situation increases the requirements for houses. The report estimated that, to solve this crisis, India would be obligated to create 230 million housing units by 2047.

3.3. Incremental office stock in India

Knight Frank estimates that the country’s economy will probably enlarge in 2047, and approximately 69 % of the

workforce will require formal working conditions. Such crises are expected to continue in the future.

Conclusion

The momentum by which the Indian economy surged from 10th rank to 5th rank in terms of the world's largest economies has sent a strong global message that India will be among the developed countries in the coming decades. The path has been paved on which India is going to walk and reach the destination of "*The Developed India*," "*The Self Reliant India*," and "*The Modern India*" Modern India' in 2047.

Our paper comprehensively discusses the enablers of the economic growth of the country, which are Self – the Reliant India Campaign, The First Amrit Kaal Budget 2023-24, Factors driving the economic growth of the nation, and all initiatives of the government in this '*Amrit Kaal*' that aims to position India as the centenary of independence among the two biggest economies in the world.

As discussed previously in this paper, future projections of the Indian economy will show exceptionally high growth in the coming decades. The favorable demographic structure of India, FDI inflow in the recent past, digital transformation, and rising urbanization will transform India into a world leader in 2047. The task is too ambitious; however, India has the potential to reach this destination.

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GLOBAL WARMING- THE BIGGEST CHALLENGE OF INDIAN ECONOMY- “A CASE STUDY OF INDIAN APPAREL MANUFACTURING INDUSTRY”

Ankur Saxena¹ & Ankita Srivastava²

Abstract

India is one of the major economies in the world and ranked 15th globally. Most economists consider India a newly industrialized country (NIC), where most of the workforce is employed in the agriculture and industrial sectors. The World Economic Forum has predicted that in the next three years, the Indian economy will cross 5 trillion USD, but “Global warming” is the most alarming and difficult challenge facing the global economy, including India. The average surface temperature of Earth has escalated by 0.8°C since the initial years of the 20th century. It is pertinent to note that two-thirds of this increase has occurred since 1980. According to the environmental scientist, it could further escalate between 1.1 and 2.9°C, under the lowest emissions scenario, and between 2.4 and 6.4°C under the highest

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emissions scenario. Greenhouse gas (GHG) emissions are a major cause of global warming. India is the 5th largest emitter of greenhouse gases, and most of this emission is due to the industrialization and burning of fossil fuels. Because of global warming and climate change, most sectors, including agriculture, manufacturing, the service industry, and tourism, are facing problems. The Reserve Bank of India has projected that global warming will pose a risk to 4.5% of India's GDP by 2030. Numerous Indian and global institutions have forecasted similar consequences of global warming on Indian and global economies. As the manufacturing sector is a significant contributor to carbon emissions and global warming, many researchers and scientists have attempted to reduce the impact of the manufacturing sector on the environment. "Green manufacturing" is one of the many solutions by which we can make any manufacturing process more sustainable.

The textile and Apparel Industry is one of the major fuels in the Indian Economy and a significant contributor to carbon emissions. This sector contributes around 7-8% in Indian export and 3-4 % in Indian GDP and provides employment to more than 35 million people, making it the second largest employment creator in India after agriculture, so a serious effort is required to make the textile and apparel manufacturing process sustainable. Through this paper, the author has suggested a framework that will help the industry move towards green manufacturing and contribute more to the Indian Economy. With the help of two modelling techniques: "Interpreted Structural Modelling" and "Fuzzy Delphi Method," a seven-phase green manufacturing model can be applied in all manufacturing industry and reduce their carbon emission.

Introduction

India, with a country of 1.3 billion people is one of the major and fast-growing economies worldwide. Over

the course of over 70 years, the Indian economy has experienced numerous fluctuations. Since Independence, the country's GDP has increased significantly from Rs 2.7 lakh crore to over Rs 150 lakh crore. India, once stigmatized as a “third-world country,” has now emerged as one of the largest economies in the world. India's economic history has been characterized by numerous challenges in the past, and it has overcome all of them and achieved this position of significance where it is right now. As far as the future is concerned, one of the major challenges in the world and Indian economy is sustainability. Because of sustainability issues, such as global warming, climate change, and increased ecological footprints, all major global economies, including India, are expected to face difficult times in the future. The latest report on Currency & Finance 2022-23 by the RBI's Department of Economic and Policy Research (DEPR) states that climate change, resulting from increasing temperatures and shifting monsoon rainfall patterns, could lead to a 2.8 percent decline in India's GDP and negatively impact the living standards of almost half of its population by 2050, as reported by Forbes. India's GDP may potentially decrease by approximately 3 to 10 percent per year by 2100 as a result of climate change if sufficient measures to mitigate its effects are not implemented. It has been established that the major reason for this phenomenon is the burning of fossil fuels and industrialization, and that the effect of global warming can be controlled with suitable policies and efforts, such as sustainable and green manufacturing.

Journey of Indian Economy

India has commemorated 75 years of independence, known as “Amrit kaal,” celebrating it as the “Azadi ka Amrit Mahotsav.” During this period, India experienced significant growth and transformation. From the challenges faced by post-independence to those emerging as one of the world's fastest-growing economies, India's journey has been

remarkable. This period can be divided into five sections to trace the evolution of the Indian economy over the past 75 years. The first section spans independence from 1990 and is marked by numerous challenges. India grappled with widespread poverty, a primarily agrarian economy, limited industrialization, and inadequate infrastructure. The government pursued a planned economic approach, focusing on import substitution industrialization and policies aimed at fostering self-reliance.

The second phase of economic reforms and liberalization spanned 1991–2000. At the outset of this period, India confronted a severe balance-of-payments crisis, prompting a significant shift in economic policies. The government implemented a series of reforms aimed at dismantling license raj, opening the economy to foreign investment, and fostering greater participation from the private sector. These measures were pivotal for fostering higher economic growth and enhancing India's integration into the global economy. From 2000 to 2010, India experienced another significant milestone, known as the Information Technology and Services Boom. This decade witnessed a rapid expansion of India's information technology and services sector. The country has emerged as a key global center for IT outsourcing, software development, and business process outsourcing. This sector plays a crucial role in driving economic expansion, generating employment opportunities, and bolstering foreign exchange earnings.

The decade 2010–2020 was marked by a significant emphasis on infrastructure development in India. Government initiatives such as the National Highways Development Project, Smart Cities Mission, and Digital India have driven investments in transportation, energy, and digital infrastructure. These efforts aimed to bolster connectivity, support economic activities, and enhance overall quality of life. Post-2020, India witnessed a notable

surge in entrepreneurial activities and the growth of a vibrant startup culture. Government schemes like “Make in India” and “Startup India” have played a pivotal role in fostering this entrepreneurial spirit. Reflecting on India’s economic journey from 1947 to 2023 revealed a remarkable transformation. From the challenges faced during independence to seizing opportunities in a rapidly evolving global landscape, India has demonstrated resilience and adaptability throughout its journey.

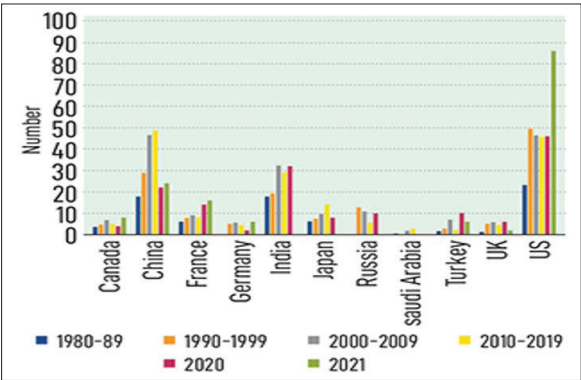
Impact of Sustainability on Indian Economy

In 2022, global greenhouse gas emissions will reach 98 gigatonnes (Gt), with 196 countries contributing. Interestingly, only 5% of these countries were responsible for over 85% of overall emissions. The primary drivers responsible for approximately 80% of global emissions are industrialization, energy production, and agriculture. India is the fourth largest carbon dioxide emitter globally, with an annual emission of 1.65 gigatons. This places India behind China (6.9 gigatons per year), the United States (5.2 gigatons per year), and the European Union (2.5 gigatons per year). Carbon emissions are the primary causes of global warming and climate change. Since the beginning of the 20th century, the mean surface temperature of the Earth has risen by approximately 0.8°C (1.4 °F), with roughly two-thirds of this increase occurring after 1980. Scientists predict that in the 21st century, the average temperature of the Earth’s surface is expected to increase by 1.1 to 2.9°C (2 to 5.2 °F) under the lowest emissions scenario, and by 2.4 °C to 6.4°C (4.3 °C to 11.5 °F) under the maximum emissions scenario. Researchers, producers, and consumers are currently prioritizing sustainable materials, processes, and approaches to mitigate additional harm to the environment. Textile industries, together with other manufacturing sectors, contribute significantly to high water and energy

consumption, the formation of wastewater containing chemicals, and the production of solid waste.

According to the Forbes assessment, India ranks among the top ten economies with the highest risk associated with climate change and is already experiencing the devastating consequences of global warming. In 2023, India experienced its highest February temperatures on record, since data collection began in 1901. Every year, there is a significant increase in disaster activities, such as floods and landslides. As shown in Image 1 below the USA, China and India have recorded the highest frequency of such events and also have a tendency to grow.

Image 1: Climate Change related disaster frequency



Source: IME and DEPR (RBI)

According to several studies, India is increasingly at risk owing to the threat of escalating global warming, increased carbon emissions, and plastic waste. India incurred a loss of approximately \$69 billion just in the year 2019 as a result of climate-related incidents, which stands in stark contrast to the \$79.5 billion lost between 1998 and 2017. The floods that occurred in India in 2019 had a significant impact on almost 14 states, resulting in the displacement of almost 1.8 million individuals and causing 1,800 fatalities.

In total, over 12 million individuals were affected by heavy rainfall during the monsoon season in 2019, resulting in an estimated economic loss of approximately \$10 billion.

All reports and data suggest that the Indian Economy is facing a monstrous challenge and is increasing daily. To negate these risks, many measures and policy approaches are required, such as green financing and sustainable manufacturing. Estimates indicate that the annual green financing requirement to overcome the infrastructure gap created by climatic events could amount to approximately 2.5 percent of GDP.

Green and Sustainable Manufacturing- A Possible Solution

Many researchers have stated that a substantial reason for global warming and climate change is the burning of fossil fuels owing to industrialization. Any control measures and policy change to reduce the impact of industrialization on the environment will definitely help improve the situation. Green and sustainable manufacturing is an important tool that can be used to control industrial carbon emissions.

Green manufacturing encompasses the management and mitigation of harmful substances in the development, production, and utilization of goods or procedures that have the potential to impact the environment and contribute to global warming. In recent years, concerns regarding global warming have prompted scholars and practitioners to focus on the environmental impacts of garment and textile businesses. Green manufacturing is essential for achieving sustainable growth and can provide enterprises with a competitive edge. Customers tend to prefer organizations that effectively adopt green manufacturing. These manufacturing organizations consistently work to develop strategies for implementing environmentally friendly practices to restructure supply chain systems, thereby maximizing the

advantages of strategic green manufacturing practices in product management.

Role of Textile and Apparel Industry in Indian Economy

The textile and Apparel Industry plays a vital role in the Indian Economy. This industry is the second largest employment generator after agriculture; approximately 35 million people and 7 million families are associated directly or indirectly with this industry, making it a middle-class industry.

India, both as a nation and economy, has achieved remarkable accomplishments since gaining independence. It is currently one of the fastest-growing economies with an average GDP growth rate of over 7% over the past decade. It has expanded to become one of the major economies globally and is a progressively significant participant in the evolving global structure. The textile sector is a long-standing industry in the Indian economy, with a history stretching back several centuries. The textile industry can be divided into two main segments: traditional and modern sectors. The traditional sector encompasses handlooms, handicrafts, and sericulture, all of which are operated on a small scale using traditional tools and methods. On the other hand, the contemporary sector comprises spinning mills, composite mills, and garment factories that employ modern technology and concepts.

The Apparel Industry and textiles collectively contribute nearly 33% of India's exports. Traditionally, this industry has been divided into two sectors: exports and domestic consumption. According to the 2018 annual report of the Ministry of Textiles, the textile industry is dominant in India's economic framework. Beyond fulfilling basic human necessity, it contributes significantly to industrial output, employment generation, and the country's export earnings. Presently, it constitutes approximately 15% of

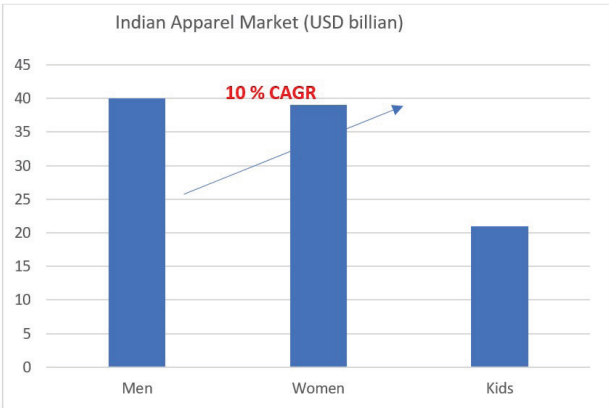
industrial production and contributes 4% to the GDP. The detailed installed capacity, from fiber production to garment manufacturing, is shown in Figure 2.

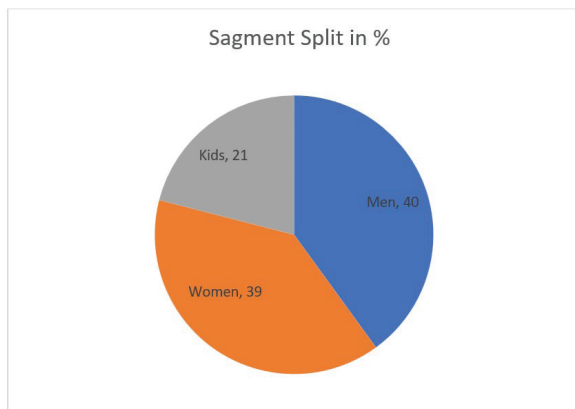
Image 2: Installed capacity of India from Fiber to garment

Fiber	Yarn		Fabric		Garment		
Cotton	Capacity		Capacity		Capacity		
Area	11 Million Hectare	Spinning Mills	1757	Composite Mills	183	Sewing Machines	3 Million
Production	5780 Million Kg	SSI Spinning Mills	1,333	Weaving Mills	174	Units	75000
Man Made Fibers (in Mn Kg)		Short Staple Spindles	48 Mn	Handlooms	2.4 Mn	Production	
Capacity	1765	Rotor	.77 Mn	Power looms	2.3 Mn		
Production	1285	Long Staple Spindle	1 Mn	Looms	66000		Pieces
Others (Production in Mn. KG)		Production in Mn. Kg		Production in Mn. Sq. Meter			
Wool	45	Spun Yarn	4713	Woven Fabric	47084		
Silk	20			Knitted Fabric	14,646		
Jute	1494						

With respect to the growth of the apparel sector in India, the prospects look bright as the industry is expected to grow with 9–10% CAGR in the time span of 10 years, that is, 2015–2025. The growth is expected equally in all three basic sagments: men wear, women wear, and kids wear.

Image 3: Expected growth Rate in Basic Segments of Indian Apparel Industry from 2015 to 2025.





It is pertinent to mention that Textile and Apparel Industry is a major growth engine of Indian economy and suitable measures to make this industry sustainable will help India to achieve its goal to control global warming.

Textile and Apparel Industry and Global Warming

The textile and Apparel Industry is the second-largest polluting industry in the world. It is responsible for 17–20 % of water pollution and produces approximately 24 billion tons of garbage every year, which goes to landfills and is later responsible for soil pollution. Modelling undertaken by Eunomia and by IUCN suggests that (synthetic) textiles are particularly important sources of microplastics, accounting for 20-35% of the microplastics that enter the oceans each year. The industry is also responsible for 10% of global carbon emissions. It will take approximately 22000 liters of water to process one kg of cotton material, which is equivalent to 2–3 shirts. Several fabric manufacturing processes, including sizing, scouring, bleaching, washing, dyeing, printing, and finishing, require substantial amounts of freshwater. These processes also generate significant volumes of effluent, characterized by intense color, high concentrations of

organic compounds, and varying compositions. Each process in the clothing and textile supply chain either deteriorates or depletes natural resources to prepare inputs for the next stage.

Development of Green Manufacturing Framework for Indian Apparel Industry- A case Study

Based on the arguments and data presented above, it is evident that global warming and climate change are major challenges in the Indian Economy. Industrialization is one of the major causes of carbon emissions and global warming; therefore, any tool that helps reduce industrialized carbon emissions is required. The textile and Apparel Industry is one of the major parts of the Indian economy, and it is also the second largest polluting industry in the world; thus, a sustainability framework for the Indian Apparel industry is prepared and tested, which can also be used for other industries.

Research design and modelling techniques for framework development

The dictionary defines “framework” as “A set of assumptions, concepts, values, and practices that constitute a way of viewing reality.” In the context of this research, however, “framework” refers to “A tool that can be utilized by the garment industry or a garment manufacturing organization to assess their current status in green manufacturing. Additionally, it will aid the organization in enhancing its green manufacturing practices towards improvement.”

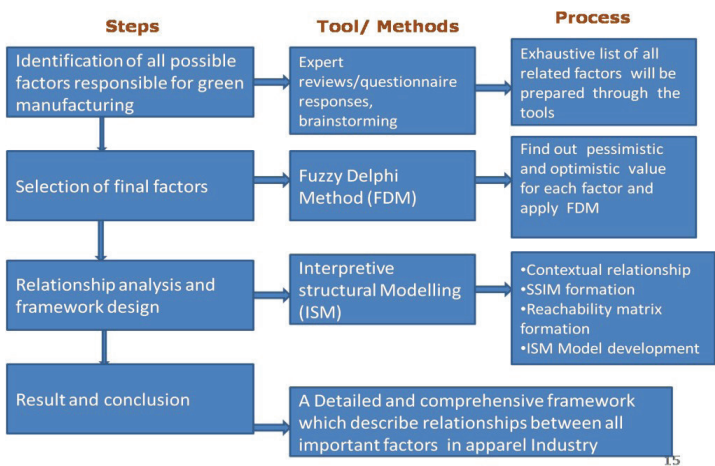
This green manufacturing framework was developed based on data collected from 81 garment manufacturing industries in different parts of the country. A research instrument was used to collect data. A team of five industry experts working in sustainability was used throughout the process. This model is developed on the principles of system

dynamics and two major modelling techniques “Fuzzy Delphi Method” and “Interpreted Structural Modelling” were used.

Methodology of Framework Development

After reviewing existing research on the subject, the following process flow was identified to develop a green manufacturing framework tailored to the apparel industry. Figure 3 (below) illustrates the steps involved in the framework development.

Image 4: Process of Framework Development



To develop a green manufacturing framework for the apparel industry, all the parameters that play important roles in sustainability were identified through secondary research and expert advice. Twenty parameters were identified. In order to simplify the model, parameters were further funneled down to using mathematical Modelling techniques “Fuzzy Delphi Method.” The funneling process of FDM resulted in a reduction of 10 parameters, which were subsequently utilized in the design of the green manufacturing framework.

Table 1: Final parameters for ISM

S. No.	Code	Parameter
1	F-1	Type of Energy Used
2	F-2	Raw Material Manufacturing
3	F-3	Apparel Manufacturing Technology
4	F-4	Government Norms for the Industry or Regulatory Framework
5	F-5	Procedure for Waste Treatment
6	F-6	Economic Constraints
7	F-7	Green Logistics (Packaging and Transportation)
8	F-8	Competitive Strategies

Interpreted Structural Modelling techniques for framework development

After determining the final parameters, ISM was used to establish the system relations within these parameters. The following stepwise procedure is adopted while applying “Interpreted Structural Modeling”:

Step 1: The parameters were funneled using the FDM technique and are listed for the next step.

Step 2: Contextual relationships are established between the parameters listed in Step 1.

Step 3: Structural Self-Interaction Matrix (SSIM)

- Considering the contextual relationships of each parameter, the existence of an interaction and its direction between any two parameters (i and j) was acquired from a group of experts.
- Four symbols were used to represent the possible interactions between any two parameters i and j .
 - V: Parameter i influence parameter j
 - A: Parameter j influence parameter i

- X: Both i and j influence each other
- 0 (zero): No interaction between any two parameters

Step 4: Reachability Matrix

The SSIM format prepared in step 3 was transformed into the reachability matrix by replacing symbols (V, A, X, and 0) with binary digits 0 and 1. The rule of replacement is as follows:

Table 2: Rule of replacement from SSIM to reachability matrix

If the (i, j) entry in the SSIM is	Entry in the Initial Reachability Matrix	
	(i, j)	(j, i)
V	1	0
A	0	1
X	1	1
O	0	0

Step 5: Partitions on the Reachability Matrix

After grounding the reachability matrix, it was processed to extract the digraph and associate structural models.

Step 6: Lower-triangular Format Reachability Matrix

The reachability matrix was further transformed into a lower triangular format by identifying the highest-level elements and inserting them as the first element in the new reachability matrix.

Step 7: Digraph for Interpretive Structural Model

Having identified the levels of the elements, the relationship between the elements was drawn, indicating the serial number of the elements and the direction of the relation with the help of an arrow.

Step 8: Interpretive Structural Model

Table 5 explains the format in which the contextual relationship between the parameters was established.

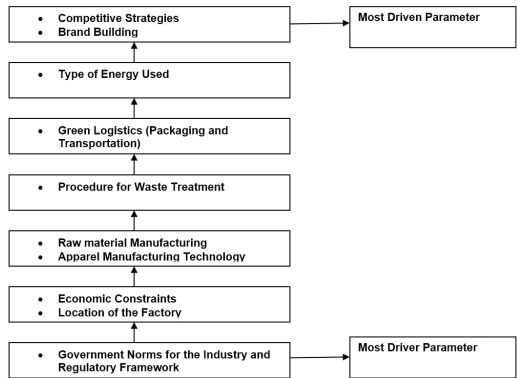
Table 3: Contextual relationship table for ISM

Element No	Element name	Contextual Relation	Interpretation
F1	Type of energy used	Organizational Change force A will influence/enhance Organizational Change force B	How or in what way Organizational Change Force A will influence/enhance Organizational Change Force B?
F2	Raw Material manufacturing		
F3	Apparel Manufacturing Technology		
F4	Government Norms for the industry or Regulatory Framework		
F5	Procedure for Waste Treatment		
F6	Economic Constraints		
F7	Green Logistics (Packaging and Transportation)		
F8	Competitive strategies		
F9	Brand building		
F10	Location of the factory		

Result and discussion

Interpretive structural Modeling generates a structured and directional framework tailored for green manufacturing in the Apparel Manufacturing Industry. It offers decision makers a clear understanding of their situation and the interconnected variables crucial to green manufacturing. Based on the dependency matrix of the parameters, the phased implementation of green manufacturing prioritizes factors according to their significance and influence on other listed factors.

Image 5: Green manufacturing Framework



Conclusion

Global warming and climate change are some of the biggest challenges faced by humankind and the global economy. The entire globe is experiencing the impacts of global warming in some or other ways. India is one of the major economies badly hit by this phenomenon; in the future, this problem will grow in the absence of suitable measures. The seven phased green manufacturing frameworks suggested in this study represent one such measure. This will help garment manufacturers improve their carbon emission levels and further help them contribute to the Indian economy. This will also help manufacturers in brand building and provide a competitive advantage. Similar frameworks can be prepared for other manufacturing industries after selecting suitable parameters and a contextual relationship matrix.

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ROLE OF HANDLOOM SECTOR IN INDIAN ECONOMY

Ankita Srivastava¹ & Ankur Saxena²

Abstract

The textile Industry in India is the second-largest employment generator after agriculture. This industry accounts for 14% of the total industrial production and contributes to approximately 30% of India's total exports. The textile sector in India consists of four major segments: composite textile mills, independent power looms, handlooms, and garment manufacturing. The handloom industry is the country's largest cottage industry, with 23.77 lakh looms. The handloom sector provides employment to approximately 35 lakh weavers directly and also to those involved in allied activities such as spinning, packaging, and trading. Interestingly, this sector has given employment to 72.29% of female workers out of the total handloom workers. The handloom sector produces approximately 19% of the total fabric manufacturing in India, and has a marked position in Indian exports.

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Mats and mattings, carpets, rugs, bedsheets, cushion coverings, and other handloom items were the main handloom goods exported from India. More than 60% of all handloom exports from India are textiles used for home furnishing. From 2020–21, handloomed carpets, rugs, and mats accounted for 13.6% of all exports. Indian silk scarves are in high demand worldwide and these handloom-based goods constitute a sizeable portion of all handloom exports. The main locations for the production of handloom goods in export markets are Karur, Panipat, Varanasi, and Kannur. Products include floor coverings, curtains, kitchens and bathroom linens, bed linens, table linens, and embroidered textile materials. India exports handloom goods to more than 20 nations worldwide. The US, the UK, Spain, Australia, Italy, Germany, France, South Africa, the Netherlands, and the United Arab Emirates. Of these, the United States is the largest importer of handloom goods from India, holding the top spot for the previous eight years.

This industry has been able to resist competition from the power loom and mill sectors because of the government's effective participation in financial aid and the execution of numerous developmental and welfare projects. The handloom is renowned for its adaptability and flexibility, which promotes creativity and allows experimentation. The strength of the handloom industry is its ability to introduce novel designs that the power loom industry cannot match. As a result, handloom is a part of India's legacy and represents both the artisanship of weavers and the wealth and diversity of our nation.

This study covers the current scenario and the major challenges faced by the handloom sector in India. The PESTEL analysis for the status of the handloom sector in the context of political, economic, social, technological, ecological, and legal scenarios is also discussed. The paper will also shed light on measures to make the handloom sector

the engine of the Indian economy and a true ambassador of Indian culture in the global forum.

Introduction

Art and Craft significantly affect society by controlling opinions, implanting values, and depicting experiences across space and time. Handicrafts, Paintings, music, sculptures, and other art forms are considered the archives of a society's concerted memory. Several studies have established the effect of handicrafts on the basic sense of self and community and also described how handicrafts can be a vital parameter for decoding and understanding any particular society and culture. Religion, culture, social beliefs, economy and sustainability are considered as the driving factors which contributes to preserve and develop the handicraft and handloom sectors.¹

India is known for its ancient handicraft techniques. One of the biggest and oldest cottage sectors in India is the handloom sector, which has a long history that dates back thousands of years and is renowned for its superb craftsmanship, which embodies dynamic Indian culture. The distinctive hand weaving, printing, and spinning techniques of handloom artisans in India are well known worldwide. Their headquarters are in the nation's tiny towns and villages, where abilities are passed on from one generation to the next. With 23.77 lakh looms, the handloom sector is the largest cottage business in the country. With almost three million people employed directly and indirectly, it is also the second-largest employer in rural areas. The Handloom Census 2019–20 indicates that 3,522,512 handloom workers are employed nationwide in this business. 72.29 Othe f all handloom workers in the industry, 72.29% are women, making up the majority of the workforce.

Different handloom techniques are used in different states of India based on climatic conditions, cultural values,

raw material availability, and other factors. Few important and significant handlooms techniques are Jamdani and Tant from West Bengal, Patola from Gujarat, Banarasi Brocade from Uttar Pradesh, Chanderi from Madhya Pradesh, Kanjivaram from Tamil Nadu, Pochampally and Upadda from Andhra Pradesh and Kota doria and Pattu from Rajasthan among others. These handloom techniques are not only good ambassadors of Indian art and culture in the world but also reduce pressure on environment, which is generated from textile and apparel manufacturing Industries.^{2, 3}

History of Indian Handloom sector

Indian handwoven fabrics have existed since the Vedic era. Indian cotton and wool-based woven fabrics are known for their superior quality and luster, and were exported to major countries in the ancient era. Weaving became a major employment-driven industry during that period. During the Mughal period, along with the Mughals, skilled Muslim weavers from the West Asian countries also came to India. After settling in India, these weavers started brocade-dominated weaving with the amalgamation of Persian art with the local culture and values. Intricate floral motifs have replaced ancient animal and bird motifs. The craft flourished during the period of the Mughal Emperor Akbar due to his keen interest in art and crafts. However, later on, during British rule in India, Britishers found that better quality and cheaper rates of Indian handloom fabric became a threat to the trade of British handloom fabric. Britishers levied heavy duty on the trade of yarn and Indian handloom fabric to suppress yarn spinning and the handloom weaving sector of India.

With the influence of World War I and II, demand for power-loom-made fabrics increased, which again resulted in a sharp decline in handloom fabrics in India. During the non-violent and non-cooperative movement by Mahatma Ghandhi, Indian yarn spun on Charkha and handloom

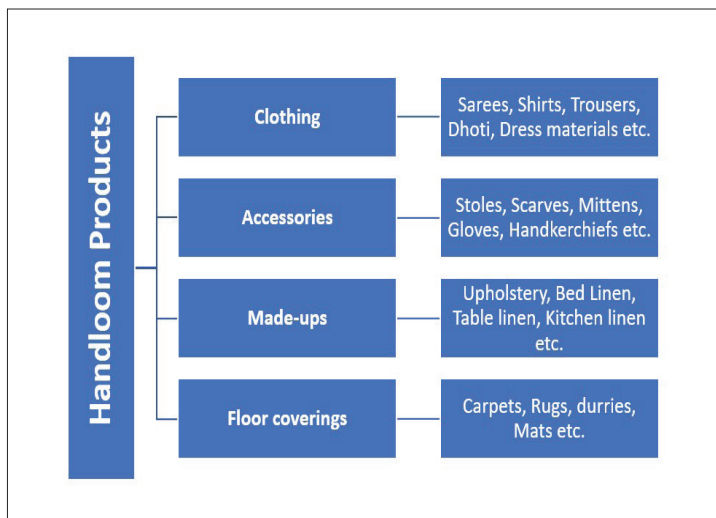
fabrics was used as political weapons to inculcate the Swadeshi spirit. The objective of promoting hand-spun and hand-woven fabrics was to increase employment among rural Indians and promote self-reliance and self-sufficiency among Indians. The All-India Handloom Board (AIHB) was established in 1945 and was reconstituted in 1952 to advise the government for the development of the handloom industry. Since then, several schemes have been proposed by the government to support the Indian Handloom sector and weavers. Currently, Handloom cloth is highly sought after both in India and elsewhere due to its distinctiveness, fineness, lustre, and intricately woven designs.⁴⁻⁵

Key feature behind envisioning Amrit kaal with vision of growth for next 25 years, is the Sustainable and Inclusive Development, which is also refereed as '*Janbhagidari*' through '*sabka saath, sabka prayaas.*' The Indian handloom sector promises to deliver the same, as this is a sustainable fabric manufacturing technique that provides employment to citizens irrespective of caste, community, and gender.

Handloom Sector in India

The four main categories of the Indian handloom industry are floor coverings, fashion accessories, apparel, clothing, and made-up. Sarees, dress martials, shirts, trousers, dhoti, kurta, etc., fall under the category of fashion accessories. Made-ups/Home furnishings cover the bed linen, table linen, kitchen linen, carpet, rugs, and durries that fall under the category of floor covering. The details of these segments are also provided in Image 1.

Image 1: Division of Handloom sector in India



Indian traditions and culture are deeply rooted in handloom crafts. It is scattered throughout almost every part of India. These crafts have been cherished since their ages, and there are many states and cities in India that are specifically known for their handloom heritage. A list of major Indian handloom clusters is given in Table 1.

Table 1: Major Handloom Clusters in India

Region	State(s)	Product / Speciality Work	Major Clusters
North East India	Assam	Sualkuchi	Guwahati
	Mizoram	Mizo Puan Weaving	Thenzwal, Aizwal
	Nagaland	Loin Loom Weaving	Dimapur, Kohima
East India	Odisha	Sambalpuri Weave	Sambalpur, Kalahandi, Phulbani, Bolangir
		Koraput Weave	Koraput
	West Bengal	Carpet Weaving	Darjeeling

North India	Jammu and Kashmir	Pashmina Weaving	Srinagar
	Uttar Pradesh	Brocade, Jangla, Tanchoi, Vaskat, Cutwork, Tissue and Butidar	Varanasi
	Haryana, Punjab and Rajasthan	Panja Weaving	Panipat, Jaisalmer, Barmer
		Bandhej, Lehariya	Jaipur, Jodhpur, Alwar, Ajmer
		Kota Doria	Kaithun, Magrol, Siswali
Central India	Chhattisgarh	Pata Weaving	Bastar
	Madhya Pradesh	Maheshwari Weaving	Maheshwari
		Chanderi Weaving	Chanderi
West India	Gujarat	Patola Weaving	Patan
		Mashru Weaving	Patan
	Maharashtra	Paithani	Yeola, Paithan
South India	Kerala	Coir Work	Allapuzha
		Dhurrie Weaving	Warangal, Kothawada
	Andhra Pradesh	Pochampalli Weave	Pochampalli
		Mangalagiri	Mangalagiri
	Tamil Nadu	Kanchipuram	Kanchipuram

Export Scenario of Indian Handloom Sector

India is the third largest exporter of apparel and textiles worldwide. The textile and clothing industry in India is one of the major contributors to the Indian Economy. From 2021–2022, the textile and apparel industry, which includes handicrafts, accounted for 10.5% of India's total merchandise exports. Off the world's textile and clothing commerce, 4.6% are from India. The major textile and apparel export destinations for India are the USA, EU, and

UK, which account for approximately 50% of India's textile and apparel exports.

Over 35 lakhs are employed in India's handloom industry, which is one of the country's largest unorganized economic sectors and an essential component of rural and semirural livelihoods. The industry employs more than 25 lakh women as associated workers and weavers, making it a significant driver of women's economic emancipation. The handloom industry uses less energy and requires less capital, making it a sustainable process. It is also adaptable to market demands, open to new ideas, and sufficiently flexible for small manufacturing. The handloom sector provides uniqueness and exclusivity of designs, which is not possible with the mass manufacturing of power looms. Owing to these benefits, handloom products have a huge market in both the international and national markets.

According to the annual report 2022-23 released by the Ministry of Textiles, from to 2015-16 to 2022-23 (up to December 2022), financial assistance has been accorded to 613 Handloom Clusters. The following number of clusters has been accorded financial assistance from to 2018-19 to 2022-23 (up to December 2022), which is given in Table 2.

Table 2: Financial assistance accorded to handloom clusters in India from 2018-19 to 2022-23.

Sl. No.	Year	No. of cluster sanctioned	Amount released (Rs. In Crore)
1	2018-19	16	8.56
2	2019-20	21	16.84
3	2020-21	2	17.60
4	2021-22	69	59.92
5	2022-23	109	74.24

The major handloom clusters of exports were Karur and Madurai in Tamil Nadu, Kannur in Kerala, and Panipat in Haryana. Export quality handloom products, such as tablemats, curtains, floor mats, placemats, embroidered textile materials, and kitchenware, are manufactured in Karur, Madurai, and Kannur. Panipat is known for its durries and other heavy varieties of home furnishings, in which handspun yarns are extensively used. Varanasi, Bhagalpur, Shantipur, Jaipur, Chirala, Poochampally Ahmedabad, Warrangal, and Sampalpur are also known for their export quality of handloom products. Mumbai Delhi, Chennai, and Kolkata have a large number of merchant exporters who source their products from these centers. The details of export achievements during the last 03 years are given below in table 3.⁶

Table 3: Export data for handloom Products from 2019-20 to 2022-23.

Year	Achievement	
	Rs. in Crores	In US \$
2019-20	2248.33	315.62
2020-21	1644.78	222.65
2021-22	1987.63	266.88
2022-23	671.89	86.10

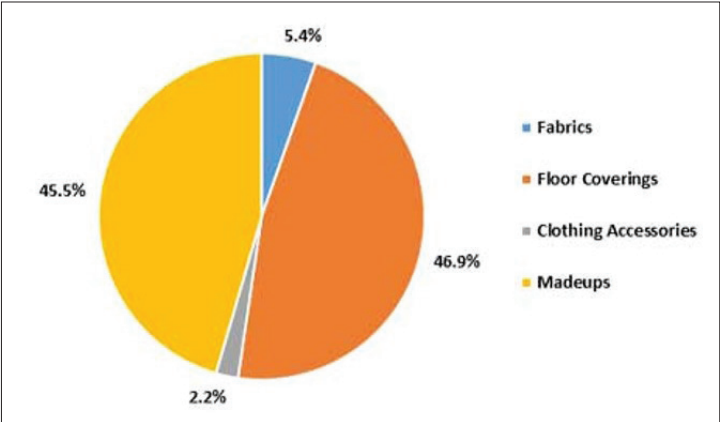
The handloom industry is constantly adapting new trends and designs to market scenarios and consumer preferences. The sector is also trying to improve the quality of products according to the demands of the international market.

The country's exports of mats and mattings accounted for 29.60% of India's total textile exports in the fiscal years 2021–2022. More than 60% of India's overall exports of handloom products are home furnishing. The exports of carpets, rugs, and carpeting brought about US\$ 124.89

million (about Rs. 930.78 crore) in 2021–2022. The export value of cotton durries during 2021–2022 was US\$ 190.47 million (approximately Rs. 1,419.10 crore).

The demand for Indian silk scarves in the global market is enormous. These scarves generated US\$ 7.7 million (approximately Rs. 61.5 crore) in export revenue in 2020–21. The proportion of handloom-produced linen items in overall exports during 2020–21 was approximately 23.5%. These products included cotton, bed linen, toilet linen, kitchen linen, pillowcases, cushion cases, bedsheets, napkins, and tablecloths. India exported cotton yarn, textiles, made-ups, handloom goods, etc. for US\$ 7.17 billion between January and June 2022. The category-wise share of handloom export revenue for 2021-22 is given in Image 2.

Image 2: Category wise share of handloom export revenue (2021-22)

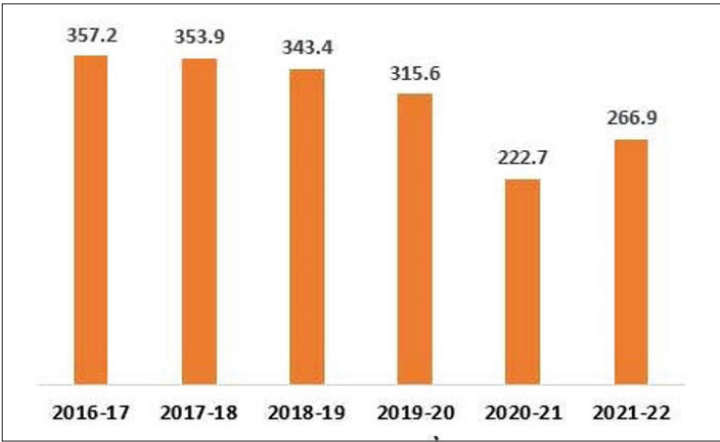


Source: The Handloom Export Promotion Council (HEPC)

Figure 3 shows the handloom export trend of India in US\$ million from 2016-17 to 2021-22. The decline in handloom export in 2020-21 is owing to the Covid-19 where the ban was imposed in the country as per the order of the government to prevent the spread of the virus. The markets

were mostly closed during that period, and transportation facilities were also held, resulting in such a situation.

Image 3: Handloom Export trend of India from 2016-17 to 2021-22. (US\$ million)



Source: The Handloom Export Promotion Council (HEPC);

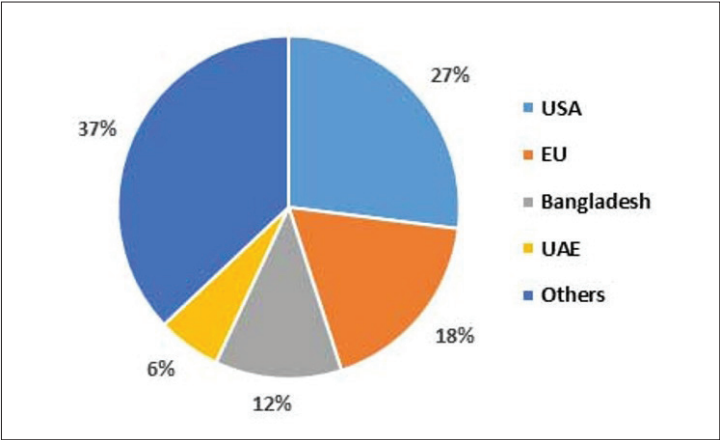
*Note: *April 2021-Feb 2022*

India exports handloom goods to more than 20 nations worldwide. The USA, the UK, Spain, Australia, Italy, Germany, France, South Africa, the Netherlands, and the United Arab Emirates Over the past eight years, the USA has been the top importer of handloom products from India. The nation imported handloom goods worth US\$ 33.75 million in 2021–2022 (April–September). During the same year, the value of India’s handloom exports to the UK, the country’s second-largest buyer, rose to US\$6.50 million.

In 2021–2022, the European Union made up 18% of India’s exports, Bangladesh accounted for 12%, and the United Arab Emirates made up 6% of all Indian handloom exports. Other countries importing handlooms from India include Denmark, Thailand, Sri Lanka, Greece, Brazil, Belgium, Chile, and Canada. From 2021–2022, 37% of India’s

handloom exports were to these nations. The country wise export share is given in the image 4.⁷

Image 4: Country wise export share for the financial year 2021-22



Source: The Handloom Export Promotion Council (HEPC)

PESTLE Analysis of Indian Handloom Sector

PESTLE analysis is an assessment of political, economic, social, technological, legal, and environmental factors related to an organization, industry, or business. These factors are analyzed to minimize any related threats that could affect the organization in the future and to utilize the opportunities in the best possible manner. These variables were examined in the context of India’s handloom industry to observe the present state and potential future developments for the craft.

Political: Preservation of Indian art and culture is one of the priorities of Indian Government through the ‘Make in India’ policy so all handlooms’ techniques have strong political relevance in the current era. Political factors exert a strong influence on the long-term sustainability and profitability of crafts. These factors determine the extent to which government policies influence an industry or

business. The Government of India constantly supports the handloom and handicraft sectors to revive ancient crafts. The government has introduced various schemes for the upliftment of artisans. Weavers are also benefitted by these schemes, which is expected to result in the expansion of the craft market in the near future.

Economical: In this era of machines and automation, the handmade Indian (handloom and handicraft) has its own charm in the global market, which contributes significantly to the Indian economy. A country's economic development directly influences its segment. Economic factors include foreign exchange, interest rates, labor market conditions, inflation, and the saving rates of a country. As India has recently evolved as the fastest-growing economy in the world, this will certainly positively impact the craft sector. Handloom weaving, an ancient craft of Indian states, would likely benefit from the economic status of the country.

Social: Social factors include demographic considerations, lifestyle trends, consumer beliefs, and attitudes toward working conditions. These factors are significant for any organization or business in targeting customers and understanding their demands according to present and future social conditions. Additionally, this factor also helps in identifying the local workforce and their zeal to work in the industry. Social factors play a major role in defining craft growth in the country. Handloom weaving is considered a traditional craft that holds strong social and cultural significance for the weaver community who practice these crafts. Weavers have the facility to work from home with flexible timings as the handloom is set up in their home. Female members of their families also actively participate in pre-weaving processes such as bobbin winding. However, much is needed to spread awareness about this craft among consumers to explore the possibilities of expanding the craft market. This is only possible with the design intervention,

new material exploration, and right marketing strategies to expand the reach towards consumers.

Technological: Technological factors refer to innovations and developments in technologies, such as the rate of technological change, the evolution of infrastructure, and government or institutional research in the segment. In the case of the handloom sector, technological factors play a crucial role, as similar products can be made on the power loom, which hampers the demand of the fabric made on the hand loom. Power loom products are available at much cheaper rates, which again affects the demand for authentic handloom fabrics. Considering this, weavers have now started using machine-spun yarn instead of hand-spun yarn to meet the market demand. In addition, a new color palette of yarns was added to explore the design possibilities according to the latest trends. The pre-weaving process and weaving are still performed in the traditional manner to retain the essence of the craft. Designers are now taking interest in these crafts and are trying to make contemporary products with handloom woven fabric to attract consumers, especially youth.

Legal factors: Legal factors include parameters such as industry regulations, licenses and permits required to operate, employment and consumer protection laws, protection of intellectual property rights, quotas, resources, imports/exports, and taxation. Being one of the craft sectors of India, Handloom weaving craft is also abided by the rules and policies imposed by the Indian government for the handloom and handicrafts of India. Handloom Mark, silk mark, Geographical Indication given to the authentic handloom products are the steps taken by the government to preserve such crafts.

Environmental: As mentioned earlier, the textile and apparel industry is one of the most polluting industries in the world. Therefore, handloom weaving is a sustainable

and environmentally friendly fabric manufacturing technique that has a significant impact on the environment. These factors are mainly concerned with the effect on the surrounding environment and the influence of ecological aspects of the organization or business. Environmental analysis of an industry considers a variety of factors, such as weather, climate, geography, global climate change, and environmental offsets. In the case of the handloom sector, it follows a sustainable way of fabric manufacturing by using natural fibers such as cotton and wool. handloom weaving being a sustainable and environment-friendly fabric manufacturing technique paves a way to achieve the sustainability targets where the Indian government has committed to achieve 'net zero' carbon emissions by 2070.

2. Conclusion

The handloom sector is an integral part of Indian heritage and legacy, and it defines the rich culture and diversity of India, which shows the craftsmanship of weavers. Handloom is known for its flexibility and uniqueness, which permit innovations in design and techniques. handloom weavers with their weave the culture, tradition, beliefs, and values of the craft. Handloom weaving has been revived in the last few years through government initiatives and policies to preserve these crafts. This industry can act as a catalyst for the expansion of the entire ecosystem, creating jobs along the value chain with the correct policies and incentives. However, the sector faces some challenges, such as difficulties in the unorganized sector, unbalanced demand–supply ratio, poor infrastructure, low wages, and health issues to the weavers. Despite these challenges, there is hope for this sector, as high-end designers are now taking an interest in the segment. In addition, the availability of online platforms opens new possibilities for reaching consumers. The industry unquestionably assures a bright future for the Indian economy, given the existing situation of rising

demand for Indian handloom fabrics in both domestic and foreign markets.

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ECONOMIC DEVELOPMENT AND CHALLENGES IN OUR ENVIRONMENT DURING THE 75 YEARS OF THE INDIAN ECONOMY

Ashok Kumar

Abstract

India, a nation with a rich cultural heritage and burgeoning economy, has traversed a remarkable journey since its independence in 1947. Over the past 75 years, the country has witnessed phenomenal economic growth, lifting millions of people out of poverty and transforming itself into a global economic powerhouse. However, this remarkable economic increase has not been a challenge. One of India's most pressing concerns is the delicate balance between economic development and environmental sustainability. As India's economy has expanded, its environmental footprint has increased. Rapid industrialization, urbanization, and population growth have placed immense pressure on natural resources, leading to air and water pollution, deforestation, and biodiversity decline. The consequences of these environmental challenges are far-reaching, impacting human health, livelihoods, and the

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long-term sustainability of India's economy. To address these environmental challenges, India has implemented a range of policy interventions, guided by the principles of sustainable development and ecological conservation. These policies focus on promoting renewable energy sources, strengthening pollution control measures, and conserving forests and natural habitats. India has actively participated in international environmental agreements, such as the Paris Agreement on climate change, demonstrating its commitment to global environmental stewardship. India has made strides to address these environmental challenges.

Introduction

India's economic growth has lifted millions of people from poverty. This has also created new opportunities for businesses and entrepreneurs.

However, India's economic growth has not yet been challenged. These include Inequality, Poverty, Lack of infrastructure, and environmental degradation. Economic reforms that have opened up the economy to foreign investment and trade

Despite these challenges, India's economic growth has been remarkable. It is a testament to the hard work and ingenuity of Indian people.

India made significant economic progress since its independence in 1947. The country's GDP has grown over 60-fold, and India is now the fifth largest economy in the world. However, economic growth has come at a cost to the environment.

Some key environmental challenges facing India include the following.

Air pollution: India has some of the worst air quality in the world, with major cities such as Delhi and Mumbai regularly exceeding the safe limits for air pollutants. Air

pollution is a major cause of respiratory problems and other health problems in India.

Water pollution is another major problem in India, where many rivers and lakes are contaminated by sewage and industrial waste. Water pollution can lead to a variety of health problems, including diarrhoea, cholera, and typhoid

Deforestation: India has lost a significant amount of forest cover in recent decades due to logging and agricultural expansion. Deforestation can lead to soil erosion, biodiversity loss, and increased vulnerability to climate change.

Climate change: India is one of the countries most vulnerable to climate change, with impacts such as rising sea levels, extreme weather events, and changes in agricultural yields. Climate change is likely to have a significant impact on the Indian economy and society in coming years.

The Indian government has implemented several policy interventions to address these environmental challenges. Some key policy interventions include the following.

The National Air Quality Management Programme (NAAPQM): The NAAPQM was launched in 2019 with the aim of reducing air pollution levels in major cities across India. The program includes a number of measures, such as stricter emissions standards for vehicles, Thermal Power Plants, and industries, and the promotion of the use of clean energy. Specific Emission Standards have been provided for key polluting industries.

National Forest Policy: The National Forest Policy was adopted in 1988 and sets out the government's approach to forest management. This policy aims to increase forest cover, promote sustainable forest management practices, and protect forest biodiversity.

The National Action Plan on Climate Change (NAPCC): The NAPCC was launched in 2008 and outlines the government's strategy for addressing climate change. The

plan includes several measures, such as the promotion of renewable energy, energy efficiency, and sustainable agriculture.

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The National Action Plan on Climate Change (NAPCC): The NAPCC was launched in 2008 and outlines the government's strategy for addressing climate change. The plan includes several measures, such as the promotion of renewable energy, energy efficiency, and sustainable agriculture.

A 60-fold increase in GDP over 75 years is considered a significant achievement. This represents an average annual growth rate of approximately 5.5%. This was higher than the average growth rate of the global economy over the same period, which was approximately 3.5%.

Several factors contributed to India's economic growth. These include:

- A large and growing population
- A young and educated workforce
- A growing middle class

Economic reforms that have opened up the economy to foreign investment

Whether a 60-fold increase in GDP over 75 years is “normal” or “good” is a matter of opinion. Some people might argue that this is the normal growth rate for a developing country. Others might argue that it is a good growth rate, but that it could be even higher if India was able to address its challenges.

Ultimately, the answer to the question of whether India's economic growth is "normal" or "good" is a matter of perspective.

Compared to other countries, India's economic growth rate is relatively high. For example, the average annual growth rate of the Chinese economy over the past 75 years has been approximately 9%. However, it is important to note that China started from a much lower base than India did. In 1949, China was among the poorest countries in the world. On the other hand, India was a middle-income country in 1947.

As India continues to develop, it is likely that its economic growth rate will slow. However, India is still expected to become one of the fastest growing economies in the world in the coming decades.

Challenges on Our Environment - *Air Pollution*

The **air quality in India was worse** than in the past. This is because of a number of factors, including rapid population growth, increased industrial activity, vehicular emissions, and construction dust.

In recent years, the air quality in India has reached alarming levels. In 2021, Delhi was ranked the most polluted city in the world. The air quality in Delhi is so poor that it is estimated to cause 1.5 million premature deaths each year.

The Indian government has taken several steps in addressing air pollution. These steps include:

Introducing stricter emission standards for vehicles
,Investing in public transportation,
Promoting the use of cleaner fuels
,Planting trees

The air quality in India has been a major concern for many years. In recent years, air quality has declined in many parts of the country. However, it is difficult to definitively say whether air quality is now worse than it was in the past.

Evidence suggests that air quality in India has deteriorated over time. For example, a study by the World Health Organization (WHO) found that the average PM2.5 concentration in Indian cities increased by 15% between 2008 and 2016. PM2.5 is a type of particulate matter that is 2.5 micrometres or smaller in diameter. It is considered one of the most harmful air pollutants because it can easily penetrate deep into the lungs.

However, there is also evidence to suggest that the air quality in India may improve in some areas. For example, a study by the Indian Institute of Tropical Meteorology found that the average PM2.5 concentration in Delhi decreased by 25% between 2015 and 2020. However, air pollution is a major problem in India, and efforts need to be made to improve air quality.

The government of India has taken several steps to address air pollution, such as implementing stricter emission standards for vehicles and industries, promoting the use of cleaner fuels, and planting trees. However, more needs to be done to improve the number of factors to improve air quality in India.

Rapid economic growth: India's economy has grown rapidly in recent decades, leading to increased emissions from vehicles, factories, and power plants.

Increased use of vehicles: The number of vehicles on the road in India has increased dramatically in recent years, leading to increased emissions from tailpipes.

Burning of fossil fuels: India is heavily reliant on fossil fuels because of its energy needs, leading to the emission of pollutants such as sulfur dioxide and nitrogen oxides.

Construction activities: Construction activities generate a large amount of dust and particulate matter, which can contribute to air pollution.

Crop burning: Farmers in India often burn crop stubbles after harvest, which releases pollutants into the air.

The Indian government has taken several steps in addressing air pollution. These steps include introducing stricter emission standards for vehicles, promoting the use of cleaner fuels, investing in public transportation, planting trees, and banning the burning of crop stubbles, and a number of policies that have been effective in improving air quality around the world.

Some of the most effective policies include the following.

Vehicle emission standards: Stricter vehicle emission standards are effective in reducing air pollution from cars, trucks, and other vehicles. For example, the introduction of Euro 6 emission standards in Europe led to a significant reduction in the emissions of nitrogen oxides (NOx) and particulate matter (PM).

Fuel standards: Cleaner fuel standards are also effective in reducing air pollution. For example, the introduction of ultra-low sulfur diesel (ULSD) in the United States led to a significant reduction in sulfur dioxide (SO₂) emissions.

Renewable energy policies: Policies that promote the use of renewable energy sources, such as solar and wind power, can help reduce air pollution from power plants. For example, the feed-in tariff scheme in Germany led to a significant increase in the amount of solar power generated in the country.

Energy efficiency standards: Energy efficiency standards can help reduce air pollution by reducing the amount of energy that must be produced. For example, the Energy Star program in the United States has helped reduce energy consumption significantly.

New industries are encouraged to use renewable energy and energy-efficient machinery.

Public transportation: Investing in public transportation can help to reduce air pollution by reducing the number of cars on the road. For example, the expansion of the bus rapid transit (BRT) system in Bogotá, Colombia, has led to a significant reduction in tree planting, which can help to improve air quality by absorbing pollutants. For example, a study by the United States Forest Service found that trees in urban areas could remove up to 27 tons of air pollution per year.

All new and existing industries must develop the “Green Belt” in a minimum of 33% of their land area.

All Industries are required to carry out detailed carbon footprint and carbon sequestration studies with respect to the proposed project. The proposed mitigation measures must also be analyzed and submitted for the clearance of the proposed project.

Industrial emission standards: Stricter industrial emission standards can help to reduce air pollution from factories and other industrial facilities. For example, the Clean Air Act of the United States has led to a significant reduction in emissions from power plants and other industrial sources.

Air quality monitoring: Air quality monitoring can help to identify areas with high levels of air pollution and track changes in air quality over time. For example, the AirNow program in the United States provides real-time air quality data for cities across the country.

Air quality and stack emission monitoring are now required for industries, and data are observed online by statutory bodies (in many states).

Public awareness campaigns: Public awareness campaigns can help educate people about the dangers of air pollution and encourage them to take steps to reduce their emissions. For example, the “**I Can Breathe**” campaign in China has helped raise awareness about the dangers

of air pollution and encouraged people to use public transportation.

In addition to these policies, several other measures can help improve air quality. These measures include:

Education and awareness campaigns: Educating the public about the dangers of air pollution and encouraging them to take steps to reduce their own emissions can help improve the air quality.

Economic incentives: Providing economic incentives for businesses and individuals to reduce their emissions can help improve air quality.

International cooperation: International cooperation on air pollution issues can help reduce transboundary air pollution and improve air quality globally.

Renewable energy policies: Policies that promote the use of renewable energy sources, such as solar and wind power, can help reduce air pollution from power plants. For example, the feed-in tariff scheme in Germany led to a rapid increase in the use of renewable energy.

Challenges on Our Environment - Water Pollution

Rapid economic development in India has come at the cost of the environment. Water pollution is one of the most serious environmental challenges facing India. Water pollution is caused by the release of harmful substances into water bodies such as rivers, lakes, and groundwater. These substances include industrial wastes, sewage, and agricultural runoff.

Water pollution has several negative impacts on human health and the environment. It can cause diseases, such as diarrhea, cholera, and typhoid. It can also damage aquatic ecosystems and render water unsuitable for drinking, irrigation, and other uses.

Policy Intervention

The Indian government has taken several steps in addressing water pollution. In 1974, the government enacted the Water (Prevention and Control of Pollution) Act. This Act created a Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), which are responsible for monitoring and regulating water pollution.

The government has implemented several programs and initiatives to reduce water pollution. These include the

(Water Harvesting -Compulsory for all industries)

Recycling of treated effluents to reduce freshwater consumption, preferably zero liquid discharge (ZLD).

National Rivers and Lakes Conservation Plan,

the National Lake Conservation Plan, and the Clean Ganga Mission.

Very Specific Policy Intervention

In addition to the general policy interventions mentioned above, the Indian government has implemented several specific policy interventions to address water pollution. These include:

Effluent standards: The government has set standards for different types of industries and other polluters. These standards and policies specify the maximum levels of treatment that can be recycled, or the minimum amount of treated effluents (within norms) that can be discharged into water bodies.

Zero liquid discharge: The government has mandated zero liquid discharge for certain industries, such as the pesticides, pharmaceuticals, and leather industries. This means that these industries must treat their wastewater to such a high standard that it can be reused or discharged into the environment without causing pollution.

Common effluent treatment plants: The government has encouraged the establishment of common effluent treatment

plants (CETPs) for industrial estates. CETPs are more efficient and cost effective than individual treatment plants.

Public-private partnerships: The government has partnered with the private sector to finance and implement water pollution control projects.

Impact of Policy Intervention

Policy interventions implemented by the Indian government have had a positive impact on water pollution. However, water pollution in India remains a serious challenge. Further research is needed to reduce pollution from industries, sewage, and agricultural runoff.

Economic development and its impact on deforestation in India

India is a rapidly developing country and its economy has grown significantly in recent decades. However, this economic growth, including deforestation, has come at a cost to the environment.

Deforestation is the clearing of forests for other land uses such as agriculture, urbanization, and mining. India has one of the highest rates of deforestation in the world, and it is estimated that the country has lost over 20% of its forest cover over the last 75 years.

Several factors have contributed to deforestation in India, including:

Population growth: India's population has grown rapidly in recent decades, which has led to an increased demand for land for agriculture and housing.

Economic development: India's economic development has led to an increased demand for forest resources such as wood and timber.

Weak governance: Weak governance and corruption have made it difficult to enforce environmental regulations and protect the forests.

The impact of deforestation on the Indian environment is significant.

Deforestation contributes to climate change, soil erosion, and loss of biodiversity. This also reduces the availability of water and other resources for local communities.

Policy interventions to reduce deforestation in India

The Indian government has implemented several policies to reduce deforestation, including

The Forest Conservation Act, 1980: This Act prohibits the diversion of forestland for non-forest uses without prior approval from the central government.

National Forest Policy, 1988: This policy aims to protect and conserve India's forests and ensure that forests are managed sustainably.

The Joint Forest Management Programme: This program was launched in 1988 to involve local communities in the management and protection of forests.

The Compensatory Afforestation Fund Act, 2016: This Act requires companies to divert forest land for non-forest uses to compensate for the loss of forest cover by planting trees elsewhere.

These policies have successfully reduced deforestation in India. However, there is still a long way to go. Deforestation remains a major problem in India, and it is estimated that the country is losing over one million hectares of forest cover each year.

Specific policy interventions during 75 years of Indian economy

Over the past 75 years, the Indian government has implemented several specific policy interventions to reduce deforestation. These interventions included the following.

Establishment of the Indian Forest Service in 1864: The Indian Forest Service is responsible for the management and protection of India's forests.

The launch of the National Forest Policy in 1952: This policy was the first comprehensive forest policy in India, and aimed to protect and conserve India's forests.

The launch of the Joint Forest Management Programme in 1988: This programme involved local communities in the management and protection of forests, and has been credited with reducing deforestation in some areas.

Enactment of the Forest Conservation Act, 1980: This Act prohibits the diversion of forestland for non-forest uses without prior approval from the central government.

Enactment of the Compensatory Afforestation Fund Act, 2016: This Act requires companies to divert forest land for non-forest uses to compensate for the loss of forest cover by planting trees elsewhere.

These policy interventions have had a positive impact on deforestation in India. However, there is still a long way to go. Deforestation remains a major problem in India, and the government must continue implementing policies to reduce pollution and improve forest cover.

Policy interventions to address climate change in India

The Indian government has implemented several policies to address climate change, including

National Action Plan on Climate Change (NAPCC): This plan was launched in 2008 and outlines eight national missions on climate change. These missions include the National Solar Mission, National Mission for Enhanced Energy Efficiency, and National Mission on Sustainable Agriculture.

Intended Nationally Determined Contribution (INDC): This document was submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015 and outlines India's climate change goals for the period 2021-2030. These goals include reducing the emission intensity of India's GDP by 33-35% by 2030 and increasing India's non-fossil fuel-based power capacity to 40% by 2030.

National Electricity Plan (NEP): This plan was released in 2022 and outlines India's plans for the power sector. The NEP has set a target of 500 GW of installed renewable energy capacity by 2030 and 45% of the cumulative electricity generation from renewable energy by 2030.

These policies have been successful in reducing India's greenhouse gas emissions and in increasing its renewable energy capacity. However, there is still a long way to go. India must continue to implement its climate change policies and invest in renewable energy to reduce its emissions and adapt to the impacts of climate change.

Specific policy interventions during 75 years of Indian economy

Over the past 75 years, the Indian government has implemented several specific policy interventions to address climate change. These interventions included the following.

Establishment of the **National Council on Climate Change in 2007:** This council is responsible for advising the government on climate change policy.

The launch of **the National Action Plan on Climate Change in 2008:** This plan outlines India's eight national missions for climate change.

Submission of India's Intended Nationally Determined Contribution to the UNFCCC in 2015: This document outlines India's climate change goals for the period 2021-2030.

The launch of the **Paris Agreement in 2016**: The Paris Agreement is a global agreement addressing climate change. India is a party to the Paris Agreement and has committed to reducing its greenhouse-gas emissions.

The launch of the **National Electricity Plan in 2022** outlines India's plans for the power sector and sets ambitious targets for renewable energy.

These policy interventions have had a positive impact on India's climate-change efforts. India reduced its emissions intensity of GDP by 24% between 2005 and 2020 and increased its renewable energy capacity from 2.3 GW in 2002 to 172 GW in 2022. However, there is still a long way to go. India needs to continue to implement its climate change policies and invest in renewable energy in order to reduce its emissions and adapt to the impacts of climate change

Conclusion

Economic development and deforestation are both complex and interrelated. The economic development of an increasing population leads to deforestation. The Indian government has implemented several policies to reduce deforestation, and these have been successful. However, there is still a long way to go. Deforestation remains a major problem in India, and the government must continue implementing policies to reduce pollution and improve forest cover.

India is the world's third largest emitter of greenhouse gases and its emissions are growing rapidly. India's economy has grown rapidly in recent decades and this growth has been accompanied by an increase in energy consumption and transportation, resulting in increased greenhouse gas emissions. India's population is expected to reach 1.6 billion by 2050, and this population growth will put further heavy pressure on India's basic needs (Roti, Kapra aur Makan), infrastructure, energy resources resulting in

adverse impact on environment. India's urban population is growing rapidly, which has led to an increase in energy consumption and greenhouse gas emissions. The impact of climate change on India's economy is significant. Climate change is estimated to cost India \$45 billion per year, or 2.5% of GDP. This cost is due to several factors, including the following. Climate change is causing extreme weather events, such as droughts and floods, which are damaging crops and reducing agricultural yields. Climate change is causing water shortages (due to glacier melting, lower rainfall/groundwater depletion, etc.) in many parts of India, which impacts agriculture, industry, and households. Sea level rise is threatening and will have an adverse impact on coastal communities and infrastructure, not only in India, but throughout the world. Human and other living beings are accustomed to their living areas. Climate change can cause a number of problems not only for human beings but also for all other living beings, including biota. Climate change has resulted in various health problems.

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AMRIT AAHAR IN AMRIT KAAL: A RAY OF LIGHT TO ACHIEVE SUSTAINABLE DEVELOPMENT GOAL 2

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Abstract

India has established itself as an independent and sovereign nation in last 75 glorious years since, achieving new heights every day, emerging as a world power through sustained efforts and by manpower as its core competency, securing the status of fifth largest economy in the world. However, to hold on to the title while progressive development, there is an urgent need of planned roadmap for its forthcoming years. Pitching our Honorable Prime Minister Shri Narendra Modiji invocated “Amrit Kaal”- 25 years of planned and sustainable development. One of the concerns regarding inclusive, balanced and sustainable development has been the paucity and nutritious food for the people, which is also a goal in UN’s 17 sustainable development goals, of which India has been a member since 1945. There goals are set to

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be achieved by the year 2030 and India has been making tremendous efforts for embracing them, but in the last few years, one major area of concern is India's ranking in the Global Hunger Index (GHI). It is desirable that India focuses on achieving SDG 2 by 2030 while doing so it will fulfill its global commitment and furthermore it will also free India from hunger and other associated issues. This challenge has stuck at its best time as the opportunity to overcome it is now, when the Indian Government has given a new vision to the nation i.e., Self-reliant India Scheme or Atmanirbhar Bharat Yojna, a relief package to provide a new impetus to the revival of the economy during the pandemic, this relief package can be more fruitful if linked with SDG 2 to solve the problem of hunger. Apart from this, there is a need to redefine and redesign the various ongoing hunger fighting schemes, for speeding up and through efficacy of these schemes by associating them with the Self-reliant India Scheme. Additionally, there is a need to study the pre-existing scheme and unearthing the prevailing problems and suggesting plans and ways to ending hunger and achieving SDG 2 on time.

This research work is mainly focused on comprehensive review of major programs and schemes initiated by the Indian Government specially designed and launched for hunger eradication, their integration with the Atmanirbhar Bharat Yojna to accomplish the target of SDG 2, to analyze the obstacles faced in achieving these schemes, and to develop new set of strategies focused towards achieving SDG 2 targets, aiming to hunger free India.

For the said purpose, data was collected from various government departments, agencies, articles, journal, magazines and newspapers along with some international sources of data. Collected data was analyzed through appropriate statistical methods. The result involved the scrutiny of current running schemes, development of a more

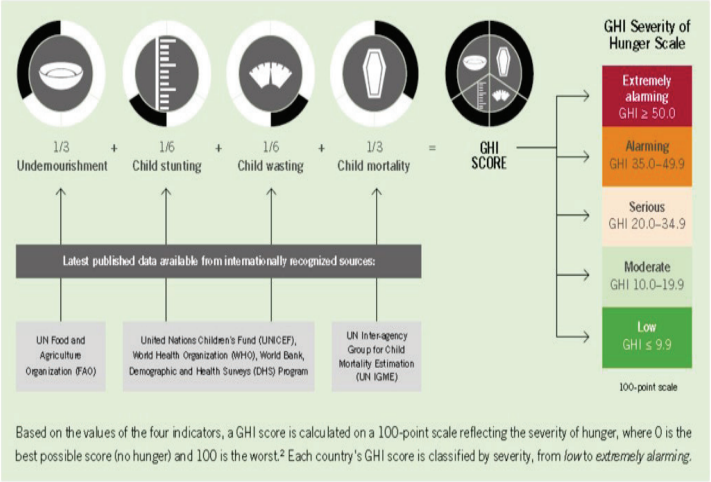
inclusive and researchers' objective model, videlicet, 'AMRIT AAHAR' stands for Achieve food security, Agricultural sustainability & Hunger free Atmnirbhar Rashtra in AMRITKAAL, solemnly targeted towards achieving the SDG 2 till 2030.

Keywords: Amrit Aahar, Amrit Kaal, Atmanirbhar Bharat, SDGs and GHI.

Introduction

Bharat or India, as a nation is continuously pushing forward on the path to becoming the global power after 75 years of independence by reaching new heights every day. Whether it is social upliftment, economic development, or political issues, as a nation India is constantly creating new dimensions in all of them. However, the Global Hunger Index reports' rankings and assessments constantly interfere with our celebration of 75 glorious years of independence as Azadi ka Amrit Mahotsav. As per the report, India's GHI score of 28.7 in 2023 places it in the "serious" category on the Severity of Hunger Scale. While neighboring countries like Pakistan (102nd), Bangladesh (81st), Nepal (69th), and Sri Lanka (60th) scored higher than us in 2023, India ranked 111th out of 125 countries in 2022, indicating a serious level of hunger. Welthungerhilfe and Concern Worldwide publish the annual peer-reviewed Global Hunger Index (GHI). The goal of this tool is to comprehensively track and measure hunger at the national, regional, and global levels while accounting for different aspects of hunger over time. A score of 100 denotes the highest level of hunger, while a score of 0 denotes no hunger at all. A 100-point scale is used to calculate the GHI score.

Figure No. 01: Global Hunger Index Scores



Source: 2023 Global Hunger Index Report

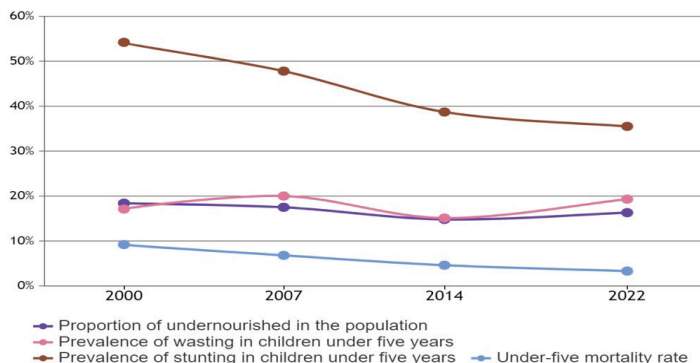
India’s GHI score of 28.7 2023 places it in the “serious” category on the GHI Severity of Hunger Scale. This represents a minor improvement over its prior GHI 2015 score of 29.2, which was likewise regarded as serious. Furthermore, India has come a long way from its worrisome GHI scores of 38.4 in 2000 and 35.5 in 2008.

Table No. 01: Global Hunger Index – India’s Rank

2023 GHI	111th out of 125
2022 GHI	107th out of 121
2021 GHI	101st out of 116
2020 GHI	94th out of 107
2019 GHI	102nd out of 117
2018 GHI	103rd out of 119

Source: Global Hunger Index Reports

Figure No. 02:
Trend For Indiacator Values – India



Source: <https://www.globalhungerindex.org/>

The Ministry of Women and Child Development has raised concerns regarding the report's methodology, citing "serious methodological issues" and "malafide intent." The prevalence of child wasting is consistently below 7.2%, according to data from the government's Poshan Tracker, despite the GHI's reported figure of 18.7%. Three of the four GHI indicators are linked to children's health and may not accurately represent the population as a whole, according to the government. The "Proportion of Undernourished Population" indicator, which is based on an opinion poll with a small sample size of 3000, has also raised concerns from the government regarding its accuracy. The government argues that indicators like wasting and stunting are not exclusively related to hunger but rather result from a complex interaction of factors like genetics, environment, sanitation, and food consumption. The government also noted that there might be other factors at work, suggesting that hunger is not the only cause of child mortality.

But this is not the only report which represents a serious situation in hunger issues apart from this, according to the Food and Agriculture Report 2018, India has 195.9 million

undernourished people, or 24% of the world's hungry. Approximately 19 crore people in the nation sleep on an empty stomach every night, according to the National Health Survey. Malnutrition and hunger claim the lives of about 4500 children annually on average. The National Family Health Survey (NFHS) 2019–2021 in India reports that 35.5% of children are stunted. As per the 2023 report on the State of Food Security and Nutrition in the World, 16.6% of Indians suffer from undernourishment. With a concerning 18.7% child wasting rate, India has the highest rate of any country in the report (India's NFHS 2019–21). According to the January 2023 report by the United Nations Inter-Agency Group for Child Mortality Estimation, the mortality rate for children under five is 3.1%.

As we are one of the founding members of United Nations, we are committed to achieve all SDGs within targeted which is 2030 and it is truth that we are somewhere lacking behind to achieve the same. As a nation, not only for today but future, it is going to be a necessity to achieve the SDG 2 for the global commitment and for the people too. So, there is a need to rethink and boost up all the running, programs, plans, schemes and policies directly or indirectly aimed to hunger alleviation in India. On the 75th anniversary of India's independence, our esteemed Prime Minister presented the Amrit Kaal concept, a 25-year plan for "New India." Restoring the world's faith in India through Amrit Kaal, New India will involve restructuring all facets of the economy and achieving quick, profitable growth, improved living conditions for all, and advancements in technology and infrastructure. During this Amrit Kaal, Atmnirbhar Bharat Yojna and investment in its five pillars could be a ray of hope to achieve SDGs especially SDG 2 till 2030. Atmnirbhar Bharat Yojna, well known for its relief package and local solution for global problems, will definitely become a game changer for the India as a nation, society as well as an economy.

Review of Literature

(Sawakar & Hanumanthappa, 2018) The purpose of this research was to identify the issues and recommend suggestions for National Food Security Act. The research was exploratory in nature and used secondary data source. The research paper explained the NFSB (National Food Security Bill), challenges in implementing the Act, and the recommendation for its effective implementation focusing on climate change issues, insurance and pricing of crop and management. It also discussed the malnutrition and hunger issues as severe and ambitious efforts must be put forth by government and public in its regard.

(Sahota, 2022) The objective of this research was to underline India's present status in GHI (Global Hunger Index), point the problems faced in attaining the target of zero hunger and to recommend ways to achieve the target. The paper used secondary source of data extracted from official reports, articles, journals and websites. After detailed discussion, article concluded that, India is ranked 102nd out of 117 countries in the 2019 Global Hunger Index, and 25% world's total hungry population accounts in India. For attaining zero hunger goal of 17 SDGs in due duration, the country needs programme upgradation, holistic approach and effective implementation.

(Prakash Upadhyay & Palanivel, 2011) The main aim of the research was to identify the problems faced in attaining food security in India and ways to meet those challenges. The paper was of review nature and reasons have been classified into traditional, socio-demographic and politico-developmental concept, as well as analysis of reasons have also been separately explained in rural and tribal areas, in urban population, and in children and mothers. Conclusive challenges and ways to achieve the Millenium Development Goals included multi-sectoral solution.

Research Problem

India as a nation is celebrating its 75 years of independence under the flagship of Azadi ka Amrit Mahotsav in Amritkaal and GHI score is displaying another part of the reality that we are lacking to feed our people nutritious and healthy food. We are in a serious condition of hunger, undernutrition, poor food security and distribution as well as lacking to achieve our commitment to achieve SDG 2. So, there is strong need to address this problem and bring it on the platform where it can be diagnosed and being solved.

Research Objectives

- To review the major programs and schemes initiated by the Indian Government specially designed and launched for hunger eradication
- To analyze the obstacles faced in achieving these schemes
- To develop new set of strategies focused towards achieving SDG 2 targets, aiming to hunger free India

Research Methodology

This study is descriptive and exploratory in nature, which is mainly based on secondary data retrieved by various government and international agencies, reports, articles, magazines and websites apart from these GHI reports 2022 & 2023 were also take in to consideration.

Major Hunger Eradication Schemes

1. **Zero Hunger Programme:** A comprehensive government program called the Zero Hunger Programme aims to reduce hunger on a national scale. India started the Zero Hunger Programme in 2017 with the goal of improving agriculture, health, and nutrition. This initiative was made possible through the support of the Biotechnology Industry Research Assistance Council (BIRAC), the Indian Council of Medical Research, the Indian Council

of Agricultural Research, and the M.S. Swaminathan Research Foundation. The Zero Hunger Programme aims to decrease stunting in children two years of age and under, guarantee year-round food access, create stable food systems, increase the productivity and income of small farmers, and eliminate food waste.

The initiative also focuses a lot of emphasis on building agricultural equipment, starting zero hunger training, and designing genetic gardens for biofortified plants. In addition to lacking sufficient land, the majority of Indian farmers are technologically illiterate. Most food is wasted if there are no suitable places for marketing, transportation, or storage.

The World Food Programme was given the 2020 Nobel Peace Prize in recognition of its work preventing hunger from being used as a weapon of war or conflict, promoting peace in areas affected by conflict, and fighting hunger. To organize a nationwide webinar on “Zero Hunger by 2030” in conjunction with the Ministry of Panchayati Raj’s Azadi Ka Amrit Mahotsav.

2. Mid-Day Meal Programme: The Midday Meal Scheme is a school meal program designed to improve the nutritional status of children in school across the nation. Children in primary and upper primary classes in government-run and government-aided local bodies, Madarsa and Maqtabas supported by Sarva Shiksha Abhiyan, the Education Guarantee Scheme, innovative education centers, and National Child Labor Project schools run by the Ministry of Labor are eligible for free midday meals (lunches) during working days under this program. The Midday Meal Scheme is the largest of its kind in the world, serving lunch to 120 million students through over 1.27 million schools and the Education Guarantee Scheme.

Tamil Nadu first implemented the Midday Meal Scheme in the early 1960s under the leadership of former Chief

Minister K. Kamaraj. According to the Indian Supreme Court's directive, all states had implemented this plan by 2002. In September 2021, the Ministry of Education, which was assigned as the scheme's nodal ministry, renamed the program as the PM-POSHAN (Pradhan Mantri Poshan Shakti Nirman) Scheme. The Central Government estimates that 24 lakh additional preschool-age children attending government and government-aided schools by 2022 will be part of the program.

The central government will bear 60% of the costs associated with the Midday Meal Scheme, while the state governments will bear the remaining 40% of the costs. The national government supplies the money and grains for additional meals. Costs of labor, infrastructure, and transportation, are also shared by the federal and state governments. With funding from the 12th five-year plan, the initiative received ₹901.55 billion (US\$12 billion), a 134 percent increase over ₹384.9 billion (US\$5.1 billion) from the 11th five-year plan. The amount of money the government spent on the Mid Day Meal Program increased, going from ₹73.24 billion (US\$960 million) in 2007–08 to ₹132.15 billion (US\$1.7 billion) in FY 2013-14. The daily cost of cooking has been set at ₹4.13 per children in primary school and ₹6.18 per children in upper primary school.

3. Eat Right India Movement: The Food Safety and Standards Authority of India (FSSAI) is tasked with ensuring that food is safe and healthy for Indians to eat, according to the Food Safety and Standards Act, 2006. Therefore, the Eat Right India movement is a noteworthy attempt to transform the nation's food system into one that encourages eating habits that are safer and healthier.

It is a pan-Indian (existing throughout the country) cycle movement that aims to educate consumers about the importance of consuming wholesome food. The programme "Eat Right India" was founded on the ternary of overarching

principles “Eat Safe,” “Eat Healthy,” and “Eat Sustainable.” Reducing diseases linked to diet and foodborne illnesses affects people of all ages and socioeconomic backgrounds. Additionally, it unites all parties involved on a single platform and takes a “whole of society” stance. It is a flagship program in accordance with several initiatives like; POSHAN Abhiyaan, Anemia Mukta Bharat, Swachh Bharat Mission and Ayushman Bharat.

Significance Eat Right Movement Programme

- The significance of this campaign lies in its promotion of environmentally friendly food and its assistance in fostering healthy eating habits among the populace. The optimal combination of regulatory, collaborative, capacity building, and empowerment approaches is utilized to guarantee that both requirements are fulfilled.
- A coordinated or “whole of the government” approach is also taken into consideration by the movement since it unites the mandates of agriculture, health, environment, and other ministries related to food.
- Eat Right India aims to create a society in which all people have access to healthy, safe, and sustainable food by the year 2050. The Eat Right India Campaign aims to reduce the country’s consumption of oil, sugar and salt by 30 percent over a three-year period, and to completely eradicate trans fats from Indian food by 2022.

Obstacles Before the Schemes

1. Agriculture Productivity:

Introduction to new technologies have increased agricultural productivity in some parts of the country, still not all states are well-equipped with the advancement, resulting in only marginal increase. In addition, extreme climatic conditions and lack of technologies to counter them

have caused severe insufficiency of food in accordance with growing population.

2. Scheme Implementation:

It has been observed that several numbers of schemes have been introduced over a span of time related to food insecurity in India, however, the functional implementation of schemes have not been achieved of ongoing schemes related to hunger alleviation.

3. Monitoring:

In addition to implementation of schemes, its review and time to time tracking as well as publishing of reports describing its past records, current status and future target is crucial. Besides, scheme monitoring helps in finding the disparity between the set standards and actual goals achieved by the government. Poor monitoring from side of officials can be witnessed as none or only a few governments reports have been published by the government regarding the mentioned schemes.

4. Storage Facilities:

It is a well-known fact that India is a producer of sessional crops, which accelerate the cruciality of storage for produce, in lien for maintaining the quality as well as safety. As per the report of Reserve Bank of India, Gujrat, West Bengal, Uttar Pradesh and Punjab accounts for 70 percent of country's storage facility, indicating unwholesome development. Moreover, country lacks required infrastructure for cold storage warehousing. Lack of required capital, shortage of electricity supply, and low efforts of government (59 percent of storage capacity are in hands of private sector) contributes as major causes for faulty warehousing, resulting in wastage and low productivity of agricultural produce.

5. Corruption:

Introduction of any scheme carries inbuilt risk of corruption in densely populated and developing nation like India. Malpractices including selling inferior grains at ration stores, diverting grains to the open market for more profits, and inconsistent store openings causes the problem of food insecurity in India.

6. Interdepartmental Disputes:

Although each department in the country have been allotted specialized work as well as matters related to center and state have been defined, yet without proper coordination it is quite difficulty to implement any PAN India scheme, as for monitoring and presenting surveys and policy report coordination with local bodies is requisite.

7. Lack of Awareness:

Among other things, traditional agricultural methods take a little longer and result in a delayed output of food grains. Hence, new methods must be familiarized but there is lack of knowledge and training of farmers on new agricultural practices, technology, and its usage.

8. Public Distribution System:

Reason behind insufficiency of food is also uneven and faulty food distribution all over the country, the inefficiency of system including transportation and infrastructure results in even less benefit to public then the actual production as well as import.

9. Climate:

Over the recent years, climate change has been the focal issue all over the world, it has caused difficulties in the productivity of agriculture. It acts as a responsible hinder in biological growth of weather dependent crops, due to

temperature rise and unfashionable rainfall. Furthermore, droughts and floods attract diseases and pest infection causing crop failure all over the country.

10. Socio-Demographic Causes:

There have been several socio-demographical causes as well including illiteracy, overpopulation, gender inequality, and unemployment contributing to hunger alleviation and food insecurity in India.

Findings

- On the basis of above review and analysis, it was found that the problem of hunger as national and international reports highlighting it as a serious issue for the India.
- It can be the biggest hurdle in the path of balanced development and social justice.
- All the running schemes and programs are not that much effective and efficient to eradicate all forms of hunger from all over India.
- There are numbers of things to work on like; nutrition, food security, agricultural advancement, proper distribution of foodgrains and relief and so on.

Suggestion

- The government, to promoting nutrition awareness, should mandates social audits of the midday meal and other programs involving local authorities in all districts.
- Information technology should be used to improve program monitoring.
- Create community-driven nutrition education initiatives that, with a focus on women and children in particular, educate people about the importance of nutrition, balanced and healthy diets, and food preparation and eating habits in the local languages.

- The Public Distribution System (PDS) needs to be redesigned now in order to help those who are less fortunate financially and to increase the accessibility, affordability, and transparency of healthy food.
- To tackle the problem of food waste, enhance your cold storage and warehousing infrastructure.
- In remote and impoverished areas, set up mobile nutrition clinics in larger scale to offer health screenings, dietary guidance, and extra feeding to children and expectant mothers.
- **AMRIT AAHAR YOJANA IN AMRITKAAL:** For the purpose of above improvements researchers have develop a scheme named, ‘**AMRIT AAHAR**’ stands for **A**chieve food security, **A**gricultural sustainability & **H**unger free **A**tmnirbhar **R**ashtra in AMRITKAAL. **Amrit AAHAR Yojana** can be utilized as an umbrella scheme hunger eradication. It is a comprehensive plan encompassing the major schemes currently underway to end hunger, without disrupting their existing objectives and methodology. It can be an apex scheme to provide a specific type of monitoring and support to the currently running schemes, which will positively encourage their efficiency and goal orientation. The main objective of this scheme will be to free India from all forms of hunger by giving impetus to the various ongoing hunger fighting schemes in India to achieve the goals of SDG 2 of the United Nations in a timely manner.

The objectives of the scheme will be;

- To achieve SDG 2 target till 2030
- To completely eliminate all forms of hunger across India
- To bring unprecedented improvement in India’s World Hunger Index rank

To fulfill the above objectives, financial assistance can be provided to this scheme from the one of the biggest relief

packages of Self-reliant India (Atmnirbhar Bharat). With proper cooperation of all the five pillars of self-reliant India, **Economy**, which brings radical shift instead of gradual change; **Infrastructure**, which ought to become nation's identity; the **System**, founded on arrangements driven by 21st-century technology; **Vibrant Demography**, which provides the fuel for India to become self-sufficient; and **Demand**, whereby we should make the most of the strength of our supply chain and demand. In align with Atmnirbhar Bharat Relief Package in Amritkal, Amrit AAHAR scheme can become the largest and most successful scheme of its kind to work towards freeing India from hunger, which on one hand will demonstrate India's commitment towards SDGs and on the other hand it will also be essential in rescuing India from the hunger curse.

Conclusion

On the basis of above analysis, it can be concluded that if India wants to be a holistic global power in long term and an economic power in near future, it should work on all those aspects which are somewhere ignored by the policy makers and competent authorities. It should also be considered that the policies that can be unbeatable must be implemented with full transparency and integrity. It is not only about the hunger issues but other issues should get proper attention and resolved as soon as possible.

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TRADE-OFF BETWEEN ECONOMIC DEVELOPMENT AND ENVIRONMENTAL CONSERVATION WITH SPECIAL REFERENCE TO THE CATASTROPHE IN HIMACHAL PRADESH AND UTTARAKHAND

Bhanu Shankar

Abstract

The Himalayan region of India, known for its pristine beauty and ecological significance, has been facing the challenges of unrestrained development and environmental degradation. This paper explores the trade-off between economic development and environmental conservation in the context of recent catastrophes in Himachal Pradesh and Uttarakhand. The study highlights the similarities in bioclimatic features and concerns shared by mountain habitats globally, emphasizing the need for sustainable development practices. The paper discusses the ecological imbalances caused by human activities, such as climate change, deforestation, and pollution, and their impact on human survival. The development patterns in the Himalayan region of India are analyzed, focusing on the progress made by Himachal Pradesh and the challenges faced by other hill states. The study also examines the building regulations

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in Indian hill towns and their impact on urbanization and infrastructure development. The cases of Uttarakhand and Himachal Pradesh are discussed in detail, highlighting the devastating effects of reckless tourism, hydropower projects, road construction, and unplanned building activities. The paper concludes by emphasizing the need for judicious planning, strict enforcement of laws, and a balanced approach to development and environmental conservation in the Himalayan region. Recommendations are provided to mitigate the risks of landslides, manage urban growth, dispose of garbage effectively, regulate tourist inflow, and establish early warning systems for natural disasters.

Keywords: Ecological Imbalance, Himalaya, Environmental Conservation, Economic Development, Climate Change, Sustainable Development

Introduction

There are certain similarities in the bioclimatic features as well as concerns about which mountain habitats are shared around the globe, such as the Hindu Kush Himalayan ranges in South Asia or the European Alps range of mountains. These bothering facts are related to the drastic downfall in the mountain environment, which has been caused by the unrestrained consumption of resources, ultimately leading to human-created natural disasters.

The development model utilized in the mountain regions, being much varied as compared to the plain region, has surely not met the basic security measures that should be taken into account. There is evidence of large infrastructural projects such as dams, mineral exploration, and hydel projects in the Hindu Kush Himalayan region, completely ignoring the delicateness of mountains and threats they may cause to the environment. We have to foresee the consequences of developmental planning before the implementation of any project, as a little ignorance may have an irreversible impact

on the ecology and lives of local inmates. Loss of human and cattle lives, property, etc. are some of the destructive effects of calamities such as earthquakes, floods, and landslides, which follow the developmental path in that particular region

Development and Ecological Imbalance

Ecological imbalances occur when natural or human-caused disturbances disrupt an ecosystem. There are several reasons for this ecological imbalance, including climate change, deforestation, degradation of natural resources, natural calamities, and pollution. Human survival is severely affected by changes in climatic conditions and exhaustion of natural resources. The need for a cordial environmental situation for inmates to tackle all the created problems is fulfilled by the ecosystem. Ecological planning will not only ensure the human needs getting fulfilled but at the same time, the natural resources will be used in an efficient way. As a result, ecological planning is a basic need for sustainable development. Natural hazards in the form of landslides, devastating floods, loss of biodiversity, and long dry spells are now linked to climate change at the global level. Overuse and manipulation of nature by humans have resulted in adverse changes in climatic conditions. In other words it can be said that economic development has not always been at par with the environmental policies. At present, the need of the hour is to create a balance between economic development and protection of the environment, which undoubtedly requires working together with international organizations, communities, and the government, as well as fighting the associated health risks.

Development pattern in the Himalayan Region of India

Manipur, Jammu and Kashmir, Mizoram, Himachal Pradesh, Tripura, Karbi Anglong, and the North Cachar

districts of Assam, Uttarakhand, Nagaland, Sikkim, Meghalaya, and Arunachal Pradesh are parts of 11 states in the Himalayan region in our country.

Although there is similarity in the bio-physical characteristics, the map of development shows a large variation throughout the hill states, in terms of various symptoms of progress. Himachal Pradesh provides a classic example of the evolutionary pattern from an agrarian cereal-producing region to a leading horticulture-producing area. The state has made immense progress in terms of health care facilities, high literacy rates, availability of schooling facilities, physical infrastructure, and nearly universal enrolment at the primary level. The state of H.P. is now a role model for other hill states in the country in terms of a number of aspects of development. A number of favorable policy measures, such as focused public interventions, active participation of females in the decision-making process, effective and vibrant local institutions, and political support, make the state far more advanced and progressive despite having a number of issues of concern that need to be addressed. The state has prepared a comprehensive framework for creating an investor-friendly environment to ensure sustainable industrial development by keeping in mind the excellent agro-climatic diversity for value-added agro-business and the high potential in the tourism sector.

In nutshell, it can be noted that there is an extreme necessity for developing institution building capacity for enhancing development programs, keeping in view the delicateness of the region that make the mentioned Himalayan states prone to a number of calamities.

Building Regulations and Its Impact on Indian Hill Towns

Indian towns and cities have registered exponential growth in catering to the elevated demand for various building needs (for workplace, residence, institution, and

recreation) due to the ascending population and movement towards urban areas. The resultant cities are expanding outwards, thereby eating up the precious lands being used to cope with agricultural needs. This has resulted in a largely unplanned and uncontrolled semi-urban extension with low density. Such extensions generally have unauthorized developments for housing and shelter needs and mostly lack primary infrastructural necessities, such as water supply, sewage disposal, transportation networks, and electricity. The condition is more denouncing in North Indian Hill towns because of scarce land availability for urbanization, considering the slope morphology, topography, and other geo-environmental restrictions.

The hilly towns lying above 28° North latitude (hill towns of North India located in Uttarakhand and Himachal Pradesh, such as Mussoorie, Almora, Nainital, Dalhousie, Shimla, Srinagar, Manali, and many others) have colder weather and no direct Sun from Northern side. Therefore, the southern slopes were more favorable. To analyze the present pattern of development, it is important to study the building regulations in hill towns along with various factors responsible for amendments to the present building regulations.

According to the National Building Code 2005, any area with an altitude of more than 600 m from the mean sea level or any area with an average slope of 30° m is classified as hilly. Based on altitude and existing climatic conditions, hill regions are classified into foot hills (less than 1200 m), mid hills (1200 to 3500 m), and high hills (more than 3500 m) with different geo-environmental conditions. Shimla, Nainital, Dalhousie, Manali, Kasauli, and Mussoorie are preferred tourist destinations and are located in mid-hill regions. They were developed by Britishers during the pre-independence period and have presently acquired the status of main activity centers giving employment to a number of

people in nearby localities. The development of these hill stations can be grouped into four main stages:-

- (i) The first stage of the colonial period.
- (ii) The second stage was dominated by local elites during the post-independence period.
- (iii) The third stage, when these places became centers of socioeconomic activities.
- (iv) Stage four comprises the current scenario, when these places are under tremendous pressure for new development.

These hill stations developed during the British era had low density and low rise cottages for the European and Indian elite and shop cum residential buildings for local native populations. These hill towns are designed to meet the requirements of a specific population size. However, with the passage of time, population pressure, increased economic activities, and employment opportunities have changed the landscape and overall image of hill towns. Because of the insufficiency of existing patterns of development to meet the increased demand for residential, workplace, recreational, commercial, and educational areas for both residential and floating populations, there is a shift from low-rise buildings to middle-rise buildings, which cover almost all hill slopes in major hill towns, and such buildings are also coming up in peripheral areas of the hill towns.

In response to the high demand and unavailability of proper land for building construction, mid-rise buildings are emerging in hill towns. Interestingly, the prevailing building regulations do not have any provisions to regulate such constructions, with the result that problems related to traffic movement, sources of water supply, parking provisions, sanitation, etc., are getting aggravated.

We must all accept that urban areas in India are experiencing an ever-increasing population pressure, posing

a challenge before the government and other authorities can provide basic services and a safe and clean environment. Cities suffer from unplanned and haphazard development, problems with garbage and plastic, untreated sewage, chronic water shortages, and pollution. According to the National Disaster Management Authority (NDMA) report titled National Landslide Risk Management Strategy, this city (Shimla) was initially built for a population of about 25000 but today, the estimated population of the city is 232000 and the Shimla metro population is approximately 235000. Moreover, being a tourist destination and close to the national capital, a floating population of around one lakh visits this place annually, which demands the same basic facilities. Since it is a class I city of Himachal Pradesh, tremendous growth has been registered with the rapid development of real estate, housing, complexes, and shopping malls are taking place. There is no denying the fact that Shimla is multi-hazard prone, and with a changing demographic profile and rapid expansion, the city is struggling to attain a balance between development and sustainability.

Himachal Pradesh (Kinnaur) and Uttarakhand (Kedarnath) witnessed a natural disaster in 2013, while Jammu and Kashmir witnessed unexpected floods in 2014. Similarly, the cracking in Joshimath in Uttarakhand in 2021, the caving in of hills in Himachal Pradesh in 2022, and the floods in Manali and adjoining areas in Himachal Pradesh highlight yet again that the sustainable development promised is anything but.

The devastation in Himachal Pradesh is attributed to the causes that are very similar to those that hit Uttarakhand—reckless tourism, incessant felling of trees, hydropower projects, extensive construction of roads, and their widening and unplanned construction of buildings. The innumerable landslides in the monsoon period in Himachal Pradesh

blocked many roads, the worst hit being the Chandigarh Manali Highway after road widening started—the Char Dham blunder all the way again.

These situations posed a question regarding the development itself. Can we keep putting on a false front that climate change is merely summer heat? It is necessary to assess the carrying capacity of overburdened hilly regions.

The Case of Uttarakhand

The state of Uttarakhand is situated in the Himalayan belt, is famous for its natural beauty, and is considered a tourist attraction. With the proximity of the state to the national capital, it is a tourist destination for weekend revelers, where people like to visit areas like Nainital, Mussoorie, and Dehradun to beat the heat. Furthermore, the Char Dham Yatra attracts sizeable pilgrims during the summer, and this floating population also demands all basic civic amenities.

However, the cloud burst and avalanche of Kedarnath have cautioned that state administration and steps are being taken to restrict the number of pilgrims going to Char Dham Yatra through the registration process.

It must be kept in mind that the region falls on a major geological fault line called the highest seismic zones 4 and 5. It is the main Central Thrust Line, where the Indian (tectonic) plate is pushed under the Eurasian plate. Hence, this region is prone to earthquake. Within this region lies the Bhagirathi eco-sensitive zone, which is 100 km. stretch of the valley through which Ganga flows from the Gaumukh glacier. Under the Char Dham Pariyojna (CDP), the Government of India is planning to widen the roads in this region to 12 m. This is far wider than the 5.5 meter intermediate width norm recommended by experts for ecological sustainability. The Ministry of Road Transport and Highways (MoRTH) advocated the widening of roads to ensure smooth traffic mobility in the region for both pilgrims and defense. The

defence ministry demanded a carriage-way width of 7 m as an operational requirement. This widening of roads would imply that machines would be permitted to gouge approximately 18 to 20 m deep against 10 to 12m into steep slopes. This further increased the number of mountain slides. Furthermore, the felling of deodar trees for this purpose would further loosen the grip that the roots have on fragile mountains. Since the Himalayan range is the youngest mountain range in the world and is very fragile, the soil stability is very poor; therefore, widening of roads frequently leads to road carving in and is washed away during monsoons. Ever since road widening began under the CDP in 2013, around 200 landslides were reported until 2020. In contrast, since such work has not started in the declared eco-zones, very few landslides were observed, even during the monsoon period, while the three other routes were frequently closed. The High Powered Committee (HPC) reviewed the ongoing CDP and admitted that road widening activities should only be undertaken after environmental impact assessment and mitigation measures.

We found that of the three stretches of the Char Dham Project that lead to the border, the Gangotri stretch has been the most accessible, while both the Badrinath and Pithoragarh stretches up to Kedarnath Dham are prone to landslides and are frequently blocked. This is because the 100 Km Gangotri Valley, which was declared an eco-sensitive zone in 2012, is the only area where road widening under the Char Dham Yatra project has not yet begun.

A recent mishap took place in the Uttarkashi district of Uttarakhand, where an under-construction tunnel between Silkyara and Barkot collapsed and around 40 workers were trapped. This tunnel was constructed to reduce the Yamnotri Dham Yatra by 26 km. The incident has reignited concerns among environmentalists and the scientific community regarding the devastating impact of extensive construction

in a state where half of the region is landslide-prone. The project is being undertaken in a lime rock (sedimentary rock) region. Tunneling in such a region is only effective when all protocols are strictly adhered to. For Uttarkashi, there were only two potential reasons for this collapse. First, the region is a blind shear zone (a shear zone is a zone within the Earth's crust, which has been deformed to a large extent because of the rock walls on either side of the zone slipping past each other. This shear zone is in the form of a fracture in the upper crust, because the rock is brittle. However, in the lower crust, the immense temperature and pressure make the rock ductile and they are deformed without fracture) which was not reported earlier because of poor reporting or survey of the area before the tunnel construction was undertaken. Second, the use of explosives for tunneling may be the reason for the incident. Tunneling is undertaken globally with the help of efficient technology and safety protocols; however, cost constraints may have led to the extensive use of explosives, thus causing such incidents.

The establishment of hydropower projects in hilly regions along perennial rivers also proves hazardous. In 2010, the government cancelled three hydropower projects along the Bhagirathi River and declared the zone a Bhagirathi eco-zone, thus preventing this iconic river from being irreversibly disfigured. The absurd sanctioning of hydropower projects without proper planning shows the absence of political accountability during these natural disasters.

Conclusion

All of the discussions so far have boiled down to a fundamental difference in vision. On the one hand, the government and public greed brightened up on the idea of a tourist packed, noisy, racy, concretized, and crowded Himalayas. On the other hand, the emphasis is on quieter, stable Himalayas, muck-free rivers, locally preserved culture, regulated tourism, and a well-preserved natural

habitat. Building infrastructure in the Himalayan region requires thorough and judicious planning that should be far sighted and cautious. Repeated flouting of laws by ignoring checks and balances may result in repeated disasters.

We must understand that we cannot formulate policies that systematically destroy the environment or talk about sustainability. We cannot permit large-scale destruction and, simultaneously, order carrying capacity studies. Wisdom does not permit destabilization of the ground under one's feet and speaking of national security.

Recommendation

1. The decision to widen roads in hilly regions should be made judiciously after assessing the vulnerability of an area to landslides.
2. Efforts should be made to check the flow of debris due to landslides caused by the construction of protective walls.
3. The ecological fragility of mountainous areas should be considered before planning for urban growth and newer settlements. Unmanaged and unchecked urban growth is not permitted.
4. Municipal byelaws must provide for construction activity to be banned in areas that fall in the hazard zone or adjacent to rivers and springs. In many cases, these provisions exist in the byelaws, but have not been properly enforced. Thus, there must be a zero-tolerance policy to address these issues.
5. An effective garbage disposal plan should be formulated to make these regions free of biodegradable garbage.
6. Although the economy of hilly regions depends to a large extent on tourist inflow, keeping in mind the recent catastrophe, the floating population of tourists needs to be checked, as has been done in the case of Char Dham Yatra in Uttarakhand.

7. An early warning system should be installed in these hilly regions and at the same time regular public preparedness drills should be held. There is no such system for earthquake prediction. Areas susceptible to possible landslides can be identified, and people residing in such areas can be warned in advance of any possible disaster by constant monitoring of such areas based on weather forecasting, so that loss of life and property can be reduced.

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THE ROLE OF MEDIEVAL AND PRE-INDEPENDENCE ASSAMESE DRAMA IN ESTABLISHING INTEGRITY AND INFUSING ASSAMESE SOCIETY WITH THE SPIRIT OF NATIONALISM

Bibha Devi

Abstract

Assamese dramas at various stages have proven instrumental in establishing social integrity and generating national feelings among the masses. One important literary cannon in the genre of drama is the play known as the ankiya naat of the medieval era. Srimanta Sankaradeva, the most significant propagator of the Bhakti movement in Assam during 15 to 16th century and social reformer was also a leading playwright who introduced this genre in Assamese literature. He wrote plays in a literary language known as the Brajavali. These plays were called ankiya naat, one-act plays, and their performance is known as bhaona. Moreover, he left an extensive literary legacy of transcreated scriptures. Through his plays and the stagecrafts that were being applied in Bhaona, he attempted to impart value education to the illiterate audience. Bhaonas also served various other purposes, such as bringing social integrity into

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an erstwhile caste-based society. In Bhaonas, everyone could participate despite their caste, creed, and religion. This was an innovative and revolutionary step at that time. Srimanta Sankaradeva had to face the consequences of his audacity. Similarly, the drama of the pre-independence period of Assamese literature also manifests a tendency to arouse the spirit of nationalism among the audience. The plays written by Padmanath Gohain Baruah and Lakshminath Bezbaroa, to name a few, aimed to generate a spirit of patriotism and nationalism. The current study analyzes the plays of Srimanta Sankaradeva and the dramatists of the pre-independence period of Assamese literature. This study analyzes the ankiya naats written by Srimanta Sankaradeva and plays written by other Assamese playwrights of the pre-independence period as primary data, and studies relevant literature on these works to obtain comprehensive knowledge. Secondary data sources were used in this study. This study applied a descriptive analytical methodology.

Keywords: Nationalism, Integration, Drama, Assamese Literature

Introduction

Nationalism is usually related to modern society. However, nationalism or a similar sentiment can also be perceived in India before the modern concept of nationalism developed. This paper provides some insight from the medieval era and the colonial period to see how the sentiment of nationalism existed in the pre-nation era, how it developed in the modern period, and how this sentiment influenced the masses.

The scope of this paper is limited to the cultural nationalist aspect of the broader concept of nationalism. It examines how drama, as a literary form, plays an important role in developing the sentiment of cultural nationalism, which in turn reconstructs a more integrated society. The

paper is limited to Assamese dramas of the medieval and pre-independence periods.

Before proceeding, it is necessary to define the concepts of nationalism and cultural nationalism. It is also important to evaluate the relevance of cultural nationalism during the medieval period.

The Medieval period of history was marked by three significant processes. According to B D Chattopadhyaya, three important processes that influence Indian history are, first, the formation and development of local states; second, the formation of castes and peasantisation of tribes; and third, the acceptance and integration of different religious and cultural practices. Assamese society also underwent these processes. During the time of Sankaradeva, the land of Assam was divided among various tribes and communities such as the Bhuyans, Ahoms, Koches, Kacharis, Jayantias, Chutias, and Nagas.

The feudal system was formed during the medieval period. Landholders have emerged as social groups. The Bhuyans of Assam are landholders.

Sankaradeva was the first Assamese to enlighten the masses of Assam with the message of the Bhakti cult. To make it easier for the common people to grasp, he primarily used the local language, Assamese, in addition to a literary language, Brajavali, instead of Sanskrit in his works.

The Medieval Assam witnessed internal power struggles within the Ahom Kingdom and frequent dynastic conflicts. This made the land vulnerable to invasion and internal disorder. Frequent tribal conflicts over territory and resources further aggravate these challenges. Furthermore, Assam is susceptible to natural disasters, such as floods. Heavy taxation on peasants added to people's misery. In addition, Assamese society during medieval times reflected predominant social stratification and inequality, typical of medieval India. Society was marked by rigorous caste and

class divisions, which restricted social mobility and created significant discrepancies in opportunity and resource availability.

At the same time, Hinduism was introduced in Assam alongside indigenous beliefs, which occasionally led to clashes between cultures and religions. By promoting a unified religious and cultural identity, Sankaradeva's Vaishnavite movement sought to diminish these challenges. However, the complete integration of religious beliefs remains an unceasing challenge. This suggests the complex cultural background and religious undercurrents of the era.

In medieval India, there has been a strong effort to promote and maintain local languages, customs, religious rituals, and civilizations. This is the hallmark of cultural nationalism. Around this time, the Bhakti movement—a devotional movement that emphasizes individual devotion to a deity over ceremonial practices—began to take shape. It lasted from the 7th to the 17th century. Poets and saints, such as Tulsidas, Kabir, and Mirabai, were instrumental in this movement and conveyed their ideas through regional dialects. This greatly aided the promotion of regional languages and cultural identities, in addition to making religious teachings more approachable for the general public.

In addition, there was a noticeable trend away from Sanskrit as the primary literary language during the medieval era toward the usage of regional languages. This change was crucial in maintaining and promoting literary output and was added to the region's complex tapestry of regional identities and customs.

The current study first attempts to analyze the ankiya naats written by Sankaradeva during the medieval period and to evaluate their contribution to social integration and the development of nationalism. This study evaluates plays on the basis of performance theory.

Next, it analyzes and evaluates plays from the pre-independence period, from the same perspective. The plays written by Padmanath Gohaini Baruah and Lakshminath Bezbaroa, to name a few, aimed to generate a spirit of patriotism and nationalism.

Objectives of the study:

The objectives of this study are as follows:

1. Evaluate the role of medieval drama, especially, ankiya naats in the formation of cultural nationalism in Assam
2. Assess the role of Assamese drama of the pre-independence period in infusing the masses with the spirit of nationalism

Literature Review

A comprehensive review of the literature was conducted to identify this research gap. The most important and relevant literature is reviewed below:

In her research paper “Assamese Dramatic Movement and Srimanta Sankaradeva,” Preeti Rekha Dutta (Dutta,2023) provides insightful perspectives that show the historical importance and artistic significance of Srimanta Sankaradeva’s contributions to Assamese theatre as well as his influence on that region’s theatric accommodation. Dutta’s review captures Sankaradeva’s works’ depth in themes, their cultural intricacies, and continued relevance, thus providing an all-round comprehension of him.

In the work of N. Tamna Singha (2020) “Sankardev: Livelihood And The Progress Of Humankind” is a profound exploration of Shankara’s efforts to promote the meaningful and dignified survival of his society, which is deeply rooted in spirituality. The author carefully inspects Shankara’s religious teachings foundation with an emphasis on egalitarianism and concern for the illiterate, destitute, and vulnerable within society.

Uttam Kr Pegu (2021), in his article titled “Political Rhetorics and Historical Imagination of Assamese Nationalism,” has tried to explore the discourses and narratives that have contributed to shaping Assamese national identity. His work highlights the process of how political rhetoric was used to construct and modify historical narratives to serve nationalist agendas. His work portrays the dynamics of nationalism in Assam vividly.

“Drama and Society: Reflection of Medieval Assamese Society in Ankia Bhaona” (Hazarika & Goswami, 2019) delves deep into how drama in medieval Assam is depicted through performances in Ankia Bhaona. Hazarika and Goswami have uncovered various layers of societal norms, cultural values, and historical contexts embedded in Ankia Bhaona, which have depicted it as a reflection of the times.

Mohammad Rezaul Karim’s in his work titled ““Medieval European Dramas and Ankiya Nats (One-Act Plays) of Srimanta Sankardeva in Assamese Literature: A Comparative Study” (Karim, 2022) has made a comparative analysis between the Ankiya-Nats of Srimanta Sankardev and medieval European dramas. Mohammad Karim in his study has taken into account the structural ,thematic, , and cultural aspects of the dramatic traditions. This work is a great masterpiece for comprehending Assamese literature and dramatic art.

From the above review, it has been observed that few studies have been conducted on the role of medieval and pre-independence Assamese dramas in establishing integrity and infusing Assamese society with the spirit of nationalism, based on the combined perspectives of cultural nationalism and the theory of performance.

Methodology

This study is based on an extensive investigation of ankiya naats written by Sankaradeva and translated into English. In

addition, it selects the plays of the pre-independence period. It evaluates and analyzes these plays from the perspective of performance theory and cultural nationalism to see their contribution to establishing social integrity and infusing Assamese society with the spirit of nationalism.

Theoretical orientation

The current study borrows insights from theories of nationalism, cultural nationalism, and performance.

Nationalism

Nationalism is political or social allegiance anchored mainly on a nation, which, at a certain point in time in history, shares a common cultural, linguistic, historical, and ethnic identity. Some scholars believe that nationalism emerged and evolved in the historical context of the nineteenth century, the period of feudal breakdown and the preliminary stages of shaping modern state systems. Such national characters are termed as ‘imagined communities,’ as Benedict Anderson has suggested; however, although the faces of the majority of the members of even the smallest nation will never come into sight one with the other, all of them are going to have the picture of this fellowship in their minds. This religion or belief system within a given community of a nation produces nationalism.

In the context of India, the term cultural nationalism denotes the advancement and fortification of cultural identities that were prevalent at the local level, while simultaneously promoting and preserving heritage within the broader framework of the nation-state. Cultural nationalism highlights certain elements that are regarded as significant and fundamental constituents of national identity. These are the regional languages, traditions, and customs. In the modern context, it has been observed that this form of nationalism usually emerges as a reaction to threats observed from globalization or external cultural influences,

which reinforces a sense of belonging and harmony among diverse communities. During pre-independence, cultural nationalism was demonstrated in various forms, such as the promotion of regional languages and the revival of traditional art forms. One remarkable case is that of the Bhakti and Bhakti movements, which advocated devotion to a single deity and the use of local languages for religious and literary purposes. This movement nurtured a shared cultural identity across different regions (Kaviraj 1992). Citation: Kaviraj, S. (1992). *Imaginary Institutions of India*. In P. Chatterjee (Ed.) *The Nation and Its Fragments: Colonial and Postcolonial Histories* (pp. 85-126).

The main argument in Kiki Gounaridou's "Staging Nationalism" (2005) revolves around the intersection of theater and nationalism, particularly in the context of modern European theater. Gounaridou explored how theatrical performances can serve as a platform for the expression and construction of national identity, often intersecting political agendas and historical narratives.

The book delves into various aspects of this relationship, such as how nationalistic themes are portrayed on stage, the role of playwrights and directors in shaping national narratives, and the impact of these theatrical representations on audiences' perceptions of their identity and history. Gounaridou discusses how theater can be a powerful tool for promoting and challenging nationalist ideologies, highlighting the complexities and nuances involved in this dynamic.

Overall, the main argument in "Staging Nationalism" is a detailed exploration of how theater contributes to the discourse on nationalism, offering insights into how performance shapes and reflects societal attitudes towards nationhood and belonging.

In connection with the notion of cultural nationalism discussed in the previous paragraph, some plays and their

performances have been analyzed based on performance theory.

In medieval India, cultural nationalism had several effects and was a major factor in the preservation of local culture. This effort was essential for preventing dominant cultural influences from overshadowing local languages, customs, and practices. Cultural nationalism has preserved the diversity and vibrancy of Indian culture by highlighting and appreciating regional heritage.

Cultural nationalism also plays a significant role in encouraging societal cohesiveness. A more cohesive and unified society was promoted by the medieval period's prominent people and groups who also implemented social reforms and promoted local identities. By dealing with social challenges and fostering a feeling of community, these endeavors enhanced and reinforced the social fabric.

In addition, the medieval era's cultural nationalism established a crucial basis for the emergence of contemporary nationalist groups. The greater Indian nationalist struggle against colonial rule was made possible by the period's emphasis on regional pride and identity. The principles and emotions fostered by medieval cultural nationalism served as the foundation for the collective identity and unity that propelled the independence movement in the succeeding ages.

Hence, the preservation of regional cultures in medieval India was considerably influenced by cultural nationalism. This effort was essential for preventing dominant cultural influences from overshadowing local languages, customs, and practices. The emotion of cultural nationalism helped preserve the rich cultural kaleidoscope, which emphasized and celebrated local heritage while ensuring the survival and vibrancy of varied cultural identities throughout India.

Cultural nationalism has reinforced social harmony. A more cohesive and unified society was promoted by the

medieval period's prominent people and groups who also implemented social reforms and promoted local identities. These initiatives have improved the general social fabric and lessened internal disputes by integrating various social groupings and fostering a sense of community.

In addition, the rise of contemporary nationalist movements was greatly aided by cultural nationalism in the medieval era. As mentioned above, medieval cultural nationalism was a vital forerunner of contemporary Indian nationalism because ideals and sentiments fostered a foundation for the collective identity and solidarity that subsequently drove the movement for Indian independence.

Performance Theory

Performance theory is, more generally, an area of study that has expanded to examine the way performance functions in a wide range of fields. It is concerned with the way we perform, not just on stage, but in our daily lives, in the quotidian dramas of everyday life.

Performance can also be a form of representation when we explore how plays, ritual conduct, and even interactions in our day-to-day lives reflect back and change courses of social, cultural, and political concerns. Performance can critique and complicate existing ideologies, and it can shore up normative values or even legitimize the status quo. Some performance theorists have examined the anthropology of rituals and rites of passage to understand how performances build relations between people within specific communities, how they transmit memory, or how they demarcate moments of passage and milestones in our lives.

Performance theory considers how written text is realized through performance. Scholars have paid attention to the dialogue between the script and the various anonymous or collaborative choices that actors, directors, and designers make to create meaning. Indeed, elements that remain

implicit are crucial to the audience's experience and understanding performance. Subtext, or the emotion and intention behind gestures and facial expressions, is the key concept. Moreover, the physicality of delivery, the tone and volume of a voice, how a person moves or moves or leans their heads, even the clothes they wear, the props in their hands, and so on.

Discussion

The plays written by Sankaradeva were pioneers in developing a sense of cultural nationalism among the Assamese people and, thereby, in developing social integration. These plays are remarkable because they were the first plays written in a regional language. Assamese dramas played a similar role again during the pre-independence period by increasing the fervor of nationalism among the masses. In this section, some select plays from the Sankari and Pre-independence periods of Assamese literature that successfully delivered the message of social integration and nationalistic feelings have been analyzed based on their subtext and delivery.

Medieval drama:

Therefore, 'Parijat Harana,' instituted by Sankaradeva, is not a story or tale in its strictest sense alone. It is a multifaceted spectacle charged with various contextual referents. The play contains, in a way, the philosophical inclination of metaphysical search for truth as well as devotion, and the characters along with the Parijat tree are the embodiment of those aspects. It also subliminally condemns the Varna or caste system; this is a clear representation of the Bhakti movement that called for the abolition of the caste system. This is so because the experiences as well as the decisions made by the characters reflect on the life lessons; one is able to grasp from the play, such as ethical behavior, humility, and enmity. Other aspects of artistic pencil, such as costume,

make-up, colorful, and appropriate lighting, enhance the play's moral and spiritual themes, thus turning it into an experience that is engaging and meaningful.

“Kali Damana,” a play by Srimanta Sankardev, is renowned for its rich subtext and dynamic delivery, conveying deep spiritual, moral, and social messages. The subtext reveals a spiritual victory over evil, with the demon Kali symbolizing moral decay and his defeat representing a triumph of righteousness through divine intervention. This play underscores the importance of living a virtuous life and the power of devotion in overcoming challenges. In addition, it offers a critique of societal corruption and promotes social harmony and unity. The delivery of the play is marked by expressive acting, with actors using exaggerated expressions and gestures and a blend of prose and verse that enhances storytelling. Music and dance play a crucial role, with devotional songs enriching the spiritual atmosphere and symbolic dance movements that represent the battles between good and evil. Visual elements such as traditional costumes, symbolic props, and simple yet effective stage designs focus on the audience's attention to the actors, enhancing the narrative's impact and subtext's depth.

“Patni-Prasada,” a play by Srimanta Sankardev, is rich in subtext and employs dynamic delivery to convey its themes. This subtext highlights devotion and loyalty through Satyabhama's unwavering faith in Lord Krishna, symbolizing spiritual devotion as a path to divine grace. It also addresses gender roles and empowerment, portraying Satyabhama's assertiveness and moral virtues and challenging traditional gender norms. Additionally, the play offers social commentary critiquing materialism and promotes the values of love, respect, and social harmony. Performance style features expressive actions with exaggerated gestures and facial expressions, enhancing emotional and moral nuances. The narrative is enriched with a blend of prose, poetry,

and song, making it more engaging. Music and dance, particularly Borgeets (devotional songs) and symbolic dance movements, deepen the spiritual atmosphere and add a dynamic layer to storytelling. Visual elements, including traditional costumes, props, and minimalist stage design, focus attention on the actors and narrative, ensuring that the subtext is clearly communicated and visually appealing.

“Keli-Gopala,” an Ankiya Nat play by Srimanta Sankardev, vividly portrays the playful and divine acts of Lord Krishna, using rich subtext and dynamic delivery to convey its themes. The subtext emphasizes divine play (Lila), where Krishna’s playful acts symbolize divine playfulness and make the divine accessible to common people, offering spiritual lessons on devotion, humility, and the joy of divine love. The play also underscores moral and ethical values, highlighting righteousness, virtue, devotion, and faith as paths toward spiritual enlightenment. Social commentary critiques societal hierarchies, promotes equality before God, and underscores the value of humility by humbling characters exhibiting arrogance or ego. The delivery of play involves expressive acting with exaggerated expressions and gestures to convey the profound nature of Krishna’s actions. Narrative techniques that incorporate prose, poetry, and songs create rich and engaging narratives. Music and dance, particularly devotional songs (Borgeets) and symbolic dance movements, add spiritual dimensions and layers of meaning to performance. Traditional costumes, props, and simple yet effective stage designs enhance visual storytelling and focus attention on the actors, ensuring clear communication of the subtext.

“Rukmini Harana,” a significant play by Srimanta Sankardev, explores the abduction of Rukmini by Lord Krishna, utilizing rich subtext and dynamic delivery techniques. The subtext delves into themes of divine love and devotion, with Rukmini’s unwavering devotion

symbolizing the soul's longing for union with the divine and abduction representing spiritual liberation. The play emphasizes moral and ethical values, showcasing Rukmini's courage and determination to seek Krishna's help and highlighting the triumph of righteousness over rigid societal norms. It also offers social commentary and critiques arranged marriages devoid of mutual consent and advocates for the empowerment and agency of women through Rukmini's proactive role. The delivery of the play is marked by expressive acting with vivid expressions and dramatic gestures to highlight the emotional intensity and moral dilemmas. Narrative techniques blend prose and verse with musical interludes to create an engaging rhythm. Music and dance, particularly devotional songs (Borgeets) and symbolic dance sequences, reinforce spiritual and emotional themes. Traditional costumes and symbolic props, such as Krishna's flute and Rukmini's bridal attire, enhance visual storytelling, while effective stage design and minimalistic props focus attention on actors, ensuring clear communication of the subtext.

"Sri Rama-Vijaya Nata," composed by Srimanta Sankardev, is an Ankiya Nat that vividly portrays the triumphs and virtues of Lord Rama. The subtext of the play revolves around divine justice and dharma, with Lord Rama depicted as the ideal king who upholds the moral order. His victory over Ravana symbolizes the triumph of good over evil and the eradication of adharma (unrighteousness). The play highlights moral and ethical values, showcasing characters such as Sita, Lakshmana, and Hanuman, who embody loyalty and devotion, underscoring these virtues as essential for societal harmony. It also emphasizes the importance of personal sacrifice and duty to the greater good, as seen in Rama's exile and Sita's trials. The play offers social commentary on gender roles and respect, portraying Sita's purity and strength, challenging traditional gender norms, and advocating respect and honor for women. Collaboration

between various characters to defeat Ravana symbolizes the importance of unity and collective effort in overcoming challenges.

The delivery of “Sri Rama-Vijaya Nata” features expressive acting, with actors using exaggerated expressions and gestures to highlight the emotional and moral dilemmas of the characters, enhancing the dramatic impact. The play utilizes a mix of prose, poetry, and songs to create a rhythmic and engaging storytelling experience. Music and dance play a crucial role, with the incorporation of Borgeets adding a spiritual dimension to performance and reinforcing the themes of devotion and righteousness. Symbolic dance movements represent internal and external battles, adding a dynamic layer to the narrative and illustrating characters’ emotions and struggles. Traditional costumes and symbolic props, such as Rama’s bow and Sita’s veil, enhance visual storytelling and character representations. The minimalist yet effective stage design focuses on actors and their movements, ensuring that the subtext is communicated clearly.

Assamese plays from the pre-independence era.

From the pre-independence period, the play, “Jaymati (1900),” Padmanath Gohain Barua, fully portrayed sacrifices and loyalty through the character of Jaymati. The sacrifice she made for her husband and her kingdom portrayed devotion and selflessness. This serves as a mirror to show us the importance of sacrifices for the good; people should contemplate their roles in contributing to their country’s well-being. Moreover, it also criticizes bad rulers by showing Jaymati’s tale as a clarion call to resist tyranny.

In addition, Padmanath Gohain Baruah’s play “Gadadhar,” published in 1907, addresses the themes of duty, moral struggle, and the tension between personal desires and societal expectations. The play’s subtext brings to light the deep sense of duty and the load of the responsibilities that

the protagonist shoulders. He does not put aside his personal desires. The delivery of lines and actions in “Gadadhar” plays a key role in conveying the subtext and adds to the emotional depth of play. Tone and emotion in the delivery of dialogues are essential in presenting Gadadhar’s moments of contemplation, determination, and struggle. Body language and gestures were used to prompt the subtext by replicating Gadadhar’s inner turmoil and determination. The pace of dialogue delivery and the way pauses are used further signify the moments of introspection.

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The delivery of lines and actions in “Gadadhar” is very important in showing the inner feelings, and it affects the audience emotionally. There must be an accurate tone and mood in the speaking of Gadadhar’s lines to show his determining points and time of thinking inwardly when fighting against difficulties. When maintaining elements such as gestures, body language behaves in the play, reflecting that Gadadhar was also struggling with something deep inside himself. In addition, it is by the speed of speaking and the use of silent moments that directors show moments of grief, pain, and hesitation.

After Padmanath Gohain Barua’s plays, Lakshminath Bezbaroa’s plays must be referenced. In his play, “Chakradhwaj Singha, ” the subtext of the play is used in a very powerful manner to portray a much more sizable message, which discusses patriotism, resistance, unity, leadership, and pride of the culture. The character Chakradhwaj Singha un-knowingly glorifies nationalism and the defence of ‘Mother India’ against Mughals. If we

focus on the subtext, one can notice that it reiterates its importance for the people in Assam to be united, hence being defensive so that they can protect their territory in a way that shows the need for authority figures and cooperation. However, an even more troubling level of subtext addressing contemporary issues is the question of Assamese nationality and culture, which, according to Bezbaroa, has been overshadowed and diluted by dominant Bengali culture. The reclamation of Assamese identity and its folk culture is relevant to contemporary movements for national identity and cultural revivals. Additionally, the elements that belong to the area of communication, that is, dialogues, monologues, and dramatical actions, also contribute to the subtext as is staged, for example, by Bezbaroa. Realistic dialogues involve the historical facts and emotions of the characters, while soliloquies often give insights into the character's greatest fears and ambitions, for example, Chakradhwaj Singha's devotion to liberating his people.

In Lakshminath Bezbaroa's play "Joymoti Konwari," (1915) subtext is used to enrich the narrative with deeper themes of sacrifice, loyalty, feminine strength, resilience, and resistance to oppression. Joymoti's refusal to reveal her husband's location despite extreme suffering underscores her selfless service to her country, aligning with nationalist movements that value personal sacrifice for the greater good. Her endurance through pain highlights her inner strength, challenging traditional gender norms and asserting women's roles as moral and ethical pillars in society. The play also portrays the Ahom kingdom's struggle against internal and external betrayals, with subtextual undertones emphasizing resistance to oppression and the importance of defying authority. The delivery of "Joymoti Konwari" is crucial for conveying these themes effectively. Bezbaroa's dialogues are crafted with a historical context and emotional intensity, requiring actors to portray Joymoti's suffering and conviction to reveal the subtext of resilience and sacrifice.

Her soliloquies provide insight into her inner conflicts and unwavering determination, demanding a nuanced performance that captures her emotional struggles and strengths. Physical actions and stage directions, particularly during torture scenes, are essential for illustrating the themes of oppression and resilience, with actors' expressions and body language emphasizing the psychological and physical toll of Joymoti's ordeal. Additionally, the play employs symbolism and metaphors, with Joymoti representing loyalty, purity, and selflessness, and her suffering serving as an allegory for the costs of integrity and freedom. These symbolic elements require subtle performances to convey their deeper significance to the audience. In another play of Lakshminath Bezbaroa, "Badan Barphukan," when one watches the play, one can understand what is behind the play and what can summarize the much deeper story and characters of the play. Nationalism and the spirit of revolt are well illustrated in Badan Barphukan's action and general fight against internal and external threats; thus, the movie reinforces the notion of oneness and too bad that to protect it, there are many concessions that one has to make. It is a musical and vocal performance that plays an effective role in transmitting the themes and sentiments of the play in the light of its delivery of "Badan Barphukan." The author writes dialogues that demand a performance that imitates carefully selected words of political decisions that, at the same time, contain subtexts of worries and ambitions. Soliloquies and monologues Another element of performance that should be acted out convincingly is the inner conflict of the hero, as well as the significance of choices made by a character such as Badan Barphukan. The stage movements and interactions that constitute the play and physical actions and relations during the play require effective choreography to reflect mastery and subordination, alliances, and rivalry at the performances. This is a work of symbolism and metaphors, like Badan Barphukan, representing challenges and burdens

of leadership imposition on actors to enrich performances with knowledge of this aspect and to make the audience understand what is being depicted there. Situational hints enhance the original storyline in the play “Piyoli Phuka” written by Lakshminath Bezbaroa as it questions and empower the audiences with preoccupied relations between gender equality, social status, moral absolutes, and nationalism and identity politics. The play also underlines how difficult life was for women who were in official capacity and the repression they had to suffer through the character depiction of Piyoli Phukan. It explores issues obscured in ethical dilemmas while highlighting characters such as Piyoli Phukan, who must follow complicated moral issues and the outcomes of her decisions. The analysis shows that there are many underlying themes that focus on nationalism and heritage, with themes of identity and the characters’ responsibility to defend and uphold their culture explored through both internal conflict and struggles against other nations. In the delivery of “Piyoli Phukan,” there is a very serious body action to capture the spirit or meaning behind the poem perfectly. The conversations and monologues written by Bezbaroa brought out depths of characters, their feelings, and their emotions, and the actors explored everything from rebelliousness and self-assertiveness to fear and confusion. Verbally unexpressed and written human activities contribute to a user’s conversation, signifying control and attitude and saying more than words, making them complex and requiring high accuracy. Props, including costumes and sets, create historical grounding that captures the audiences of settings and portrayals of the characters’ glory, social relevance, or cultural heritage. The use of symbols and metaphors contributes to the value of messages by adding layers and motifs, calling for close adherence to specific approaches in terms of providing components of symbolism that would be easily understood by viewers. In Lakshminath Bezbaroa play “Sonit Kuwari,” subtext becomes

evident to address gender roles and societal expectations of women and the struggle between women and tradition versus Women and modernity. In the living is easy, there is a debate on the issue of aspiration in society by presenting a character in Sonit Kuwari, the struggling heroine caught between individual freedom in exercising her rights by practising individual freedom to engage in premarital sex and other aspirations, and the general expectation of society that forces her to succumb to pressure and give in to their demands. It also explores the roles and relations of power operating in both family and other collective settings, focusing on issues of agency and moral responsibility, burdened family relationships, and the search for individual freedom.

Conclusion:

Assamese dramas have played a theoretical role in fostering cultural nationalism since the medieval and pre-independence periods. Symbolic “Ankiya Naatas” of Sankaradeva, for example, like Parijat Harana, propagated social harmony and ethical values but indirectly criticized casteism and empowered women, reflecting the Bhakti movement. Later dramatists like Padmanath Gohain Barua and Lakshminath Bezbaroa directly handled themes concerned with national awakening and resistance in plays like Bharat Surya. Historically, evocative settings, evocative performances, and subtexts have been used to carry powerful nationalistic messages during years that most called for unity. Bringing forth a celebration of heritage and social critique helped to forge an Assamese identity in support of the more significant Indian movement.

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MILLETS FOR SUSTAINABLE AGRICULTURE AND NUTRITIONAL SECURITY: AN EVALUATION OF INDIA'S ROLE AND PERFORMANCE IN AMRIT KAAL

Jomon Mathew

Abstract

Millets, recognized as ‘superfoods’ and ‘crops of the future,’ play a pivotal role in promoting sustainable agriculture and ensuring nutritional security. This study evaluates India’s role and performance in millet cultivation and production during the Amrit Kaal era. Utilizing secondary data from authoritative sources, the research employs statistical analyses to examine trends in millet cultivation area, production volume, and productivity. The global millet market reached USD 11.02 billion in 2023, with India contributing 41% of the total output. However, the study reveals a concerning decline in both the cultivated area and millet production in India over the past six decades. Despite these challenges, millets offer exceptional nutritional value, providing essential vitamins, minerals, and dietary fiber. Their cultivation contributes to climate change mitigation and adaptation, as they thrive under adverse conditions

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and require minimal external inputs. The study emphasizes the urgent need to prioritize and strengthen efforts to boost millet production in India. Policy recommendations include targeted interventions, such as improved seed distribution, efficient irrigation techniques, and educational programs for farmers. Raising awareness of the economic and nutritional benefits of millet cultivation could revitalize its status as a viable and sustainable crop choice. India must innovate and implement strategic initiatives to foster a prosperous and sustainable agricultural future, leveraging the inherent qualities of millets to ensure nutritional security and resilience to climate change.

Keywords: Millets, Sustainable agriculture, Nutritional security, India, Production trends

Introduction

Agriculture plays a pivotal role in global economies, and its significance is gauged through key metrics, such as GDP contribution, employment generation, and influence on international trade. This primary sector not only directly impacts economic output, but also establishes critical interconnections with other sectors, highlighting its importance in livelihoods, food security, and nutritional well-being. As India entered the Amrit Kaal era, it became increasingly important to evaluate the agricultural sector's growth path and performance. Over the 75 years since independence, India's agriculture has undergone transformative phases characterized by revolutionary changes and significant milestones. These milestones have not only enhanced productivity but have also influenced broader socio-economic dynamics. Among the numerous important crops in India, millet has received considerable attention relative to major cereals. Saleh et al. (2013) emphasize their agricultural benefits, highlighting millets' superior nutrient profiles rich in amino acids, minerals, antioxidants, and other constituents, surpassing

staple cereals like rice and wheat. These small-seeded, drought-resistant grains are cultivated globally alongside rice and wheat but offer higher nutritional value in terms of proteins, minerals, and vitamins. Their resilience presents a distinctive perspective in agricultural economics.

Millets, acknowledged as ‘superfoods,’ have a substantial potential to advance sustainable agriculture and contribute to global health improvements. They offer superior nutritional content compared to carbohydrate-dominant staples, such as rice and wheat, thereby proving effective in combating malnutrition and addressing micronutrient deficiencies. Given that 828 million people worldwide suffer from hunger, integrating millet into diets could play a crucial role in tackling food and nutritional security challenges. Furthermore, promoting both the cultivation and consumption of millet aligns with the achievement of Sustainable Development Goals (SDGs), particularly those related to poverty alleviation, hunger eradication, and promoting good health and well-being. India’s initiatives in this realm culminated in the UN General Assembly, designating 2023 as the International Year of Millets, underscoring their pivotal role in fostering sustainable development and enhancing global public health.

Despite the numerous inherent advantages of millets, their promotion and cultivation have been marginalized because of the predominant focus on cash crops, such as wheat, leading to significant shifts in dietary preferences and a decreased prioritization of millets. Once stigmatized as ‘poor man’s food,’ millets are now increasingly recognized for their expanding role and beneficial attributes. This paper aims to emphasize the importance of millets through two specific objectives: (i) providing an overview of the market size and production trends of millets, and (ii) examining their significance in ensuring nutritional security and promoting sustainable agriculture

Review of literature

Research has highlighted several challenges and instabilities in the global millet economy, including low production rates, processing complexities, and limited consumer popularity (Karthikeyan, 2017). Despite these obstacles, millet plays a crucial role in combating lifestyle diseases, as supported by medical research (Luchini et al., 2017; Shivran, 2016). Varieties such as finger millet and Kodo millet thrive under diverse soil and climatic conditions, accommodating both irrigated and rain-fed cropping systems (Trivedi et al., 2022). Additionally, millets serve as dependable 'famine reserves' because of their prolonged shelf-life under proper storage conditions (Eswaran et al., 2001). Despite being recognized for enhancing food security, promoting sustainable agriculture, and fostering economic development, further comprehensive studies are needed to fully comprehend the intricacies of millet production dynamics

Data source and methodology

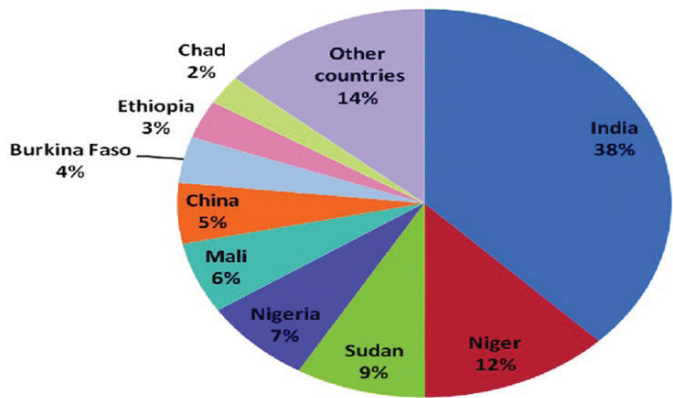
The present study utilizes secondary data obtained from authoritative sources, including the Ministry of Agriculture and Farmers' Welfare, the Directorate of Economics and Statistics, and FAOSTAT. It aims to examine trends in millet cultivation area, production volume, and productivity through statistical analyses employing methods such as averages, standard deviation (SD), and Compound Annual Growth Rate (CAGR). CAGR calculations were computed using the exponential function formula $y = ab^{te}$ to assess the longitudinal trajectory of key metrics related to millets. Taking the logarithm, it becomes $\log y = \log a + t \log b + \text{error}$, which can be written as $(Y) = \ln(b_0) + b_1 t$, where t is the time variable, Y is the variable for which the growth rate is calculated, and b_1 is the regression coefficient of t on Y .

The Compound Annual Growth Rate (CAGR) is obtained as $\text{CAGR (\%)} = (\text{Antilog } b_1 - 1) \times 100$.

1. Results and discussion

According to FAOSTAT, the analysis of millet market size and production indicates that the global market reached USD 11.02 billion in 2023. In 2021, global production totalled 30.1 million tons, with India contributing 41% of this total output. Sorghum and pearl millet together constitute nearly 90% of global millet production, followed by finger millet, foxtail millet, proso millet, barnyard millet, little millet, and kodo millet. Millets, including pearl millet and lesser millet, are cultivated in more than 93 countries worldwide.

Figure 1: Worldwide distribution of millets



Source: FAOSTAT, 2021

In India, millet is classified into major, minor, and pseudo-categories. The major millets include sorghum (jowar), Pearl Millet (Bajra), and Finger Millet (Ragi/Mandua). Minor millets include Foxtail Millet, Proso Millet, Kodo Millet, Barnyard Millet, and Little Millet. India, as the world’s largest producer of millet, fulfils approximately 10% of its food grain demand through millets. During the fiscal year

2021-22, the country exported millets valued at 64 million USD.

Table 1:
Changes (in %) in area, production and
productivity of Small Millets

Year	Percentage		
	Area	Production	Productivity
1950-51-2021-22	-90.45	-78.86	107.63
1950-51-1959-60	11.79	15.71	3.42
1960-61-1969-70	-4.48	-9.27	-4.94
1970-71-1979-80	-16.33	-28.32	-14.42
1980-81-1989-90	-32.02	-17.03	21.97
1990-91-1999-00	-42.34	-48.07	-9.88
2000-01-2009-10	-41.64	-34.92	11.65
2010-11-2019-20	-42.75	-16.06	46.29

Source: Ministry of Agriculture & Farmers Welfare, GOI

Despite the manifold benefits that millets contribute to India's national economy, there has been a noticeable decline in their cultivation. Before the Green Revolution, millets comprised approximately 40% of all the grains cultivated in India. However, this figure has dwindled to around 20% in recent years. Over the past six decades, the area dedicated to millet cultivation has decreased significantly by 62.57%, amounting to approximately 13.83 million hectares by 2019-20. Despite this reduction in cultivated areas, efforts have been directed towards maintaining production targets for all millet crops by enhancing productivity. This shift highlights the evolving agricultural landscape and strategies employed to sustain millet production amid changing agricultural practices and preferences.

**Table 2: Mean, SD and CAGR of area,
production and productivity of millets
(1950-51 to 2021-22)**

Parameters	Area	Production	Productivity
Arithmetic Mean	2947	1221	461
SD	1767.23	659.47	114..61
CAGR	-3.3	-2,2	1.05

Source: Computed from secondary data

Food and nutrition security, as defined by the World Health Organization (WHO), ensures that individuals consistently have physical, social, and economic access to food sufficient in quantity and quality to meet their dietary needs and preferences. This access is supported by adequate sanitation, health services, and care, thereby promoting a healthy and active life. According to the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), millet serves as a staple food for over 90 million people in Africa and Asia. Millets are recognized for their exceptional nutritional value, providing vitamins, minerals, dietary fiber, and other essential nutrients, as emphasized by the Indian Institute of Millet Research (IIMR). Compared to wheat and rice, millets offer a significantly higher nutritional content, being three to five times more nutritious. The consumption of millet has been associated with benefits such as weight management and reduced risk of conditions such as hypertension, highlighting its role in promoting health and combating diet-related ailments.

The cultivation of millet plays a crucial role in achieving sustainable agriculture, particularly in light of the projected impacts of climate change. Global mean annual temperatures are expected to rise by 3°C by the end of the twenty-first century, accompanied by significant reductions in both the frequency and volume of rainfall, and a doubling of

atmospheric CO2 levels from 2025 to 2070. These changes have resulted in decreased yields of the major staple cereals worldwide. Millets, often termed as ‘miracle grains’ or ‘crops of the future,’ thrive under adverse conditions and possess inherent drought resistance, requiring minimal external inputs. Their cultivation contributes to climate change mitigation by lowering atmospheric CO2 levels and reducing reliance on chemical fertilizers. Moreover, millets are highly water-efficient, utilizing 70% less water than rice, maturing half the time of wheat, and requiring 40% less energy for processing. These resilient crops can withstand extreme heat conditions, making them pivotal for sustainable agricultural practices aimed at adapting to and mitigating the effects of climate change.

Table 3:
Nutritional Benefits of Millets (for 100 g of each millet)

Crops	Protein (g)	Fiber (g)	Minerals (g)	Iron (mg)	Calcium (mg)
Sorghum	10	4	1.6	2.6	54
Pearl millet	10.6	1.3	2.3	16.9	38
Finger millet	7.3	3.6	2.7	3.9	344
Foxtail millet	12.3	8	3.3	2.8	31
Proso millet	12.5	2.2	1.9	0.8	14
Kodo millet	8.3	9	2.6	0.5	27
Little millet	7.7	7.6	1.5	9.3	17
Barnyard millet	11.2	10.1	4.4	15.2	11
Teff	13	8	0.85	7.6	180
Fonio	11	11.3	5.31	84.8	18
Brown top millet	11.5	12.5	4.2	0.65	0.01

Source: Indian Institute of Millet Research

Conclusion

The current study, based on secondary data sources, highlights a concerning decline in both the cultivated area and millet production in India. Despite these challenges, the analysis emphasizes the critical role of millet in ensuring food security and promoting sustainable farming practices. With increased global attention on millet by 2023, there is an urgent need to prioritize and strengthen efforts to boost

millet production. Institutions such as the Indian Institute of Millets Research (IIMR) are encouraged to develop comprehensive strategies focused on enhancing production, increasing popularity, and adding value to millets. Policy recommendations include targeted interventions, such as the distribution of improved seeds, the adoption of efficient irrigation techniques, and educational programs for farmers aimed at enhancing the overall growth, stability, and productivity of millets. Additionally, raising farmers' awareness of the economic and nutritional benefits of millet cultivation could revitalize its status as a viable and sustainable crop choice. The underlying rationale is that millet possesses inherent qualities that ensure nutritional security and resilience to climate change, thereby supporting sustainable agricultural practices. Amidst the emerging challenges, India must innovate and implement strategic initiatives to foster a prosperous and sustainable agricultural future.

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WELLNESS TOURISM PRODUCTS AND SERVICES FOR ECONOMIC GROWTH – OPPORTUNITIES IN THE AMRIT KAAL WITH SPECIAL REFERENCE TO KERALA

Manju T.K.

Abstract

India, a diverse tourism destination with a rich cultural heritage, is an important tourist attraction in the world, significantly contributing to economic development in terms of employment, income generation, forex earnings, and livelihoods for many rural and urban populations. Tourism motivations vary according to individual, source, and destination-based attributes, necessitating the emergence of diverse niche tourism segments. Wellness tourism is an important form of tourism as it provides holistic experiences that promote tourists' well-being. Ayurveda promotes wellness by providing complete care to the body, mind, and soul, through a holistic approach. Ayurvedic health tourists spend a reasonably long time at the center to complete the therapy process, leading to longer occupancy. The first part provides a conceptual understanding of wellness and the distinction between health, medicine, and wellness tourism.

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The second part of the paper highlights Ayurveda as a wellness therapy and its various curative and rejuvenating benefits for health tourists. The third part discusses the strategic promotion of Ayurveda health tourism in India and how it creates a multiplier effect on the country's economic development.

Keywords: Health tourism, Wellness, Ayurveda, Therapies

Health, Medical and Wellness Tourism

The term tourism refers to the activities of people visiting locations and attractions for pleasure, business, health, or other reasons (Sotiriadis et al., 2016). It is distinct among businesses in that various firms work together to create experiences for guests to enjoy a specific geographic location (Baloglu et al., 2019; Cain et al., 2020; DiPietro et al., 2020; Pan et al., 2021; Remington & Kitterlin-Lynch, 2018). Health tourism is a broader term that encompasses wellness tourism and medical tourism (WTO, 2018). Improved living standards, more mobile lifestyles, and individualistic ideals related to self-care have contributed to the popularity of travel for health and wellness tourism services (Cohen, 2008; Majeed & Lu, 2017). Thus, although health-and wellness-related travel is not a new phenomenon, global trade around it has grown exponentially in recent decades (Connell, 2013; Durham & Blondell, 2017; Kaspar et al., 2019).

Medical tourism is generally defined as going to another country in search of medical interventions to cure a sickness, which is very different from how wellness tourism is perceived. The latter is seen as a holistic way of improving one's health without using medicines; it involves both the body and mind and takes place during holidays.

Mueller and Kaufmann (2001, p. 7) provided the following definition of wellness tourism: 'The sum of all the relationships and phenomena resulting from a journey and residence by people whose main motive is to preserve or

promote their health. They stay in a specialized hotel that provides appropriate professional expertise and individual care. They require a comprehensive service package comprising physical fitness/beauty care, healthy nutrition/diet, relaxation/meditation, and mental activity/ education.’ Wellness tourism is a subcategory of health tourism (Mueller & Kaufmann, 2001)

Health, Medical and Wellness Tourism in India

India is one of the oldest healthcare systems in the world and has been recorded in ancient scriptures, such as Vedas and Charak Samhita (IBEF, 2022). There is an alternate system of therapies followed in India, such as Ayurveda, Yoga, Unani, Siddha, Homeopathy. The Indian wellness industry—estimated at Rs. 49,000 crore (US\$ 6.70 billion)—is gaining momentum on the back of the government’s focus on building a healthy and fit India (IBEF, 2021). To tap this growing market and develop an alternate system of medicine, the government set up the Ministry of Ayurveda, Yoga, Unani, Siddha, and Homoeopathy) in November 2014.

India is a major attractive destination for health and wellness therapies, and many foreign tourists arrive every year to avail the diverse services available in the country (PIB, 2023). In 2021, 15.27 lakh foreign tourists arrived in the country, and the purpose of their visit is provided in Table 1. The largest share of Foreign Tourists arriving in India in 2021 is from North America, followed by South Asia and Western Europe (India Tourism Statistics, 2022).

Of the total Foreign Tourist Arrivals, 5.8 per cent came for leisure holidays and recreation, and 21.2 per cent came for medical tourism (India Tourism Statistics, 2022). Among the tourists visiting for leisure holidays and recreation purposes, Eastern Europe, Central and Southern America, and West Asia have a relatively larger share than other regions (India Tourism Statistics, 2022).

**Table 1: Region-wise FTAs in India According to Purpose
2021 (Percentage)**

Regions	Arrivals (in Nos.)	Percent Share						
		Business & Professionals	Indian Diaspora	Leisure Holiday and Recreation	Medical	Students	Others	Average Stay
North America	5,10,299	3.0	62.0	6.7	0.4	0.1	27.8	35
Central & South America	6,798	46.5	23.7	11.1	1.9	2.4	14.3	49
Western Europe	3,34,850	13.1	52.9	4.4	0.6	0.3	28.7	31
Eastern Europe	43114	45.8	9.7	16.7	17.9	1.5	8.4	25
Africa	68,914	13.7	13.2	2.1	40.0	16.1	14.9	41
West Asia	52,174	14.0	6.9	9.3	61.1	3.5	5.1	29
South Asia	3,98,722	14.0	6.7	4.4	68.4	3.4	3.0	25
East Asia	38,474	16.6	24.3	8.0	8.1	5.3	37.7	36
Australasia	33,762	88.1	4.7	1.6	0.4	1.9	3.3	63
Total	38,865	3.1	64.6	8.3	0.9	0.1	22.9	49
Not Classified Elsewhere	7	100.0	0.0	0.0	0.0	0.0	0.0	4.0
Grand Total	15,27,114	12.1	39.2	5.8	21.2	2.0	19.7	32.12

Source: India Tourism Statistics, 2022

It can be inferred from **Table 1** that South Asia, West Asia, and Africa will have a larger share of tourists visiting India for medical purposes in 2021. The average number of days stayed by tourists in India in 2021 is 32.12 days, and the highest duration of stay by Australasian tourists (63 days).

Ayurveda as wellness therapy

Ayurveda literally means “science of life.” Ayurveda treats man as a “whole” – which is a combination of body, mind and soul. It adopts a holistic approach and aims to restore and constantly maintain the body’s natural equilibrium through judicious application of herbal massages, special diets, body therapies, etc., accompanied by special diet/dietary restrictions, and appropriate rest. Treatment and medication are individualistic based on an understanding of the person’s constitution. An ideal Ayurvedic regimen should be followed for at least two three weeks. It is both curative and preventive in nature with no side effects. Ayurveda is a way of life that teaches us how to maintain and protect health.

In India, Ayurveda wellness processes are widely practiced owing to their various health benefits. The most popular among tourists is Panchakarma, a five-step procedure that rejuvenates the mind, body, and soul through Ayurvedic medicines, exercise, diet, yoga, and meditation, helping to cleanse the body and improve digestion and metabolism. Ayurveda wellness tourists travel to receive traditional health services, including curative and wellness therapies, from providers who often inherit their expertise rather than acquire formal qualifications. These health tourism destinations have existed for centuries with services closely tied to the natural environment, making it difficult to replicate elsewhere. For example, Panchakarma centers in Kerala offer authentic Ayurvedic treatments, blending modern amenities with traditional tools and ancient medicines, giving them a unique competitive advantage based on their location.

Ayurveda Health Tourism Benefits

Kerala’s tourism industry is known for its diverse offerings and blending cultural, spiritual, culinary, and

backwater attractions to create a unique visitor experience (Bandyopadhyay & Nair, 2019). Ayurveda, a key attraction in Kerala, attracts both local and international tourists seeking health and wellness benefits through therapies. Ayurvedic treatments promise rejuvenation and address chronic conditions, such as anti-aging, skin enhancement, and sexual health improvement (Baliga et al., 2015). Studies have also suggested its potential in anti-cancer treatments (Balachandran & Govindarajan, 2005), management of type 2 diabetes (Gordon et al., 2019), and assistance with learning disabilities (Alone & Bamnote, 2020).

The primary attributes of Kerala's Ayurvedic health tourism are quality of service and opportunities. Padmasani and Remya (2015) suggest a need for service providers to concentrate on an organised promotional campaign highlighting the state's service quality and available opportunities. The quality of healthcare, including doctors, nurses, and support staff, contributes to Kerala's appeal in medical tourism, positioning it as a competitive wellness destination (Thanuskodi and Naseehath 2016).

Each tourism segment yields distinct benefits owing to its unique expectations, motivations, and anticipations, making it impractical to apply predetermined benefits from one segment to another. As wellness tourism emerges within the tourism industry, qualitative methods are essential for establishing and measuring the specific benefits tourists seek in this segment. Several studies have explored the impact of wellness tourism on health and wellbeing. Kim, Woo, and Uysal (2015) examine the relationship between travel behaviour in elderly tourists and their overall quality of life. Their study explored six main constructs: involvement, perceived value, satisfaction with the trip, leisure life satisfaction, overall quality of life, and intention to revisit.

Promotion of Kerala as Ayurveda Health Tourism Destination

Kerala's emphasis on Ayurveda aims to promote health and wellness among both locals and tourists beyond just a tourism strategy. Kerala has been promoting itself as an Ayurvedic health tourism destination, and has made significant progress in this regard. The government is in the process of developing many institutions, promoting infrastructure, developing treatment protocols, and facilitating Ayurveda tourism. The government established the Ayurvedic Medical Association of India (AMAI) to regulate Ayurvedic practices and set up an Ayurvedic Tourism Promotion Council to boost Ayurvedic tourism in the state.

Kerala organizes Ayurveda festivals and conferences to showcase its expertise in Ayurvedic treatment. The annual International Ayurveda Congress and Expo have attracted global experts to exchange ideas and knowledge. The Global Ayurveda Festival 2023, held on December 1-5 in Thiruvananthapuram, focuses on "Emerging Challenges in Healthcare & a Resurgent Ayurveda" and includes a B2B meeting for stakeholders in Ayurveda and wellness tourism. This event provides a platform for representatives from various sectors to interact with and develop strategies for advancing Ayurveda and wellness tourism in Kerala.

Strategic Promotion of Health Tourism in India

India has the potential to develop Ayurveda health tourism owing to many factors, such as advanced medical facilities, highly skilled healthcare professionals, and cost-effective treatments. Further, it is strengthened by India's rich tradition in holistic health practices, along with the expansion of modern medical infrastructure. Tourism destinations in India, such as Kerala, Rishikesh, Uttarakhand, Goa, Karnataka, Maharashtra, Himachal Pradesh, Tamil

Nadu, and Uttar Pradesh, can tap into the potential to attract health tourists seeking holistic well-being. Government initiatives and policies play an important role in promoting tourism. Simplified medical visas facilitate international tourists' arrival, and the extended stays of health tourists owing to the diversity of services can help promote unique healthcare services in the state. Continuous improvements in healthcare infrastructure, supportive government policies, and strategic marketing can make India a well-known destination for health tourism.

Ayurveda in Amrit Kaal and its multiplier effect on India's Economic Development

Ayurvedic tourists often spend money on various services, including Ayurvedic treatment, accommodations in wellness resorts or centers, local transportation, and other related services. These tourist expenditures directly contribute to the local economy and stimulate various sectors. The growth of Ayurveda tourism has led to the creation of jobs in the healthcare and wellness sectors, such as Ayurveda practitioners, therapists, support staff in wellness centers, and employees associated with industries such as hospitality and transportation. Developing and upgrading wellness infrastructure, such as establishing Ayurvedic clinics, spas, resorts, and other facilities, not only cater to tourists but also benefit the local population. Ayurveda tourism often involves the use of traditional Ayurvedic products, oils, and medicines that promote local industries and businesses as well as a market for indigenous goods. In addition, Ayurveda health tourism facilitates cultural exchange because tourists seek to understand and experience traditional Ayurveda healing practices. This exchange can increase the understanding and appreciation of local cultures and foster goodwill and positive relationships. Ayurvedic health tourism necessitates the training and development of skilled professionals. This is possible with the establishment of

educational and training institutions that provide skilled workforce. The development of Ayurveda tourism often involves collaboration between public and private sectors. Governments may provide incentives and support and private enterprises may invest in wellness infrastructure, creating a conducive environment for economic growth. Ayurveda health tourism contributes to the growth of the health and well-being industry by including wellness practices, yoga, and meditation; expanding the scope of services offered; and attracting a diverse range of tourists. The strategic promotion of India as an Ayurvedic health tourism destination can enhance global image and attract a specific segment of tourists interested in holistic well-being. Positive branding can have spillover effects on other sectors, including general tourism and trade.

Conclusions

Tourism is an important sector that is strongly linked to the economic prosperity of countries worldwide. Health and wellness tourism are important components of tourism that drive the growth of the wellness economy in the world. India is an important destination for health and wellness tourism, with many foreign and domestic tourists seeking these services. Ayurveda health and wellness are significant components of wellness tourism in India, and Kerala has emerged as an attractive destination for Ayurveda tourism in India. Central and state governments are taking many initiatives to brand India as a destination for global wellness. Inclusive development of wellness tourism is very important for sustainable development with greater stakeholder participation. The strategic Promotion of Ayurveda health tourism requires an hour for economic development in Amritkal.

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AN INSIGHT INTO THE PLANNING IN INDIA THROUGH THE FIVE YEAR PLANS TOWARDS MATERIALIZING THE REGIONAL ASPIRATIONS WITH SPECIAL REFERENCE TO ASSAM

Jagat Jyoti Barua

Abstract

Following independence in 1947, India embarked on a path of economic growth by implementing five-year plans. India is highly motivated by the socialist path of the USSR. In March 1950, the Planning Commission was established following the resolution of the Government of India, which delineated the scope of the commission. Hence, it is a non-statutory, extra-constitutional advisory body. The planning program in India envisioned accomplishing the coveted long-term broad objectives of economic planning, which included rapid economic growth, removal of poverty and unemployment, reduction of economic inequalities, self-reliance, balanced regional development, and employment generation. In the post-independence period, the Indian economy was in a vulnerable position following rampant exploitation by foreign rule. However, its growth rate was poor. The country was engulfed in many socio-economic problems, such as poverty, illiteracy, economic inequality,

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unemployment, regional imbalance, malnutrition, and poor health. India had adopted the federal structure, and a federal state requires the division of powers and responsibilities between the states and the center. Moreover, the distribution of resources among the states is an important issue. However, it was visualized that a centralized planning system would provide a yeoman service to ensure judicious expenditure of money. According to the guidelines of the Planning Commission of India, the state Planning Board finalizes the economic plans of the states. Furthermore, the National Development Council (NDC) was created in 1952 to operate as an apex body for decision-making and deliberations on development matters. The Planning Commission of India was replaced by the NITI Aayog on January 1, 2015. It has been given a mandate to monitor the Sustainable Development Goals (SDGs) in the country and to promote competitive and cooperative federalism. India has completed 75 years of independence. At this juncture, it would be prudent to explore and understand whether the centrally biased plan formulation and implementation carried out by the Union Planning Commission of India has been successful in accommodating the regionally diverse aspirations of the country. This research endeavors to study the effectiveness of the Union Planning Commission in formulating and implementing five-year plans in India. It is imperative to know whether these five year plans have been able to address the aspirations of the people of all regions and states. The present study is a case study of a few selected states, including Assam, with respect to the outcomes of the planning era. To make the study more interesting, seven states were selected for comparison. Three states viz., Assam, Arunachal Pradesh and Manipur from North Eastern region, Gujarat, Maharashtra and Tamil Nadu represent the most developed states and Bihar represents the BIMARU states. This study attempts to comprehend the scenario of plan formulation and attainment of regional

balance in India at large and Assam specifically. This study is based on secondary data collated from various reports of the planning commission, other government reports, and research publications. This study will go a long way to detect the pros and cons of planning systems adopted in India and will enable a genuine introspection of Indian planning formulation and implementation. This study will kindle the interest in further research in this area.

Keywords: Planning, Planning Commission, Five-Year plans, Assam

Introduction

Economic planning is indispensable for crafting a roadmap of economic growth. In the post-independence era, India adopted a five-year planning model to ensure the coveted goals of economic growth, reduction and elimination of poverty and unemployment, generation of employment, removal of economic inequalities, self-reliance, and balanced regional development. India suffered an economic drain during colonial rule, and at the time of independence, the Indian economy was left in a highly exploited and deteriorated position. To overcome the hindrances and obstacles and pave the way for growth, India adopted the planning process. Structurally, India adopted a federal form of government with a division of power and resources between the Union and state governments. On 15th of March 1950, the Planning Commission was formed. In 1952, the National Development Council (NDC) was created to operate as the apex body for making deliberations and decisions on matters related to development. Later, in 2015, the NITI Aayog was set up to replace the Planning Commission of India.

Following the guidelines of the Planning Commission of India, the state Planning Board finalizes the economic plans of the states. Assam is one of the states of Indian Union

which is located in the north-eastern part of the country. This state may be chosen as a representative of this region to comprehend the impact of planning in the northeastern part of the country. This study attempts to comprehend the scenario of plan formulation and attainment of the regional balance that the planning process has been able to generate in the post –independent period. The latitudinal extension of Assam was 24° N–28° N, and the longitudinal extension of Assam was 89°45'E–96°00'E, a geographical area of 78,438 square km. The population was around 3.12 crore as per the census report of 2011.

Review of Literature

To understand the concept of economic planning and regional disparity, a literature review was conducted. Some of the selected reviews have been cited.

Noorbakhsh, F. (2003) in the paper entitled “ Human development and regional disparities in India” analysed the issue of disparities amongst major states in India using a number of regional composite indices and found that there is a scenario of divergence.

Pal Parthapratim and Ghosh Jayati (2007) in the paper entitled “Inequality in India: A survey of recent trends” has tried to study whether the inequality has increased in India in the post economic liberalisation period. Through their study using NSSO data, they found that inequality has increased in urban as well as rural areas in India.

Rajeev, M., & Nagendran, P. (2016) in the paper entitled “Disparities in Regional Development: A Case Study of North East India” used a number indicators to examine the state of development of the North East region. They studied growth and convergence across the different districts of Assam.

Sury, M. M., & Mathur, V. (2010) in their book entitled “India: Sixty Years of Planned Economic Development, 1950 to 2010” had given a detailed explanation of the planning

process initiated in India. The book discusses the principles of planning and assesses India's planning experience as an economy.

Aneja, R., Barkha, & Banday, U. J. (2021) in their article entitled "Regional economic growth and inequality in India: A sector-wise decomposition analysis" had attempted to study the behaviour of different sectors, and their impact on income inequality. They conducted an empirical study and found that tertiary and secondary sectors are highly responsible for raising income inequality.

Eckaus, R. S. (1967) in the chapter entitled 'Planning in India' discussed in depth the concepts, techniques, and functions of planning in India. They described the planning model.

The literature review made it clear that there is a dearth of studies on economic planning and its impact on the economy of Assam and the states of Northeast India. This paved the way for setting up the following objectives for the present study:

Objectives

- (I) To comprehend the process of plan formulation in Assam
- (II) To understand the regional balance in development with special reference to Assam as an outcome of the planning process.

Methodology

This study is based on secondary data collated from various reports of the planning commission, other government reports, and reliable research publications. This study is exploratory. Seven states were selected for this comparative study. The three states, Assam, Arunachal Pradesh, and Manipur, represent the northeastern region. Gujarat, Maharashtra and Tamil Nadu represent the most

developed states and Bihar represents the erstwhile BIMARU states.

Scope

This study will go a long way to detect the pros and cons of planning systems adopted in India. Further, it would enable a genuine introspection of Indian plan formulation and implementation, and kindle the interest of further research in this area.

Observations and Discussion.

(I) The process of plan formulation in Assam

According to the guidelines issued by the Planning Commission of India, the State Planning Board is empowered to finalize the economic plans of the state of Assam. The State Planning Board of Assam is further classified into two parts viz,

- (I) State Planning Board (Plains) constituted for the plain areas in Assam
- (II) State Planning Board (Hills) constituted for the Hill areas in Assam

At the initial stage, various departments associated with administration and development initiate and prepare the plan. In the final stage, the Planning and Development Department and Hill Areas Development Department of Assam finalized the state plan following the guidelines set by the Planning Commission of India and the State Planning Board.

In 2016, the State Planning Board, Assam, was renamed (SITA) State Innovation and Transformation Aayog.

In 1986, the Assam government introduced a decentralized planning system following the recommendations of the Hanumantha Rao Working Group of 1984 related to district-level planning. Decentralized planning in Assam

was confined to the sub-divisional level instead of the district level. Following the Hanumantha Rao Committee's recommendation, the Government of Assam formed the decentralized planning division (DCP) at the Head Quarter of the State and the Decentralized Planning Cell (DPC) at each plain district of the state. Decentralized planning aims to involve the participation of people directly in the planning process to ensure the socio-economic development of the state.

Role of North Eastern Council (NEC)

Under the North Eastern Council Act of 1971, NEC was established as an advisory body. Subsequently, by the amendment of 2022, it was transformed into a Regional Planning Body. NEC are expected to prefer schemes that benefit two or more states.

Plan outlays in the Five Year plans in Assam during the Planning Period

The basic objective of economic planning in Assam is to achieve Growth with Social Justice. Table-1 portrays the state plan outlays along with the expenditures in Assam across the different five-year plans.

The first Plan in Assam could not frame highly ambitious objectives owing to the paucity of resources of the state and high dependence on central assistance. The Second plan was a bit ambitious but still dependent on assistance from the Union government. This dependence on central assistance continued until the seventh plan (1985-90).

**Table 1: The State Plan Expenditure and Outlay in Assam
during 1951-52 to 2015-16 (₹) Crore**

Plans	Actual Expenditure	Approved Outlay	Central Assistance
First (1951-56)	28.00	21.67	22
Second (1956-61)	63.13	57.94	31
Third (1961-66)	132.24	120.00	100
Three Ad-hoc Plans (1966-69)	87.12	89.25	84
Fourth (1969-74)	198.41	223.75	173
Fifth (1974-79)	428.63	473.84	242
Annual Plan (1979- 80)	159.73	155.00	113
Sixth (1980-85)	1,279.79	1,115.00	1,226
Seventh (1985-90)	2,489.57	2,100.00	2,065
Annual Plan (1990- 91)	596.62	675.00	NA
Annual Plan (1991- 92)	695.50	800.00	NA
Eighth (1992-97)	4,968.64	4,672.00	NA
Ninth (1997-02)	5,934.78	8,245.28	NA
Tenth (2002-07)	9,816.18	10,927.53	NA
Eleventh (2007-12)	24,419.77	31,821.89	NA
Annual Plan (2012- 13)	7,239.14	10,500.00	NA
Annual Plan (2013- 14)	8,132.65	12,500.00	NA
Annual Plan (2014- 15)	13,054.15	18,000.00	NA
Annual Plan (2015- 16)	12,009.77	23,406.00	NA

Source: Adapted from https://transdev.assam.gov.in/sites/default/files/swf_utility_folder/departments/pnodd_medhassu_in_oid_2/portlet/level_2/Chapter-3%20-%20Expenditures.pdf

Infrastructure development is an urgent and necessary step towards the growth and development of a state. Table-2 exhibits the plan expenditures for infrastructure development. In almost all the plans expect the Second and Eighth plans there has been an effort to invest more than 50 percent of the total outlay on development of infrastructure.

Table 2. Plan Expenditure on infrastructural development in Assam (L) Crore

Plan	Expenditure on Infrastructure	Expenditure as % of total Outlay
First	11.16	54.46
Second	26.15	45.1
Third	69.22	58.6
Fourth	122.03	61.5
Fifth	324.2	58.8
Sixth	866.12	67.5
Seventh	1,257	59.8
Eighth	1,863	40
Ninth	Data not available	Data not available

Source: Adapted from The Economy of Assam, P.K.Dhar

Transport and communication are vital pillars of the growth and development of a state. Table-3 exhibits the plan expenditures for transportation and communication. Under the successive five-year plans in Assam, the outlay on transport and communication varied significantly. The transport and communication sector has not received much priority under any of the five-year plans.

Table 3: Plan expenditure Outlay on Transport and Communication in Assam (L) Lakhs

Plans	Outlay on Transport and Communication	Percentage of Plan Outlay
First	349	17.0
Second	655	12.0

Third	785	5.9
Ad-hoc Plans	414	4.8
Fourth	2,598	13.1
Fifth	5,560	10.1
Sixth	10,577	8.2
Seventh	16,220	7.7
Eighth	29,484	6.3
Ninth	Data not available	Data not available

Source: Adapted from *The Economy of Assam*, P.K.Dhar

Power is a significant determinant of a state's growth and development. This is essential for the industrialization and modernization of agriculture. Table-4 displays the plan expenditure on power. The power generation and development program was not given much attention in the first two five-year plans. However, in subsequent five-year plans, the power sector became a favored sector.

Table 4: Plan expenditure Outlay on Power in Assam (L) Lakhs

Plan	Outlay on Power	Percentage of Plan Outlay
First	121	5.8
Second	544	10
Third	4462	37.7
Ad-hoc Plans	1864	22.1
Fourth	3916	19.7
Fifth	15000	27.2
Sixth	45777	35.7
Seventh	48650	23.3
Eighth	119446	25.3
Ninth	Not Available	Not Available

Source: Adapted from *The Economy of Assam*, P.K.Dhar

(II) Socio-Economic Condition of Assam vis-à-vis few selected Indian states viz., Arunachal Pradesh, Assam, Bihar, Gujarat, Maharashtra, Manipur, Tamil Nadu

After the completion of seven decades of planning, it would be interesting to explore the scenario of balanced growth across various regions in India. Seven states were selected for the comparison. Three states Assam, Arunachal Pradesh and Manipur from North Eastern region, Gujarat, Maharashtra and Tamil Nadu represent the most developed states and Bihar represents the BIMARU states.

A glance at Table-5 explains the socio-economic conditions of the selected states of India. In the field of literacy, Assam, Arunachal Pradesh and Manipur stands better than Bihar but are far behind the three developed states viz., Maharashtra, Gujarat and Tamil Nadu. The poverty ratio ranged from 11.3 in Tamil Nadu to 36.9 in Manipur. The poverty ratio in Assam was 32. The Unemployment rate – usual status (adjusted) (Urban Male)–is very high in Arunachal Pradesh and Bihar and as low as 19 in Gujarat. This number is 36 in the case of Assam. The Multidimensional Poverty Index was high in Arunachal Pradesh, Assam, and Bihar.

It is vivid that the regional disparity is still an important issue in India. The Planning process and program must be streamlined to reduce regional disparity and ensure equity among the different states.

Certain Economic parameters to gauge the disparity in growth among the selected states

(I) Gross-State Domestic Product

Table 6 shows the range of gross domestic product. Arunachal Pradesh was the lowest among the selected states, followed by Maharashtra leading the list. Economic planning must focus on reducing this gap.

Table 5: Comparison of Assam vis-à-vis selected Indian States

Parameters	Arunachal Pradesh	Assam	Bihar	Gujarat	Maharashtra	Manipur	Tamil Nadu
Literacy Rate(2011)	65.38	72.19	61.8	78.03	82.34	76.94	80.09
Poverty Rate2011-12 (Based on MRP Consumption)	34.7	32	33.7	16.6	17.4	36.9	11.3
UNEMPLOYMENT RATE – USUAL STATUS (Adjusted) (Urban Male)2022-23 per thousand	79	36	73	19	40	62	43
Multidimensional Poverty Index,NFHS,5,(2019-21)	0.059	0.086	0.16	0.05	0.033	0.034	0.009

Source: Compiled <https://www.rbi.org.in/>, Census of India,<https://prsindia.org/>,

**TABLE 6 : Gross State Domestic Product
(Constant Prices Base: 2011-12) (L)**

State/Union Territory	2021-22
Arunachal Pradesh	19,80,053
Assam	2,62,52,252
Bihar	3,99,92,978
Gujarat	13,72,20,362
Maharashtra	20,27,97,104
Manipur	20,51,458
Tamil Nadu	13,43,28,684

Source : RBI publications

(II) Per Capita Net State Domestic Product:

This is a better indicator of the economic status. Assam, Manipur, and Bihar were placed far below other states. Efforts must be made in the planning process to bridge this gap, as shown in Table-7. The per capita net state domestic product of Gujarat is very high compared with that of Bihar. Assam also has a low Per capita net state domestic product.

**TABLE 7 : Per Capita Net State Domestic Product
(Constant Prices Base: 2011-12) (L)**

State/Union Territory	2021-22
Arunachal Pradesh	1,11,776
Assam	65,726
Bihar	28,679
Gujarat	1,70,384
Maharashtra	1,38,490
Manipur	49,602
Tamil Nadu	1,54,557

Source : RBI publications

(III) State Wise Number Of Factories:

Factories are indicators of industrialization and growth. As shown in Table-8, again the states of Manipur and Arunachal Pradesh have fewer factories than Gujarat, Maharashtra, and Tamil Nadu. Assam with 5196 factories and needs to go a long way to reach the level of the developed states.

TABLE 8 : State-Wise Number Of Factories

State/Union Territory	2019-20
Arunachal Pradesh	116
Assam	5,196
Bihar	3,429
Gujarat	28,479
Maharashtra	25,610
Manipur	204
Tamil Nadu	38,837

Source : RBI publications

(IV) State-Wise Physical Working Capital:

Availability of working capital is a sharp parameter that gauges the level of economic growth of a state. As shown in Table 9, the conditions of Arunachal Pradesh and Manipur are very pathetic. Assam and Bihar have to strive hard through their planning process in order to reach the status of the developed states.

TABLE 9 :State-Wise Physical Working Capital(L)

State/Union Territory	2019-20
Arunachal Pradesh	11,717
Assam	9,87,858
Bihar	8,33,012
Gujarat	2,13,16,309
Maharashtra	1,99,91,986

Manipur	7,092
Tamil Nadu	1,42,51,617

Source : RBI publications

(V) Number of Mandays – Employees:

The availability of employment opportunities is a clear indicator of growth. As clear in Table-10, the conditions of the Arunachal Pradesh and Manipur are very pitiable. Assam and Bihar have stand far behind the developed states.

TABLE 10 : State-Wise Number of Mandays - Employees

State/Union Territory	In Thousands
	2018-19
Arunachal Pradesh	865
Assam	60,242
Bihar	31,323
Gujarat	6,02,424
Maharashtra	6,26,690
Manipur	2,498
Tamil Nadu	7,71,192

Source : RBI publications

(VI) Availability Of Power:

Power is essential for the growth of both industry and agriculture. The per capita availability of power is a clear reflector of the level of development. The lack of sufficient power in the states of Assam, Arunachal Pradesh, Bihar, and Manipur reflects disparity in the process of growth. Table-11 shows the per capita availability of power across the selected states.

TABLE 11 : State-Wise Per Capita Availability Of Power

State/Union Territory	In (Kilowatt-Hour)
	2022-23
Arunachal Pradesh	644.3
Assam	366.4
Bihar	373.4
Gujarat	2288.3
Maharashtra	1659.3
Manipur	375.2
Tamil Nadu	1588.7

Source : RBI publications

Findings and Recommendations

There was a clear display of regional disparities among the selected states. Few states like Maharashtra, Gujarat, and Tamil Nadu have benefitted greatly and are at a very high niche of development. States such as Assam, Bihar, Arunachal Pradesh, and Manipur have failed to reap the benefits of the planning process in India. Economic planning through the five –year plan failed to ensure balanced regional growth and development.

The reasons for the existence of regional imbalances and disparities despite the planning efforts in India may be as follows.

- (I) **Historical Factor:** The British Colonial rule neglected these regions. They did not attach much importance to the north-eastern region, including Assam. This continued, even after independence.
- (II) **Geographical Isolation from Capital region:** geographical distance may be an important factor. In addition, the northeastern region has very uneven terrain, including hills, lakes, rivers, and dense forests.

There has been an issue of locational disadvantage for the state of Assam and other states in the North East.

- (III) **Lack of a peaceful and conducive environment:** The states of northeastern India, including Assam and Bihar, have not been very conducive for growth and development. Assam and North Eastern states had the problem of insurgency as well as terrorism.
- (IV) **Political apathy:** There may be political apathy behind the glaring disparity among different states.
- (V) **Failure of five-year plans and the mechanism of planning adopted in India:** Although balanced regional growth has been the coveted goal, plan allocation across states has accentuated the disparity. States such as Assam have been receiving less allocation in most plans.
- (VI) **Centralized planning process:** The planning process is centralized to a great extent in nature.

Suggestions:

- (I) Proper economic and econometric analysis may help improve planning by affixing proper targets and allocating sufficient funds.
- (II) The decentralized approach is more pragmatic.
- (III) Political parties should shun off their narrow political interests and make the planning process more effective by making proper decisions in the interests of the country.
- (IV) Proper vigilance and audits of expenditures must be ensured.
- (V) The planning process should focus on the optimal utilization of both natural and human resources.
- (VI) The hitherto neglected regions should receive more attention.

Economic Planning is imperative for a nation's growth and development. However, the planning process must be inclusive, comprehensive and pragmatic. With the experience of planning for more than seven decades, India is now comfortably placed to learn from previous mistakes and develop an all-encompassing planning process free from loopholes in order to ensure a high niche in the global scenario.

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A WAY FORWARD TO FINANCIAL INCLUSION IN INTEGRATION WITH JAM TRINITY

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Abstract

India has witnessed a massive expansion in its banking facilities over the last few years. In spite of conservatism, people are now very aware and willing to avail banking facilities and become a part of the inclusive financial growth of the nation. Although there are several reasons behind this but a series of campaigns like, PM Jan Dhan Yojna, PM Vaya Vandan Yojna, PM Mudra Yojna and so on, driven by our Honorable PM Narendra Modi is one of the biggest factors for this drastic transformation. The vision of the government was very clear that each individual of the nation should align with the mainstream banking facilities and avail the benefits of various financial inclusion schemes. For this, a remarkable step called JanDhan-Adhar-Mobile (JAM) trinity was also taken to bring every marginal person into mainstream. A part of this is that many other schemes are also active and perform quite well in achieving a state of

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financial inclusion. However, these efforts are seemingly inadequate to do so, and there is a need to redefine and redesign our schemes from the very start and relaunch them in a new way. Therefore, this study will made an attempt analyzes the various financial inclusion schemes and their effectiveness in the context of the Indian economy with the objective of exploring the functioning and effectiveness of various financial inclusion schemes, to explore and critically evaluate the various factors behind the delay in achieving financial inclusion, to analyze JAM Trinity as a tool for financial inclusion, and to determine the driving forces for financial inclusion via JAM Trinity. For this purpose, descriptive and analytical research was conducted using secondary data retrieved from various government departments, articles, journals, and websites. Further data will be analyzed using simple percentage, mean, and trend analyses. This study concludes with a positive link between the JAM Trinity and financial inclusion, which will unleash a new way to achieve financial inclusion and financial integration.

Keywords: JAM Trinity, Financial Inclusion and financial integration

Introduction

India has been characterized by an agriculture-based economy since gaining independence, with 67% of its labor force dependent on the sector. Agriculture not only produces food for the country but also boosts GDP, generates foreign exchange, employs labor, generates revenue, and supports the industrial goods market. Agriculture is an important sector of the Indian economy. However, the post-independence era saw a downward trend in this sector's growth due to factors such as farmers' lack of access to credit, inadequate marketing resources, inadequate infrastructure, and low awareness. During the last ten–15 years, the banking industry has experienced some of its fastest growth.

However, the fact that it was more focused on class banking than mass banking made it disappointing that it did not reach the lowest classes of Indian society, which included small and marginal farmers, landless laborers, impoverished, rural artisans, impoverished women, and small business owners. A significant portion of the population relied on agriculture, self-employment, and handicraft businesses, so it was imperative to provide credit to this group in order to achieve general growth. Indian officials implemented numerous reforms in every region of the nation, yet the outcomes were inadequate. This has expanded the distance between rural and urban areas and led to gender inequality, regional imbalance, poverty, unemployment, and so on. India desired a shift that would include a vast unbanked and underprivileged population in the process of development. Pradhan Mantri Jan Dhan Yojna (Pradhan Mantri Jan Dhan Yojna) was introduced by the Indian Prime Minister to improve the lives of millions of these households. Its motto, *Sabka Saath Sabka Vikaas*, refers to the provision of simple and affordable financial services to lower class and marginalized populations. The objective was to offer affordable financial services such as savings, insurance, credit, and remittances, while considering the requirements of the lower end of the economic pyramid. On the day of its founding, PMJDY established record accounts, reflecting the financial instability that existed in these areas, which may be alleviated by making financial services and products available to these individuals. PMJDY has been shown to be a solution to many of these issues, including their long-standing struggles with social exclusion, unemployment, and poverty. To receive the additional benefits of overdraft protection and accidental insurance under this system, every household had to register and maintain an account. To prevent leakage in the payment system under the Direct Benefit Transfer (DBT) plan, PMJDY seeded every account with the beneficiary's Aadhaar number to transfer subsidies.

Additionally, PMJDY simplified the use of technology, such as Internet and mobile banking, to reach places where banks were unable to establish presence. By providing them with financial stability and security, this integrated approach through Jan Dhan, Adahaar, and Mobile (JAM) was a step toward changing the rural landscape and enabling them to achieve self-development, sustainability, and involvement in nation building.

Financial Exclusion

In the post-independence era, the formal financial system extended its reach across the country, but it was unable to reach the lower echelons of society, which required substantial financial support for a range of needs, including domestic needs, business establishment, agricultural endeavors, emergency medical care, and natural disasters. This failure to provide resources resulted in “financial instability.” Financial exclusion occurs when financial services are unavailable or inaccessible to weaker segments at reasonable prices. Financial Inclusion works in the opposite direction. Exclusion results from people’s reluctance to approach financial institutions and the formal financial system’s unwillingness to reach them. Sincere efforts are needed in both these areas to close the financial gap, or rather, to close the gap that has existed since independence. Monetary Social exclusion results from exclusion, because those who are excluded cannot advance socially or economically. People who are excluded are deprived of their regular activities and unable to contribute to the economic development of the country. Lack of funding prevents parents from providing basic education to their children, which leads to an increase in child labor, unemployment, illiteracy, poverty, and other issues. Numerous creative business concepts are unable to generate income because of a lack of funding or credit. Without credit or savings, these people are unable to take on any kind of risk, personal, or

financial. Additionally, because these people keep their hard-earned money at home, there is a higher risk of theft. If a person is turned down for credit by a financial institution, they can still turn to moneylenders who provide credit, but at a significantly higher interest rate. This makes these people's debt loads heavier and contributes to poverty. Apart from impeding economic progress, exclusion also leads to gender inequality, regional imbalances, and a reduction in the socioeconomic advancement of the community. FINANCIAL Inclusion" refers to a strategy of offering simple, inexpensive, and low-cost financial services to the underprivileged or low-income population with the goal of integrating them into mainstream development. According to the Reserve Bank of India, inclusion is the process by which mainstream institutional players guarantee that vulnerable groups such as lower-income and weaker sections of society have fair and transparent access to appropriate financial products and services at an affordable cost. The official financial sector and Reserve Bank of India are key players in the push for financial inclusion. Financial inclusion is a term coined by Dr. V. Reddy, former governor of the Reserve Bank of India. In 2005–2006, Reddy directed banks to align their policies to reach out to the unbanked population, which included poor and landless farmers, artisans, small business owners, manufacturers, and others. These individuals are denied credit by formal financial institutions, leaving them with no other option than to turn to informal sources such as wealthy farmers, moneylenders, relatives, or friends, who take advantage of them by charging exorbitant interest rates, further driving them into poverty. The Dr. C. The Rangarajan Committee studied financial inclusion in great detail and produced several recommendations that were put into practice in the PMJDY to reach every corner of the nation. To achieve inclusive growth, the report placed strong emphasis on reaching the bottom of the pyramid—those who are not part of the formal banking system. To stop leaks and reach

the beneficiary, every Jan Dhan account was seeded with an Aadhaar number through the use of mobile and Internet technology.

Need for Financial Inclusion

Finance and credit are key components of the economic development process. To create jobs, promote economic growth, and end poverty, the impoverished must have access to timely financing. Since independence, granting credit to underprivileged and lower-class groups has become a significant issue. This created a vacuum that required ongoing efforts. Despite having a vast institutional credit network, India has not been able to reach low-income households. In addition to offering low-cost, affordable credit, “inclusion” also aims to educate impoverished households about various financial services and products and motivate them to take advantage of these benefits. The benefits of using these financial services are also explained by financial literacy. Many residents in remote rural areas are ignorant of their financial needs and access to resources. In an attempt to meet their financial needs, they turn to unofficial sources such as moneylenders, who take advantage of them by charging exorbitant interest rates, trapping them in a cycle of debt, and often leading to suicide when they are unable to repay their money. Numerous instances of this type have been reported in the past. “Inclusion” aims to link every household with a bank account so that they can directly avail the benefits or subsidies offered by the government and also minimize the leakage in the system. This will help people develop the habit of saving money for adverse situations, such as economic shocks in the form of drought or floods, and family needs, such as education and marriage. The time spent delivering credit was also reduced by this process. Financial inclusion also serves as a catalyst for the growth of numerous small businesses by offering credit programs such as MUDRA, which creates jobs and

serves as a source of income to lift the impoverished out of poverty and enable them to become self-sufficient. Therefore, financial inclusion is an integrated approach to changing rural people's lives and creating a new vision of a developed rural nation, rather than a limited concept of opening accounts.

Jan Dhan, Aadhaar, Mobile (JAM): An Integrated Approach

According to the Economic Survey, as of August 2023, there were 904 million mobile phones, 17,757 million Aadhaar, and more than 50 crore Jan Dhan accounts (Economic Survey, 2015). JDY placed a lot of emphasis on using the Internet and mobile banking, particularly in places where physical branches could not be opened. This leads to minimal processing time, low transaction costs, and quick service for the beneficiary. To facilitate the direct transfer of benefits (such as MNREGA payments, subsidies, scholarships, pensions, etc.) to the final recipient, Aadhaar numbers are also seeded or linked with Jan Dhan accounts. Consequently, the leak of the payment system stopped. Individuals with Aadhaar numbers do not need any additional documentation to open an account. Additionally, the Aadhaar number is used for biometric identification of beneficiaries. The term "JAM," which refers to this combination of Jan Dhan, Mobile, and Aadhaar, was created by Chief Economic Advisor Mr. Arvind Subramaniam. According to the Economic Survey, the JAM trinity enables the state to provide assistance to low-income households in a way that is less distorted, leak-proof, and well targeted (Economic Survey, 2014–15). Jam has become the flavor of the season and is a game-changer. It clears the path for DBT or direct benefit transfer, which involves paying benefits to recipients directly through bank accounts. A national campaign called the JAM Trinity is thought to transform the perception of rural India from one of the impoverished

strata into one of the affluent, developed, and self-sufficient segments.

Pradhan Mantri Jan Dhan Yojna (PMJDY): Initiative To Reach The Poor

According to the 2011 census, only 58.7% of households have access to banking services. Even though our nation has advanced from being underdeveloped to developing one sixty-nine years after independence, Indian policymakers continue to discuss inclusive growth or inclusion. India has advanced in numerous fields, including science and technology, information technology, and services. However, this development did not benefit from a rural scenario. A sizable portion of the population still lacks access to necessities, such as electricity, roads, and education. One of the main problems that households face is lack of credit, which is a major contributor to the high unemployment rate and poverty in these areas. India has seen numerous financial reforms in the past few years to help the lower classes and provide them with financial support, but the effects have been severe. Another initiative that goes in this direction but is not similar to previous methods is PMJDY. In an effort to promote inclusion and create an inclusive society, PMJDY, also known as JAM (Jan Dhan, Aadhaar, and Mobile), offers affordable financial services to a sizable unbanked population living in isolated rural areas.

Key Features of PMJDY

- Banking facility for unbanked section
- Providing financial services to low income group or weaker sections
- Linking accounts with aadhar numbers
- RuPay debit cards and overdraft facility
- Micro Insurance
- Accidental Insurance

- Mobile/Internet banking
- National Credit Guarantee fund
- The PMJDY is implemented in two stages, each of which has specific goals that must be met in a predetermined amount of time.

Implementation Phases of PMJDY

First phase -15th August 2014 -14th August 2015

- All areas have universal access to banking, except for those with inadequate infrastructure or connectivity problems.
- Establishing Basic Savings Bank Accounts (BSBAs) and issuing Rupay debit cards with Rs. 1 lakh built-in insurance. For DBT (Direct Benefit Transfer), the Aadhaar number was seeded into each account.
- Establishing Financial Literacy Centers (FLCs) at the district level to promote financial literacy

Second Phase (15th August 2015-14th August 2018)

- Jan Dhan Accounts are seeded with distinct Aadhaar numbers so that benefits can be received by the recipient directly.
- Giving account holders who made transactions in their accounts during the first six months, a 5000-rupee overdraft.
- Creation of the National Credit Guarantee Fund (NCGF) for defaulting accounts with Rs. 5,000 overdraft limits.
- Introduction of the “Swavlamban” pension plan, which is intended for the unorganized sector. To promote inclusion, NABARD established the Financial Inclusion Fund (FIF) and the Financial Inclusion Technology Fund (FITF).

Third Phase (15th August 2018-October 2023)

A G20 document prepared by the World Bank praised India's digital public infrastructure (DPI) for its transformative impact on the country's financial inclusion rate. The document highlights the role of the Jan Dhan-Aadhaar-Mobile (JAM) trinity, along with other ecosystem variables and policies, in driving India's financial inclusion rate from 25% in 2008 to over 80% in the last six years. The DPI network has also facilitated transfers of \$361 billion directly to beneficiaries, and has brought efficiency and cost savings to the private sector.

Unique features of PMJDY

In the past, several initiatives to reach the lower strata began, but the outcomes fell short of expectations. JDY gained traction by using a mission mode approach to achieve its inclusion goal, while maintaining the needs of low-income households at the center of the program, utilizing technology, and clearly defining the roles of various stakeholders.

Providing banking services to every household is a priority for PMJDY, as opposed to focusing solely on the villages. This program has been implemented for households in both urban and rural areas. Sub-service areas (SSAs) are created to extend banking services within a 5 km radius to reach the village, which has a population of 1000–1500 households. Additionally, JDY promotes the use of the Internet and mobile banking to reach rural areas, where physical branches cannot be established. Additionally, the easing of KYC regulations and seeding of every account with an Aadhaar number to transfer benefits directly to the beneficiary has made it easier for the general public.

Many camps were held at the district and village levels under JDY by various stakeholders, including banks, self-help groups, non-governmental organizations, and others, with the goal of promoting financial literacy, opening accounts, and enrolling Aadhaar cards.

JDY promotes digital inclusion through Internet and mobile banking. To accomplish this goal, representatives of state governments, industry experts, and other stakeholders collaborate. A number of digital literacy and financial literacy camps were established under Yojna to raise awareness of the value of bank accounts and accounts in general.

District-level Common Kiosks Centers (CSK) were established to help individuals receive benefits. These centers offered information not only in Hindi and English but also in the local language.

Rupay Debit cards were also given with the Jan Dhan account, and the recipient could use these cards to make purchases and access different schemes around the clock.

Financial Reforms in Post Independence Era

With the establishment of credit cooperatives and the passing of the Cooperatives Act in 1904, India's financial system began to develop. Financial inclusion began to gain traction in the post-independence era with the formation of cooperatives following the All-India Rural Credit Survey Committee's (AIRCS) 1954 recommendation. Since then, the RBI and the Indian government have made numerous attempts to get banks into rural areas, but their success rate has been very low, widening the financial gap between urban and impoverished areas.

Financial Reforms in Post independence

First phase 1947-1991

Credit accessibility for the underserved population (farmers, low-income groups, laborers without land, etc.). Establishing cooperatives to increase the low-income group's tiny deposits and savings. The State Bank of India was founded in 1955 as a result of the AIRCS recommendations.

The goal of nationalizing banks in 1969 and 1980 was to provide formal banking services to rural communities by growing their branches and lending to the priority sector. To provide rural residents with credit at a reasonable rate, the Differential Rate of Interest (DRI) was introduced in 1972.

Second phase 1991-2005

- Creation of the two most potent and effective programs, the Self-Help Group Bank Linkage (SHGBLP) Model in 1992 and the Kisan Credit Cards (KCC) in 2001, which changed the lives of numerous impoverished people and took credit at their doors.
- Numerous unbanked households with modest needs are encouraged to use microfinance.
- The Reserve Bank of India instructed banks to grant access to all Self-Help Groups (SHGs) involved in the bottom of the pyramid banking model.
- The Swarojgar Credit Card (SCC) was launched by NABARD in 2003 with the intention of lending money to self-employed individuals, artisans, handloom weavers, and other small business owners.

Third phase 2005-present

- This phase drew the attention of policymakers towards the weaker and low-income groups, which were still unbanked despite taking corrective measures in the past years.
- A large portion of the lower segment was still deprived of financial services and was beyond the reach of financial institutions. The Annual Policy statement of RBI for the year 2005-06 first coined the term 'financial inclusion' and directed banks to renew their policies and work towards reaching the large unbanked population.

- This phase was characterized through a new perspective of looking at the unbanked section as a business opportunity for the overall development of the nation.
- Following the launch of the Pradhan Mantri Jan Dhan Yojna (Pradhan Mantri Jan Dhan Yojna) in 2014, efforts have focused on achieving 100% financial inclusion by 2020 using a mission mode approach.
- Bank branch expansion, educating the impoverished to save and deposit money, prioritizing lending to the prime sector, and reducing informal lending in unbanked areas were hallmarks of the first reform phase. The Second Phase was characterized by the launch of Kisan Credit Cards (KCC) and the Self-Help Group Bank Linkage (SHGBLP) program in 1992, both of which were essential for reaching out to rural households and leaving their marks. It was believed by strategists, policymakers, and other stakeholders that growth cannot be considered “inclusive” until a significant portion of the population suffers from extreme poverty. Therefore, the third phase is crucial.

Progress Made so far

With the opening of 1.5 crores accounts under the schemes on the first day of the launch, banks broke previous records. Banks issued 10.58 Crores RuPay debit cards as of January 2015.

Most accounts were opened by the State Bank of India, followed by the Bank of Baroda, and Punjab National Bank. The Department of Financial Services, Government of India, received a Guinness World Record certificate for its enormous success during the Financial Inclusion Campaign.

Kerala became the first state to achieve 100% financial inclusion under PMJDY followed by Madhya Pradesh and Punjab. ‘Jeevan Pramaan’ a digital portal to provide life certificates was also introduced in Punjab.

More participation was seen from Banking Correspondents, SHGs, NGOs, MFI, etc., and Many Daak Sewaks were turned into Bank Mitras.

Research Methodology

Objectives of Study:

This paper aims to explain how JAM Trinity will help the less fortunate and low-income populations, as well as those areas that need more work to reach the goal of financial inclusion.

The broad objectives of this study were as follows:

- To comprehend the idea of JAM Trinity, its function in Financial Inclusion, and the previous inclusion-related reforms.
- Attention should be paid to the successes and issues encountered during the implementation stage.
- To assess PMJDY's performance of the PMJDY To arrive at the conclusions in the paper, data is gathered from secondary sources such as research papers from journals, articles, magazines, reports, websites, books, and so forth.

Data Analysis & Findings

Table 1: Pradhan Mantri Jan - Dhan Yojana
Beneficiaries as on 18/10/2023
(All figures in Crore)

Bank Type	Number of Beneficiaries at rural/ Semi urban centre bank branches	Number of Beneficiaries at urban metro centre bank branches	No Of Rural-Urban Female Beneficiaries	Number of Total Beneficiaries	Deposits in Accounts (In Crore)	Number of Rupay Debit Cards issued to beneficiaries
Public Sector Banks	24.88	14.78	21.84	39.66	161205.91	29.86
Regional Rural Banks	8.11	1.35	5.47	9.46	39715.49	3.44
Private Sector Banks	0.72	0.73	0.77	1.45	5864.65	1.17
Rural Cooperative Banks	0.19	0.00	0.10	0.19	0.01	0.00
Grand Total	33.90	16.87	28.17	50.76	206786.06	34.46

Source: Press Information Bureau, 2023.

Table 1 presents data on the Pradhan Mantri Jan-Dhan Yojana (PMJDY) beneficiaries across different types of banks as of October 18, 2023. Public Sector Banks dominate the scheme with 39.66 crore beneficiaries, followed by Regional Rural Banks with 9.46 crore, Private Sector Banks with 1.45 crore, and Rural Cooperative Banks with 0.19 crore beneficiaries. Out of the total 50.76 crore beneficiaries, 33.90 crore are from rural/semi-urban areas, while 16.87 crore are from urban/metro areas. The scheme has accumulated deposits worth Rs. 206,786.06 crore, with 34.46 crore RuPay

debit cards issued to beneficiaries. Women beneficiaries constitute 28.17 crore of the total accounts.

This data implies significant success in financial inclusion efforts in India, particularly in rural areas where participation is twice that of urban areas. Public Sector Banks are clearly the backbone of this initiative, handling 78% of all accounts and 78% of total deposits. The high number of female beneficiaries (about 55% of total accounts) suggests strong progress in women's financial empowerment. However, the limited participation of private sector and cooperative banks indicates potential for greater involvement from these sectors. The high number of RuPay debit cards issued (about 68% of total accounts) shows substantial progress in digitizing financial services for previously unbanked populations, though there's still room for improving card penetration.

Conclusion

The expansion of banking services, use of technology, beneficiaries' increased account usage, seeding of Aadhaar numbers, and other factors make JAM successful. People must be educated on the value of and how to use banking services as well as digital literacy, since doing so will lead to the development of a cashless society. To attain both sustainability and inclusion, products must be designed to best meet the needs of each rural segment as they differ from one another. To ensure long-term sustainability and growth, the goal should go beyond simply opening accounts. Instead, it should offer people initial handholding support and assist them in adhering to their self-help model. There are still many people without Aadhaar numbers, and those who do need to make an effort to link their accounts with them. Technology has the potential to be a catalyst for inclusion; however, in many remote areas, there are problems with inadequate connectivity, low digital literacy, and resistance to adopting new technologies. In addition to educating and

helping people realize their advantages, other channels such as eKYC, mobile/internet banking, Rupay debit cards, and micro-ATMs should be promoted in order to address these problems. The government should support DBT in reaching the true beneficiary to address the issue of many accounts remaining dormant. These accounts should also be used to transfer benefits such as pensions, overdrafts, insurance, and scholarships. To quickly identify this gap and take appropriate action, it is necessary to establish a robust monitoring and implementation structure mechanism. In addition to these measures, other strategies to ensure the success of the JAM include hiring and training local employees, supporting the PPPP (Public-Private-People Panchayat) model, connecting the MSMEs sector with PMJDY because doing so will create jobs and serve as a source of income that promotes inclusion, offering microcredit through these accounts, and connecting the postal network with Jan Dhan accounts because post offices are present in every village. Using an ATM Van will not only save time but also help people form the habit of using ATM cards in remote areas, where people must travel long distances to access banks. Financial inclusion is necessary for inclusive growth; however, simply opening an account does not ensure inclusion. Rather, it is a means, not an end, of inclusiveness. Employment opportunities are also required. If this is ignored, the larger goal of inclusion may be narrowly conceptualized. Income flow is necessary for inclusion to occur so that individuals can save money in accounts and be referred to as included.

A step in this direction is JAM Trinity and PMJDY, which aim to lift those at the base of the pyramid into the mainstream of development and deliver them from poverty. In the past, numerous attempts to achieve inclusion have been made, but they all failed. Positive outcomes were observed when PMJDY and the JAM, with their broad geographic reach, extensive operational scope, and mission mode approach, were combined. This campaign will undoubtedly alter

the perception of rural India that has existed for decades and present a more advanced image of a rurally developed country.

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AMRITKAAL EMBRACES INDIAN ECONOMY: THE IMPACT OF CRUDE OIL PRICES

Malkhan Shree Ramesh¹ & Arun Kumar²

Abstract

Researchers have long been captivated by empirical data, establishing that a country's macroeconomic performance is highly tied to oil price shocks. All major oil-producing and exporting nations have vulnerable relationships with one another, similar to the current state of the global petroleum industry. The oil and gas industry is one of the eight essential industries and will continue to play a significant role in the country's economic transition, as India is the world's third-largest energy consumer after the USA and China. With 5.7% of the world's primary energy consumption, it is also an energy consumer with the fastest rate of growth. India primarily uses coal, crude oil, natural gas, and renewable energy sources to meet its energy demand. Coal, crude oil, natural gas, and renewable energy sources account for the majority of India's energy demand.

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The petroleum and natural gas industry is an essential component of the energy mix, and will continue to be a key pillar for supplying energy to the nation in the future. This study set out to investigate how changes in oil prices impacted the Indian economy, specifically those related to fluctuations. This study attempted to estimate using a variety of methods, such as the correlation between different market and economic variables, and oil prices. Crude oil prices were considered as independent variables in this study, while the stock market, exchange rate, inflation, and GDP were adopted as dependent variables. The goals of this study were to examine how the price of crude oil has impacted the growth of the Indian economy, investigate the connection between oil prices and inflation, and examine the variables influencing crude oil prices. For this purpose, 10 years of secondary data were collected between March 2013 and March 2022. An extensive analysis of the impact of oil prices is necessary, because India is largely dependent on oil imports. This article has attempted to summarize “The Success Story of Hon’ble Prime Minister Shri Narendra Modi’s Mission to Ensure Access, Justice, and Equity of Energy in India” as successfully as possible.

Keywords: crude oil price, exchange rate, inflation, stock market, GDP.

Introduction

Oil and energy are important drivers of economic expansion that supports economic growth. There are differences in the worldwide distribution of crude oil reserves. The exploration, production, gathering, refining, and manufacturing of intermediate products and their conversion into various products, distribution of refined products, storage and other facilities, such as pipelines and various terminals, and additional marketing and retail operations are all included in the diverse global oil industry. The US, Canada, Russia, Venezuela, and all Middle Eastern

nations—Iran, Iraq, Kuwait, Saudi Arabia, the United Arab Emirates, and others—are among the nations with significant oil reserves. India imports 70-80% of its oil demand. The country's oil consumption is expected to increase by 7% in 2019 and approximately 11% in 2024. As India consumes a significant amount of oil that is not produced there, volatile oil prices are a threat to the economy. The exchange rate also has an impact on Indian oil prices. The greater the pressure on the economy, the higher the exchange rate. Oil prices are also affected by several rules in India, particularly the various import duties that apply to different countries. Russia, Iraq, and Saudi Arabia are the main oil suppliers in the country. Following US sanctions, India stopped purchasing oil from Iran. Kuwait is a key oil supplier in India.

Many products can be made from oil, including motor spirit or gasoline, heating oil, distillate fuel oils such as kerosene and diesel, jet fuel (which is used extensively globally and has a significant influence on the airline industry), lubricants, asphalt, petrochemical feedstock, coke, aviation gasoline, and wax. Oil is used for many different purposes and in many different ways in India. Oil is used as a motor spirit, which is petroleum used as fuel in trucks, two- and three-wheelers, and other vehicles. Petroleum used as fuel in passenger cars, trucks, two- and three-wheelers, and other vehicles is known as motor spirits or oil. There are other forms of oil that are available, such as automatic transmission fuel (ATF), which is utilized by airlines; superior kerosene oil (SKO), which is used for lighting and cooking; high-speed diesel (HSD) fuel for the transportation industry (roads, trains, etc.), liquefied diesel oil (LDO), which is utilized in small pumps, and agriculture, among other uses. In addition to lubricants, oil is used to make coke and paraffin wax, among other smaller products. ONGC, Indian Oil, GAIL, the Great Eastern Energy Corporation Limited, Essar Oil, RIL, GSPCL, and other significant companies are involved in the Indian oil industry. Each company serves a

wide range of customer needs and has a large market share. These players are significantly affected by changes in oil prices. India permits 100% FDI in exploratory operations and 49% FDI in refining under the automatic method. Oil has a significant economic impact and wide range of applications. An easy illustration would be a rise in the price of oil, which would increase inflation. This is because every commodity depends on transportation, which, in turn, depends on petroleum, an oil extract. This connects to oil, making everything else irrelevant. The oil sector is essential because India depends largely on oil imports. India's oil demand has increased to 82.8% based on computations.

With its GDP growing at a rate of five–ten percent per year, India is a developing nation. Recent corporate reforms implemented by Prime Minister Narendra Modi may also have an impact on the Indian economy. Business development suggests that energy consumption may increase. Along with other uses, crude oil is also used to generate electricity. Crude oil is the second most important source of energy generation in India, where it is consumed in third place worldwide and provides 29.55% of the country's total energy output.

The current state of the Indian crude oil industry is deplorable. On the one hand, while crude oil demand is growing, production is decreasing. This led to higher import costs. The main distinction between developing and developed nations is their reliance on crude oil.

India needs to start looking into alternative energy sources, because this is a worrying problem. Crude oil prices and the economy have a reciprocal relationship, as Sadorsky (1999) finds. He finds that shocks to the volatility of crude oil affect economic activity differently. The study finds that fluctuations in crude oil prices and shifts in economic activity are mutually dependent.

Investors expect an eventual drop in crude oil prices, as the Organization of Petroleum Exporting Countries (OPEC), which also includes Iran and Saudi Arabia as rival nations, is currently unable to set quotas due to Saudi Arabia's refusal to accept any OPEC decisions that benefit Israel. The fact that most US industries experienced a crisis when the US was prohibited from importing oil (an embargo) due to its support for Israel is another reason; the US did not want to deal with such a scenario while still depending on the OPEC countries.

As a result, two techniques were employed, one was geopolitics and the other was a novel means of obtaining oil. As a result, the OPEC has less control over oil prices. India was heavily reliant on the OPEC for oil imports, which often imposed a premium on all Asian nations. OPEC is losing its bargaining strength as a result of developing non-OPEC countries. And India, the world's third largest importer, has opted to diversify its imports by purchasing crude oil from the United States for the first time, India got a 2-million-barrel cargo. Crude oil imports have the potential to boost bilateral trade by \$2 billion if the US and India have a positive working relationship and the US reduces its trade imbalance (India sells up to \$72 billion while importing \$30 billion). The fact that public and private companies have invested a combined \$5 billion in US shale gas assets also makes this beneficial to India. While the US sold crude oil for \$2 less than OPEC, Europe and the US charged \$6 more than OPEC. Owing to the country's climate, oil production in Russia is highly expensive. If production is suspended, it will take significant financial and temporal investments to resume.

Literature Review

Sadorsky,(1999)in his research, taking into account US companies, he examines the correlations between changes in crude oil prices and stock market return stand and

concludes that significant and unexpected changes in the oil market occurred as a result of the oil shocks.

Ibrahim Tuhiran and et.al (2012) in this research work the authors looked at the dynamic relationship that exists between the exchange rate and oil prices in a few selected developing economies. It made three points: first, in contrast to developed countries, the researcher studied the relationship between oil prices and exchange rates in emerging markets. Oil is used as an alternative advantage class in monetary models that study exchange rates and daily data on oil prices are used to examine the dynamics of an emerging market economy's exchange rate. This study compares the relationship before and after the financial crisis to demonstrate how this relationship has changed.

Basher and Sadorsky (2006) and Ewing and Malik (2013) state that oil prices have become more volatile, and it is generally anticipated that futures prices will rise. Theoretically, oil price volatility has a negative impact on budgets because of the effects of an oil price shock and the higher production costs caused by rising fuel costs.

A.Hidhayathulla, Mahammad Rafee.B (2014) In this study, time series data from 1972–1973 to 2012–2013 were used to investigate the impact of oil price on the Indian rupee's exchange rate against the US dollar. Multiple linear regression models were used to analyze the data. The model's output indicates that when the price of crude oil rises, imports will likely continue to rise. As a result, oil imports expanded India's foreign exchange market demand for dollars. Among other things, strong demand supports the dollar's value relative to the Indian rupee. This discovery will help the Indian government to control the price of gasoline and prevent the rupee from depreciating against the US dollar.

Jain and Patil (2015) discovered a decline in crude prices and in the status of India's oil industry. Subsequently, we

examine the effect of crude oil prices on India's inflation, how crucial it is to the Reserve Bank of India's ability to control inflation, and its effects on trade and fiscal deficits. The future of crude prices in India is considered by considering all these factors. In addition, we must use nuclear, solar, hydropower, and other alternative energy sources to reduce our reliance on imports. India must strategically plan its future petroleum needs by sustainably accelerating its economic growth in the near future.

Singh and Kapil (2016) used regression with the Granger-causality approach to analyze daily crude oil price, \$-Rs value, and Nifty returns data from April 2010 to March 2015 in a bi-variant manner. The research findings indicate a negative correlation between nifty and the exchange rate, and a significant positive association between nifty returns and crude oil.

Soundarapandiyan, (2017)the study, states thatthe decline in crude oil prices affects many commodities and people. The economy is impacted in three ways by the \$1 decrease in crude oil. Oil prices have dropped by as much as 55%, confirming the OPEC's oversupply and slowing global demand for the commodity. India has implemented a pricing mechanism for petroleum products that considers the prices of crude oil globally. Because of the 57% decline in crude oil prices, India has made progress toward stabilizing its investments and exchange rate. GDP, CPI, and crude oil prices for a 15-year period were the parameters used in the regression model.

Bidisha Sarkar and Jain Mathew, (2018) The major objective of the study is to identify the variables affecting changes in the price of Indian basket crude oil. Additionally, the study makes an effort to look into how this price fluctuation affects the Indian economy. The overall goal of this study is to investigate the reasons behind and effects of fluctuations in the global price of crude oil for the Indian

basket. Evaluation of this cause-and-effect relationship necessitates collection of long-term historical data. As a result, the research project's timeframe was taken into account, spanning the fiscal years 2000–2001 through 2016–2017. For this study, monthly data frequency was used. The Oil Spreadsheet Model is used to comprehend the supply and demand mechanism, which serves as the foundation for determining the global factors influencing changes in the price of Indian basket crude oil. The Granger Causality Test Model is an econometric technique used to analyze the cause-and-effect relationship of this price fluctuation. It has been found that the prices of Brent crude oil and the Organization of the Petroleum Exporting Countries (OPEC) have a reciprocal influence on the international price of Indian basket crude oil. Conversely, the Gross Domestic Product (GDP) is a function of the Indian basket crude oil price. With regard to the given issue—changes in the price of crude oil—this study aims to present a comprehensive image. We considered the factors that impact the price of crude oil as well as the factors that influence the price of crude oil. Throughout this paper, a number of empirical pieces of evidence have been presented, and a conceptual model has been developed in response. A number of additional possible future studies may be built upon the findings of this study and the conceptual model.

Hall, Henry, and Herbert(2019) state that uncertainty surrounds the prices at which the oil market is traded, but there is no denying that the decline in oil prices since the beginning of the year rank among the 1980s' most momentous economic events. Depletion policies and oil industry investment plans may be impacted if declines in this size continue. Additionally, other supply side adjustments could be implemented as a result of shifting the relative price of oil to other fuels and shifting the profitability of the oil industry to other economic sectors. However, there are other, more direct, and measurable effects of changes in the oil price, such

as price, exchange rate, and demand. The macroeconomic implications of this shift in oil prices have been estimated in several ways. Numerous studies have concluded that these effects are advantageous, stimulating output and reducing inflation. Additionally, it is predicted that declining oil prices will add another barrier to discretionary fiscal policies. We contend that because other macroeconomic effects of the change in oil prices have not been fully taken into account, much of the recent discussion on this topic has overstated the likely impact of declining oil prices on the PSBR. Researchers have identified the direct but limited effects of an oil price change before estimating the overall macroeconomic effects. This analysis is then expanded in the following section to consider all macroeconomic effects, both direct and indirect.

Objectives

1. To assess the influence of fluctuations in crude oil prices on the growth of the Indian economy.
2. To Study the correlation between inflation and oil price is the primary focus.
3. To analyze the influence of fluctuations in crude oil prices on currency exchange rates.
4. To study the variation in gross domestic product caused by fluctuations in crude oil prices.
5. To examine the connection between the stock market and crude oil prices.

Research Gap

Earlier studies primarily concentrated on the singular elements of fluctuations in crude oil prices and how they influence particular economies. This study adopts a more inclusive method by examining the consequences of crude oil price shifts on a broad spectrum of economic factors. In contrast to earlier studies, our research delves into the

overall effects of fluctuations in crude oil prices on the Indian economy by considering numerous variables and their impact on various facets of the Indian economy.

Research Methodology

Utilizing existing data that has already been gathered, compiled, organized, and published by others defines secondary research. This type of data can be acquired more efficiently and at reduced cost. Secondary data sources include the internet, articles, magazines, and trade journals. The primary aim of this investigation was to evaluate the impact on the Indian economy using the parameters specified in the study. To achieve this, a decade's worth of data, from March 2013 to March 2022, has been amassed.

Hypotheses

Hypothesis-1

H_0 : The BSC Sensex Index remains unaffected by fluctuations in crude oil prices.

H_1 : Investors should note that fluctuations in crude oil prices significantly impact the BSE Sensex index

Hypothesis-2

H_0 : The performance of the Nifty 50 index is unaffected by fluctuations in crude oil prices.

H_1 : The Nifty 50 index is significantly affected by fluctuations in crude oil price.

Hypothesis-3

H_0 : The stability of the exchange rate is independent of fluctuations in crude oil prices.

H_1 : Changes in crude oil prices cause exchange rate fluctuations.

Hypothesis-4

H_0 : The crude oil price has a minimal impact on the increase in inflation.

H₁: Crude oil price is a significant factor contributing to an increase in inflation.

Hypothesis-5

H₀: Fluctuations in crude oil prices do not appear to exert a significant influence on nominal GDP.

H₁: Changes in crude oil prices have a substantial impact on nominal GDP.

The study provided a detailed walkthrough of data analysis, covering statistical methods and their subsequent interpretation.

1. Karl Pearson's Correlation coefficient (r):

The correlation coefficient is a statistical technique used to determine the relationship between the variables and the strength of the relationship. It was measured on a scale of -1 to +1.

- If the correlation (r) is close to 0, there is no relationship between the variables.

If $r \leq 1$, it indicates that as the X variable increases, the Y variable also increases, and as the X variable decreases, the Y variable also decreases ($X \uparrow Y \uparrow$ and $X \downarrow Y \downarrow$).

- If $r \leq -1$, it suggests that as the X variable increases, the Y variable decreases, and as the X variable decreases, the Y variable increases ($X \uparrow Y \downarrow$ and $X \downarrow Y \uparrow$).

The square of the coefficient, denoted as r^2 , represents the percentage of variation in one variable that is related to the other variable. The following formula can be used to calculate the correlation coefficient (r):

$$r = [\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} \sqrt{n\sum y^2 - (\sum y)^2}}$$

2. ANOVA (Analysis of Variance-Single factor)

Analysis of variance is an essential tool for determining statistically significant differences between the means of three or more independent groups. Furthermore, it identifies whether any of these means are significantly different

from each other. This method specifically tested the null hypothesis.

3. Hypotheses is tested

If the calculated F-value is greater than the F-tabled value (95% confidence level and 5% significance level), H0 is rejected (null hypothesis), and H1 is accepted (alternative hypothesis). If the calculated F-value is less than the F-tabled value, H0 is accepted and H1 is rejected.

Analysis of Data

Hypothesis-1

H₀: The BSE Sensex Index remains unaffected by fluctuations in crude oil prices.

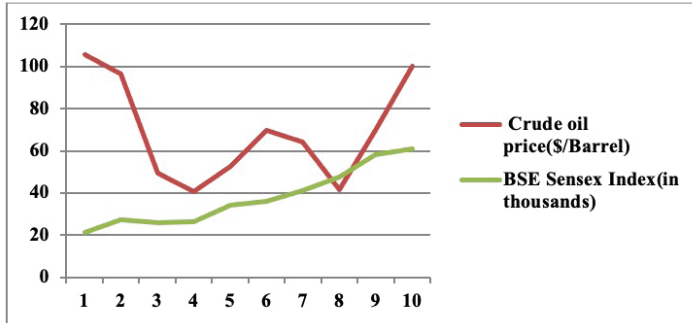
H₁: Investors should note that fluctuations in crude oil prices significantly impact the BSE Sensex Index.

Table-1: Average crude oil price and BSE Sensex

Year	Crude oil price(\$/Barrel)	BSE Sensex Index(in thousands)
2013	105.87	21.171
2014	96.29	27.499
2015	49.49	26.117
2016	40.76	26.626
2017	52.51	34.056
2018	69.78	36.068
2019	64.04	41.253
2020	41.47	47.751
2021	69.89	58.253
2022	100.08	60.841

Sources: www.statista.com and bscindia.com

Table -1: Graphical Representation



	Crude oil price(\$/Barrel)	BSE sensex
Crude oil price(\$/Barrel)	1	
BSE sensex	0.050595987	1

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Crude oil price(\$/Barrel)	10	690.18	69.018	589.3405511
BSE sensex	10	379.633	37.9633	191.2090418

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4821.97196	1	4821.97196	12.35532503	0.002472885	4.413873405
Within Groups	7024.946336	18	390.2747965			
Total	11846.9183	19				

Interpretation:

We studied the relationship between the Indian stock market and crude oil prices by analyzing the BSE SENSEX and Crude Oil Prices (\$/barrel) from 2013 to 2022 as the two variables. Our correlation test reveals a relatively weak positive correlation (0.0505) between the stock market and crude oil prices. In addition, a one-factor ANOVA test indicated that the p-value was lower than the alpha value of **0.05**. As a result, we rejected the null hypothesis and accepted the alternative hypothesis, which suggests that fluctuations in crude oil prices significantly impact the BSE Sensex Index.

Hypothesis-2

H_0 : The performance of the Nifty 50 index is unaffected by fluctuations in crude oil prices.

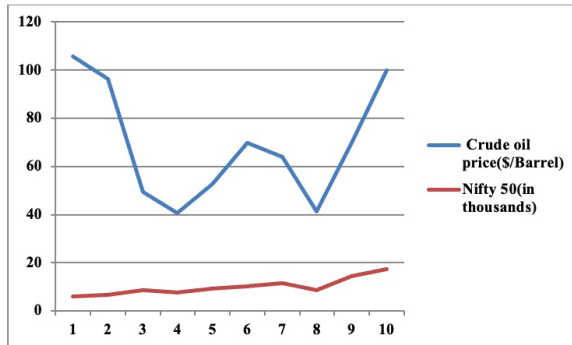
H_1 : The Nifty 50 index is significantly affected by fluctuations in crude oil price.

Table-2: Average crude oil price and Nifty 50

Year	Crude oil price(\$/Barrel)	Nifty 50(in thousands)
2013	105.87	5.93
2014	96.29	6.704
2015	49.49	8.491
2016	40.76	7.738
2017	52.51	9.173
2018	69.78	10.113
2019	64.04	11.623
2020	41.47	8.597
2021	69.89	14.491
2022	100.08	17.464

Sources: *www.statista.com and NSE Historical Data*

Table -2: Graphical Representation



	Crude oil price(\$/Barrel)	Nifty 50 (in thousands)
Crude oil price(\$/Barrel)	1	
Nifty 50 (in thousands)	0.170307431	1

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Crude oil price(\$/Barrel)	10	690.18	69.018	589.3405511
Nifty 50 (in thousands)	10	100.324	10.0324	12.88792849

ANOVA

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	17396.51	1	17396.51	57.77377067	5.03973E-07	4.413873405
Within Groups	5420.056	18	301.1142			
Total	22816.56	19				

Interpretation:

In this study, we examine the connection between the Indian stock market (NIFTY 50) and crude oil prices (\$/barrel) from 2013 to 2022. After conducting a correlation test, we discovered a low positive correlation (0.1703) between the two variables. Furthermore, a one-factor ANOVA showed that the p-value was less than **0.05**, which led us to reject the null hypothesis and accept the alternative hypothesis. This suggests that changes in crude oil prices impact NIFTY 50.

Hypothesis-3

H_0 : The stability of the exchange rate is independent of fluctuations in crude oil prices.

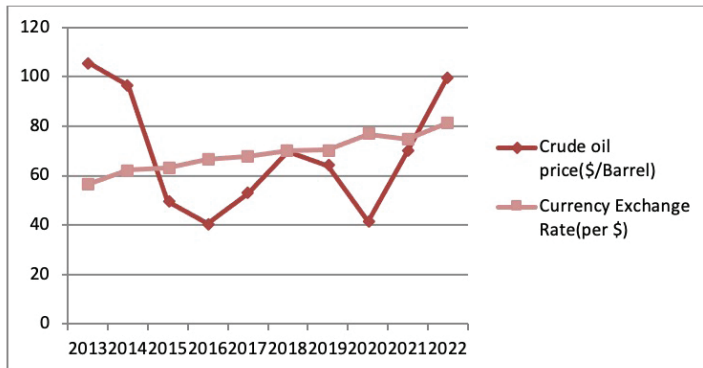
H_1 : Changes in crude oil prices cause exchange rate fluctuations.

**Table-3: Average crude oil price and
Currency Exchange Rate**

Year	Crude oil price(\$/Barrel)	Currency Exchange Rate(per \$)
2013	105.87	56.57
2014	96.29	62.33
2015	49.49	62.97
2016	40.76	66.46
2017	52.51	67.79
2018	69.78	70.09
2019	64.04	70.39
2020	41.47	76.83
2021	69.89	74.57
2022	100.08	81.35

Sources: www.statista.com and Moneycontrol.com

Table -3: Graphical Representation



	Crude oil price(\$/ Barrel)	Currency Exchange Rate(per \$)
Crude oil price(\$/Barrel)	1	
Currency Exchange Rate(per \$)	-0.163425149	1

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Crude oil price(\$/ Barrel)	10	690.18	69.018	589.3405511
Currency Exchange Rate(per \$)	10	689.35	68.935	54.57829444

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.034445	1	0.034445	0.000106986	0.991861101	4.413873405
Within Groups	5795.27	18	321.9594228			
Total	5795.304	19				

Interpretation:

In our comprehensive study, we delved into the intriguing link between the Indian Exchange Rate and crude oil prices from 2013 to 2022. Through rigorous analysis, we found a notable negative correlation of **-0.1634** between these key variables. Furthermore, our one-factor ANOVA yielded a significant result, with the p-value surpassing the alpha value of **0.05**. Consequently, we confidently affirm the null hypothesis and reject the alternative hypothesis, conclusively demonstrating that the exchange rate remains largely uninfluenced by fluctuations in crude oil prices.

Hypothesis-4

H₀: The crude oil price has a minimal impact on the increase in inflation.

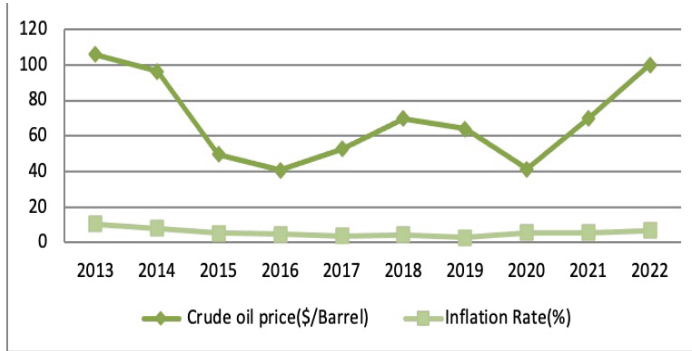
H₁: Crude oil price is a significant factor contributing to an increase in inflation.

Table-4:Average crude oil price and Inflation Rate

Year	Crude oil price(\$/Barrel)	Inflation Rate(%)
2013	105.87	10.48
2014	96.29	8.25
2015	49.49	5.25
2016	40.76	4.83
2017	52.51	3.89
2018	69.78	4.28
2019	64.04	2.86
2020	41.47	5.84
2021	69.89	5.52
2022	100.08	6.95

Sources: *www.statista.com and Moneycontrol.com*

Table -4: Graphical Representation



	Crude oil price(\$/ Barrel)	Inflation Rate(%)
Crude oil price(\$/Barrel)	1	
Inflation Rate(%)	0.729136966	1

ANOVA: Single Factor SUMMARY

Groups	Count	Sum	Average	Variance
Crude oil price(\$/Barrel)	10	690.18	69.018	589.3405511
Inflation Rate(%)	10	58.15	5.815	5.016738889

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	19973.1	1	19973.09605	67.2090555	1.72677E-07	4.413873405
Within Groups	5349.216	18	297.178645			
Total	25322.31	19				

Interpretation:

We analyzed the connection between the inflation rate and crude oil prices by examining data on the inflation rate and crude oil prices (\$/barrel) from 2013 to 2022. A correlation test revealed a moderate correlation (0.7292) between the two variables. Additionally, a one-factor ANOVA test indicates that the p-value is less than the alpha value of **0.05**, leading us to reject the null hypothesis and accept the alternative hypothesis, which suggests that crude oil prices have a significant impact on the inflation rate.

Hypothesis-5

H_0 : Fluctuations in crude oil prices do not appear to exert a significant influence on nominal GDP.

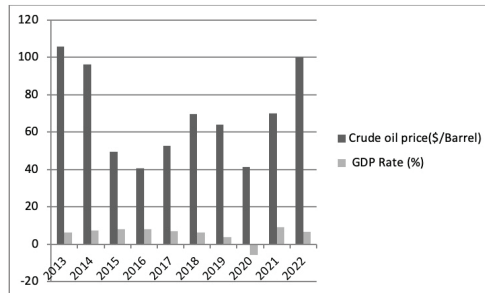
H_1 : Changes in crude oil prices have a substantial impact on nominal GDP.

Table-5:Average crude oil price and GDP Rate

Year	Crude oil price(\$/Barrel)	GDP Rate (%)
2013	105.87	6.38
2014	96.29	7.41
2015	49.49	7.99
2016	40.76	8.17
2017	52.51	7.17
2018	69.78	6.45
2019	64.04	3.87
2020	41.47	-5.83
2021	69.89	9.05
2022	100.08	6.83

Sources: www.statista.com

Table -5: Graphical Representation



	Crude oil price (\$/Barrel)	GDP Rate (%)
Crude oil price(\$/Barrel)	1	
GDP Rate (%)	0.317631113	1

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Crude oil price(\$/Barrel)	10	690.18	69.018	589.3405511
GDP Rate (%)	10	57.49	5.749	18.46889889

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	20014.83	1	20014.83181	65.858903	1.99751E-07	4.413873405
Within Groups	5470.285	18	303.904725			
Total	25485.12	19				

Interpretation:

In this study, we analyzed the relationship between Indian GDP and crude oil prices from 2013 to 2022. We found a positive, moderate correlation of 0.3176 between the GDP rate and crude oil prices. Additionally, our one-factor

ANOVA test revealed a p-value lower than 0.05, leading us to reject the null hypothesis and to accept the alternative hypothesis. Therefore, we can conclude that changes in crude oil prices have a significant effect on nominal GDP.

Findings and Suggestion

• Findings

- A) The relationship between inflation and oil prices is significant. An examination of the correlation over a span of ten years indicated a robust link between the two variables.
- b) This relationship is ascribed to the extensive utilization of oil across almost all major industries in an economy, leading to elevated manufacturing and logistical costs for businesses when oil prices increase.
- c) Furthermore, the research uncovered a noticeable association between oil prices and the overall market capitalization of benchmark indexes such as Sensex and Nifty.
- d) This is due to the fact that higher oil prices result in increased costs for businesses, consequently diminishing their earnings.

• Suggestions

Securing crude oil at the best price is always uncertain for importing countries, such as India. Oil prices significantly impact macroeconomic factors such as inflation, stock market performance, and GDP. Thus, it is crucial to establish mechanisms that shield India's economy from price and output fluctuations. The following suggestions are considered:

- i. The oil industry must secure raw materials through long-term agreements and acquisition of oil fields abroad.

- ii. Expanding the refining capacity and setting up a refining hub in India to serve the Asia-Pacific region is of great importance.
- iii. Effectively managing the exports of petroleum products is crucial for generating foreign currency, protecting foreign reserves, and mitigating the impact of rising crude oil prices.
- iv. India must prioritize establishing and maintaining strategic crude oil reserves to ensure the nation's oil supply during emergencies and to preempt unforeseen interruptions in oil delivery.
- v. As the world's second-largest importer of crude oil, India faces a significant opportunity to secure and replenish its oil reserves amid a decrease in global demand owing to China's slowing economy.
- vi. India should diversify its oil imports from the Middle East to the US and explore new strategic trading partners.

Conclusions

India is currently seeing a notable rise in oil imports, accounting for 82.8% of the country's oil supply. This dependence on imports is projected to increase further in the coming years. Although it is challenging to accurately forecast the future trajectory of oil prices, the general agreement is that prices are likely to increase. In our study, we singled out crude oil as the independent variable and explored its connection with several dependent variables such as the stock market (BSE Sensex, Nifty 50), exchange rates, inflation, and GDP. Our results revealed an inverse correlation between exchange rates and crude oil, whereas the other variables were positively correlated with crude oil.

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SHIFTING APPROACHES TO FINANCIAL INCLUSION IN INDIA : THE ROLE OF DIGITAL PUBLIC INFRASTRUCTURE

Sindhu K.

Abstract

Financial inclusion is a critical driver of economic growth and a major determinant in achieving the Sustainable Development Goals. India has made significant strides in promoting financial inclusion through various initiatives and the development of digital public infrastructure (DPI), known as India Stack. This study examines the role of DPI in shifting approaches to financial inclusion in India. The performance of financial inclusion indicators from 2011 to 2021 is analyzed, revealing substantial improvements in access to banking services, insurance, and pension schemes. The study highlights the three layers of India Stack: digital identification through Aadhaar, digital payments via the Unified Payment Interface (UPI), and data exchange facilitated by the Data Empowerment and Protection Architecture (DEPA). The widespread adoption of digital services has enhanced financial inclusion by reducing costs, creating financial footprints, and narrowing gender

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disparities. However, challenges such as the digital divide and data privacy concerns need to be addressed to fully realize the potential of India Stack. The study concludes that India's foundational building block approach and interoperable ecosystem serve as a model for other countries aspiring for digital transformation in promoting financial inclusion and economic development.

Keywords: Financial inclusion, Digital Public Infrastructure, Unified Payment Interface, Data Empowerment and Protection Architecture, Sustainable Development Goals

Introduction

Financial inclusion is recognized as one of the major determinants of economic growth across the world. According to the UN, financial inclusion is also a major driving force for the attainment of most Sustainable Development Goals (SDGs). Contemporary researchers worldwide have established a nexus between financial inclusion and economic well-being. Studies show that an inclusive financial system lowers the rates of poverty and inequality by enabling people and households to manage payments and consumption, obtain bank loans, and have access to insurance (Mader, 2018). It has also shown that having access to financial services helps small and start-up firms create value via encouraging investments and the mobilisation of financial resources, all of which have a beneficial knock-on effect on growth. (Park & Mercado 2015; Kim 2016; Nanda & Kaur 2016). Additionally, financial inclusion helps women, young people, and other previously excluded groups to become more economically empowered and actively participate in the financial system. (Hendriks, 2019; Siddik, 2017). Accordingly, many countries have initiated and implemented financial inclusion strategies to boost their economic growth. In recent years, the widespread availability of the Internet and smartphones has helped

significantly enhance financial inclusion by closing the financial infrastructure gap (Chatterjee, 2020).

Financial Inclusion - Meaning and Measurement

The UN (2006) describes financial inclusion as providing everyone access to savings and payment services, insurance for all individuals and businesses who qualify, and credit for bankable individuals and businesses. Accordingly, it is recognized as an essential precondition for increasing GDP and reducing poverty and economic inequality. Financial inclusion, according to the World Bank, provides access to reasonable and useful financial goods and services that support individuals and businesses in meeting their needs for credit, insurance, payments, transactions, and savings, all of which are offered in a sustainable manner. The RBI defines financial inclusion as the process of guaranteeing vulnerable groups such as lower-income and weaker sections, and timely and sufficient credit at a reasonable cost. (Rangarajan 2008). The vision of financial inclusion in the country, as stated by the Committee on Medium-Term Path to Financial Inclusion (RBI, 2015), is to guarantee small and marginal farmers and low-income households easy access to a basket of basic formal financial products and services, including credit, savings, remittance, government-sponsored insurance, and pension products, at a reasonable cost with adequate protection gradually augmented by social cash transfers. In addition, this will increase the access of small and marginal enterprises to formal financing, with a greater reliance on technology to reduce costs and improve service delivery.

Three dimensions are generally used to quantify financial inclusion: (i) access to financial services, (ii) usage of financial services, and (iii) quality of products and service delivery. Based on these factors, three categories of indicators are used to quantify financial inclusion (World Bank 2012).

- i) Access indicators, such as the distribution of bank branches or point-of-sale (POS) devices in rural regions, show the extent to which financial services are available.
- ii) Use indicators that track how customers utilize financial services over time. Examples include the frequency and duration of usage of financial services and products.
- iii) Quality indicators clarify whether financial services and products meet customer needs, the variety of alternatives accessible to clients, and the level of client awareness of financial services and goods.

To track the progress of financial inclusion at the national and international levels, a wide range of indicators and sub-indicators have been established to gather complete data regarding financial inclusion. Indicators from the supply and demand sides are also considered. The OECD National Financial Literacy and Financial Inclusion Surveys, the World Bank Global Findex database (GF), the IMF Financial Access Survey (FAS), the World Bank Enterprise Surveys, the World Bank Global Survey on Consumer Protection and Financial Literacy, the World Bank Financial Capability Surveys, and the World Bank Global Payments Systems Survey are a few of the data sources on financial inclusion.

India's Initiatives for Financial Inclusion

The nationalization of the insurance industry in 1956 marked the beginning of India's transition towards financial inclusion. Numerous initiatives from the government and regulators have followed this trend. However, until recently, the country's financial inclusion level was not commendable. A massive transformation has occurred with the use of technological innovation to deepen access to financial services. Digital public infrastructure (DPI) growth in the nation was the main driver of the Financial Inclusion Index (FI Index) 2023 value increase from 43.4 in 2017 to 60.1. Table 1 shows India's performance on several chosen

measures of financial service usage and accessibility. This demonstrates that these indicators have increased in value over the last 10 years.

Table 1. Performance of Financial Inclusion Indicators in India-2011-2021

Dimensions	Indicators	2011	2014	2017	2021
Usage	Percentage of individuals (aged 15 and older) who report holding an account with a conventional financial institution or a mobile money provider, either alone or jointly with another person.	35.2	53.1	79.9	77.5
	The percentage of adult users (age 15 and older) that use a transaction account to send or receive digital payments from a bank, other formal financial institution, or mobile money provider	NA	22.24	28.69	34.93
	Any money borrowed (percentage of those over 15) from a formal financial institution or through a mobile phone account	35.23	53.14	79.88	77.53
Access	Number of debit cards per 1000 adults	318.54	425.78	787.0	858.71
	Number of branches per 100,000 adults	1.66	12.83	14.49	14.58
	Number of ATMs per 100,000 adults	8.82	17.73	22.0	21.44

Source : WBGF(2021), IMFFS

Pradhan Mantri Jan Dhan Yojana (PMJDY) was introduced in 2014 to bridge the gap in the availability of banking services by giving every household access to fundamental financial services. Creating accounts for every adult has become a priority. As a result, the proportion of adults with bank accounts increased from 35.2 in 2011 to 77.5 in 2021,

improving the nation's degree of financial inclusion. The fact that 23.87 crore (more than 55.47%) of PMJDY account holders are women and 28.70 crore (66.69%) of PMJDY accounts are located in rural regions demonstrates this inclusiveness.

Two major programs were introduced to offer access to insurance services. Pradhan Mantri Suraksha Bima Yojana (PMSBY), a renewable one-year accidental death/disability insurance of ₹2 lakhs, was introduced in 2015. For a premium of as little as ₹12/-per subscriber every year, the initiative is available to all bank account holders in the age range of 18 to 70. As of June 30, 2022, there have been approximately 29.01 crore enrollments under PMSBY. For ₹330/-per year each subscriber, all bank account holders between the ages of 18 and 50 can purchase. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), an additional insurance policy with a ₹2 lakhs one-year term life cover. Over 13.11 crore people enrolled in PMJJBY as of June 30, 2022.

The Atal Pension Yojana (APY), a pension plan backed by the Indian government, was introduced in 2015 to meet the financial requirements of the elderly. After becoming 60 years old, an APY member (who is between the ages of 18 and 40) would get a set monthly pension that will vary based on their payments, from ₹1,000 to ₹5,000. A total of 321.02 lakh members were registered in the APY on July 31, 2021.

Pradhan Mantri Mudra Yojana: This programme was introduced on April 8, 2015. The initiative provides loans of up to Rs. 50,000 under the sub-scheme "Shishu," between Rs. 50,000 and Rs. 5.0 Lakhs under the sub-scheme "Kishore," and between Rs. 5.0 Lakhs and Rs. 10.0 Lakhs under the sub-scheme "Tarun." Collaterals are not needed for loans that are taken out. With the help of these measures, young, educated, or talented workers will feel more confident and able to pursue their dreams of becoming first-generation entrepreneurs. Small firms already in operation can also

grow. As of August 20, 2021, 3,07 crore accounts had been sanctioned for Rs. 16,22,203 crores.

Stand-up India Scheme: The plan, known as Stand-up India, was introduced on April 5, 2016. The programme makes bank loans for the establishment of greenfield businesses, up to ₹1 crore, available to at least one borrower from a Scheduled Caste (SC) or Scheduled Tribe (ST) and one borrower who is a woman per bank branch. This business may engage in the commerce, manufacturing, or service industries related to agriculture. With the help of all Scheduled Commercial Banks, the program is being executed with the goal of helping at least 2.5 lakh borrowers. The programme is in place, and Scheduled Commercial Banks throughout the nation are providing loans. The Stand-up India initiative supports women and members of the SC and ST categories who face particular challenges because they lack guidance and mentorship.

Pradhan Mantri Vaya Vandana Yojana (PMVVY) was introduced by the government on May 4, 2017, with the goal of protecting seniors 60 years of age and older against potential interest income declines brought on by erratic market circumstances and providing social security in old life. Subscriptions for the plan can be made by the Life Insurance Corporation of India (LIC) until March 31, 2023. For the fiscal years 2020–21, PMVVY provides a guaranteed rate of return of 7.40% annually for a ten-year policy.

Table 2 - Flagship Schemes for Financial Inclusion in India

Initiatives for Financial Inclusion	Year of Launch	Objectives
Pradhan Mantri Jan Dhan Yojana (PMJDY).	2014	Universal access to banking services
Pradhan Mantri Suraksha Bima Yojana (PMSBY)	2015	Provide universal access to insurance services
Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	2015	Provide universal access to insurance services
Atal Pension Yojana (APY)	2015	Increase coverage of pension services
Pradhan Mantri Mudra Yojana	2015	Provide collateral free loan to first generation entrepreneurs
Stand-Up India Scheme	2016	Encourage female entrepreneurs in the SC and ST categories.
Pradhan Mantri Vaya Vandana Yojana (PMVVY)	2017	Provide senior citizens social security benefits and safeguard them from potential drops in interest income.

Source : Department of Financial Services, Ministry of Finance

Digital Payment Infrastructure - The India Stack

Digital payment infrastructure (DPI) is a digital network that enables countries to effectively provide social services and economic opportunities to all citizens. This makes it possible for consumers to get paid more quickly and easily, and to create bank accounts. This makes it possible for governments to assist residents swiftly and effectively

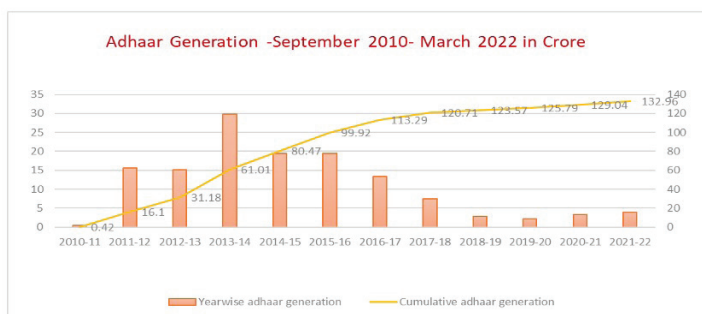
in times of need. Three fundamental mechanisms, which are part of a robust DPI, allow the government to interact directly with people. These include (i) Identity: With the use of a DPI-supported digital identity, individuals may access a variety of products and services, such as bank accounts, business supplies, and marketplaces, in addition to government benefits. (ii) Payments: The emergence of new digital payment systems has made it possible for millions of people— particularly women —to carry out safe financial transactions without physical currency. (iii) Data exchange: A data exchange system provides users more control over their data while facilitating data sharing across disconnected entities.

India's efforts to promote financial inclusion have benefited greatly from its digital public infrastructure, known as India Stack, which includes a digital payment system, unique digital identity, and data interchange. India's path to becoming a global leader in DPI teaches other nations important lessons about building an ecosystem that will support their own digital transformation efforts. (Alonso et al, 2023).

Layer 1-Digital Identification

The introduction of the Aadhaar biometric digital ID system in 2010 marked the beginning of India's development. The purpose of the Unique identity Authority of India (UIDAI) is to provide all Indian citizens with unique identity numbers, or "UIDs," that are connected to biometric identification. Launched in 2010, this electronic payment system employs biometric identification to allow users to send and receive money using their unique Aadhaar numbers. In an effort to better the financial circumstances of India's citizens, the UIDAI has so far provided over 120 crore Aadhaar numbers to citizens and allowed the use of technology to perform large-scale, real-time Direct Benefit Transfers (DBTs) to bank accounts. (Panagariya, 2022).

**Figure 1- Total number of Aadhaar Generation
2010-2022**



Source: UIDAI Annual Report 2021 - 22

Layer 2- Digital Payments

The foundation of India Stack’s payment layer is the unified payment interface (UPI). The National Payments Corporation of India is a company that created, owned, and ran this instantaneous, real-time, rapid payment network (NPCI). The payment system has an interoperable protocol. This enables anybody to create an app that offers all participating banks’ client payments as a service. The central switch, bank, payment system provider (PSP), remitter, and beneficiary comprise the five parties that make up this system.

Payments are processed almost immediately and at no cost. The National Electronic Toll Collection (NETC), RuPay, Bharat Bill Payment System (BBPS), and Bharat Interface for Money (BHIM) are among the products that the NPCI has introduced in addition to UPI. The Public Finance Management System (PFMS), which was introduced in 2009, is an additional crucial element. permits the central government to handle, track, manage, account for, reconcile, and report money flows both into and out of the organisation. Over the past five years, the nation has experienced significant growth and has fortified its digital payment

ecosystem by augmenting both person-to-person (P2P) and person-to-merchant (P2M) payments through a variety of user-friendly and convenient digital payment mechanisms. The most popular payment method among citizens is now BHIM UPI, which has processed 803.6 crore transactions.

Table 3- India's total number and value of digital transactions during the past five years

YEAR	Total number of digital transactions (in crore)	Total value of digital transactions (in Rs. lakh crore)
2017-18	2,071	1,962
2018-19	3,134	2,482
2019-20	4,572	2,953
2020-21	5,554	3,000
2021-22	8,840	3,021
2022-23	9,192*	2,050*

**Till December, 2022*

Source: RBI, NPCI and Banks

Layer 3- Data Exchange

The creation of a new data governance model for the nation is the main goal of the third layer of the India Stack. The Data Empowerment and Protection Architecture (DEPA) policy architecture serves as its cornerstone, enabling data sharing between fiduciaries and third parties as well as the verification of digital documents that supplant traditional paper papers. With the help of Financial Sector Regulators, such as the RBI, Securities and Exchange Board of India (SEBI), Insurance Regulatory and Development Authority of India (IRDAI), and Pension Fund Regulatory and Development Authority (PFRDA), it permits the secure sharing of an individual's digital financial information with financial institutions, subject to consent.

Table 4 - Layers of India Stack

Name	Definition	Year of Launch	Operating Body
Identity Layer			
Aadhaar	A 12-digit unique identification number that is linked to biometric (fingerprints, iris, face) demographic (name, age, gender, address) and optional contact details (email, phone number)	2009	Unique Identification Authority of India (UIDAI)
eKYC	Electronic authentication of a customer's identity using their Aadhaar details	2013	Unique Identification Authority of India (UIDAI)
eSign	Service enabling Aadhaar holders to digitally and remotely sign documents with a legally valid electronic signature	2016	Controller of Certifying Authorities (CCA)
GSTN	A unique 15-digit identifier assigned to businesses and individuals who are registered under the GST regime in India. It is used to track and manage the tax liabilities and compliance of registered taxpayers under the GST system.	2017	The Goods and Services Tax Network (GSTN)
Udyam	A registration system for MSMEs in India, to make it easier for MSMEs to access government schemes and benefits.	2020	The Ministry of Micro, Small and Medium Enterprises (MSME)
Payments Layer			
AePS (Aadhaar enabled Payment System)	An interoperable financial system allowing customers to access and transact on their bank accounts by authenticating their Aadhaar	2010	National Payments Corporation of India (NPCI)
APB (Aadhaar Payment Bridge)	System for electronically channeling the Government benefits and subsidies in the Aadhaar Enabled Bank Accounts (AeBA) of the intended beneficiaries.	2011	National Payments Corporation of India (NPCI)
UPI (Unified Payments Interface)	Unified Payments Interface is an instant real-time payment system	2016	National Payments Corporation of India (NPCI)
BBPS (Bharat Bill Payment System)	Integrated bill payment system providing a centralized platform for the payment of telephone bills, utility bills, etc.	2016	National Payments Corporation of India (NPCI)
Data Layer			
Digilocker	Digitalization service that provides an account in cloud to every Aadhaar holder to access authentic documents	2015	Ministry of Electronics and Information Technology (MeitY)
Account Aggregator	Enables consented access and sharing any person's digital financial information in a secure manner among financial institutions regulated by Financial Sector Regulators, viz., RBI, Securities and Exchange Board of India (SEBI), Insurance Regulatory and Development Authority of India (IRDAI), Pension Fund Regulatory and Development Authority (PFRDA)	2021	Reserve Bank of India (RBI)

Source : IMF eLIBRARY, 2023

The Path Ahead: Experiences and Concerns

Financial inclusion has benefited from the widespread use of digital services. Financial service access was made easier with the use of digital ID and Aadhaar-based e-KYC services. The cost of delivering financial services has decreased because of digital ID. For a minority, Aadhaar served as their first identity, and over half of them used it

to create their first bank account (State of Aadhaar Report 2019). Between June 2020 and June 2022, the volume of all digital payments climbed thrice, while their value increased by 50%. Greater financial inclusion as well as the expansion of the company and economy have been made possible by the rise of digital payments in India and the availability of several simple and convenient digital payment options, including bill payments.

By providing users with anytime, anywhere access to their accounts and the ability to use their mobile phones to make payments, it has improved financial inclusion. Lending institutions may make more informed choices about retail and corporate lending as digital transactions immediately create a user's financial footprint. According to research, gender inequality in India may close more quickly thanks to digital financial services. Though they are still more in fintech than in traditional financial inclusion in 2017, gender disparities in financial inclusion have been narrowing and decreasing more in fintech-based financial inclusion between 2014 and 2017. The growth of digital payments has also been a major factor in economic development, helping to stabilise rural residents' earnings and increase sales for unofficial businesses. Wider use of digital payments might boost India's GDP per capita by three to four percentage points, according to statistics collected before the outbreak (Khera, 2017).

The foundational building block approach, which is the highlight of India Stack, is a model for other countries aspiring for digital transformation. The supportive ecosystem developed using Information Technology (IT) has helped to develop an efficient identity layer. In the place of multiple identity cards and databases, the country could shift to a massive biometric identity database. Another remarkable feature of India Stack is the interoperability. The India Stack's capabilities were affordable for anybody to use

since interoperability was facilitated by open standards. The country's DPI activities are operated, maintained, and ensured to continue by a variety of specialised organisations and authorities, including ReBIT and UIDAI.

Despite the revolutionary effect of India Stack, challenges have to be addressed before its full potential can be realised. Two of them are closing the digital divide and improving data privacy. The digital gap is a critical issue in the context of India. Greater connectivity and access to technology are often found in urban areas, but infrastructure, cost, and digital literacy are issues in rural areas. In comparison to rural regions, urban areas have about three times as many internet subscribers. There are 103 internet users for every 100 persons in metropolitan regions, compared to just 38 in rural ones. As per the NSO estimates, in India, there is still limited access to the internet. India's mobile broadband subscriber rate of 54 per 100 people is lower below the worldwide median of 79 and the emerging market nations' median of 80. Within the nation, there are also significant disparities in access. India has a low rate of smartphone penetration, despite its rise. Another issue is the low international bandwidth per user. According to Statista (2022), India has an international bandwidth per user of 0.06 Mbits/s, which is only half of the median for developing market countries but somewhat less than the worldwide median of 0.07. India lacks adequate data protection, which puts user privacy and other digital rights at risk in the area of cyber protection. A solid framework for data protection is required to protect citizens' privacy, prevent governments and organisations from collecting data without a reason, and hold them accountable for data breaches. This will promote safe data management practices and sufficient investments in cybersecurity.

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POLICY INTERVENTIONS BY THE JUDICIARY IN SHAPING OUR POLITY

Vinayak Sachin

Abstract

Public policy concerns framing rules and regulations for addressing or finding a practical and permanent solution for an issue related to the general public. It did not have any subject or area restrictions. During ancient times, the main objective of the state was to protect law and order and maintain the internal and external security of their territories, which can be called more over a police state. However, the idea of the state is quite different now; the government is not only a policeman but also a teacher, engineer, doctor, judge, etc..

With the evolution of the concept of the welfare state, it is bound to frame policies for almost all subjects under the sun. In the context of India, proper policy framing addressing the real issues of citizens can only be seen after 1947. However, ideas such as adopting economic policies

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have never been implemented democratically. It was always in the hands of the executives.

When we talk about issues relating to the sub-topic of judicial interventions in public policy, there is a vast area to be addressed and debated. The core idea of public administration is the effective implementation of public policy. Therefore, this must be performed by the government. However, if we analyze the historical evolution of post-independent judicial interventions, we notice that there is sufficient framing of policies on the bench rather than in the legislature and executives.

Earlier, the court took a stand of non-interference in public policy, and the most outstanding example is the AK Gopalan case¹, in which the Apex court decided that courts would not apply due process of law concerning Article 21. Later, in Maneka Gandhi case², the same apex took a U-turn regarding Article 21 and clearly said that the due process of law would be followed with Article 21, despite being a good judgment. It also criticizes Article 13, whether the power of judicial review existed in the Indian Constitution. However, it was a landmark decision in the history of the Indian judiciary because it paved the way for legal and substantial interventions by constitutional courts in the country in relation to public policy framing.

Another critical passive intervention by courts is to provide visionary guidelines for the legislature and executives in the country. Suppose we examine the case of Shah Bano Begum v. Mohd. Ahmed Khan³, the court first gave a consciousness of gender equality for all women concerning article 14 of the Constitution, which was never addressed by the legislature at that time. Along with cases such as the DK Basu v. State of the WB [Guideline against

1 AIR 5971950 SC 27

2 AIR 1978 SC

3 AIR 1985 SC 945

illegal arrest], *SR Bommai v. Union of India* [Misuse of Article 356], *Unni Krishnan J. P. v. State of A. P.* [Right to education], *Indra Sawhney v. The Union of India* [popularly known as the Mandal Commission case], exhibits that the constitutional court was always a pioneer in interpreting the Constitution for the welfare of the people.

Moreover, many more judges made laws that shaped and solved public issues that governments could not solve or answer, which were settled in benches rather than in democratic institutions like parliament and state legislatures. This highlights the weak and vacuum areas of the public administration system. Nevertheless, a crucial question arises: Who gives guidelines for competitive exams like NEET is the judiciary's duty? Or is the right to decide the tuition fee amount with the state or the bench? Finally, we need to know who is above whom in our polity.

Keywords: Public policy, Judicial interventions, Welfare state, Constitutional courts, Fundamental rights, Policymaking

Introduction

The judiciary is commonly accepted as a collection of courts that critically interpret, defend, and efficiently apply laws for the sake of the state. The judiciary is also responsible for disputes and providing an acceptable solution. In some countries, the judiciary applies common law. Judiciaries have set their work criteria under the separation of the power doctrine. On this basis, the judiciary does not make statutory laws or enforce them, and these are the responsibilities of the legislature and executive. The judiciary will only interpret, defend, and apply the law to each case.

In many jurisdictions, the judicial branch can change laws through judicial review. Courts are embodied with the power to annul the rules and laws of the state, which are incompatible with constitutional treaties or other international laws. In such cases, courts often use their

judicial review power to annul laws. In common-law countries, judges play an inevitable role in interpreting and implementing a constitution and, finally, creating a body of constitutional law. From this, we can infer that criticizing laws and applying human rational thought is the basis of interpretation; judicial officers interpret almost every type of legislation and legal document for clarity and proper implementation.

There are two types of legal system: common and continental. In the common-law system, the principles of justice are mostly judge-made laws or precedence. People can seek remedies through courts by referring to precedence. In the case of continental law, judges have fewer roles in interpretation because laws are well classified and codified.

Common law countries are the UK, the US, and India; examples of continental law countries are France and Spain.

In India, policy interventions are implemented by the judiciary on the grounds of proper implementation of equality and justice. The judiciary may not have a fixed agenda or prejudice for framing laws when an issue arises, and when there is a need to answer a question of law or an interpretation of any statute or law, there is scope for judicial intervention. The judiciary is the government's most trustworthy partner and is solely determined to interpret law. On this behalf, the doctrine of the separation of powers clearly defines that the court's decisions will be fully obeyed and enforced by all the other branches of the government. However, sometimes this may not happen, and in such times, enforcement failures occur where the executive fails to enforce judicial decisions either due to a lack of resources or the judicial decision's political and economic costs far outweigh the benefits.

General Interventions

Intervention is never the judiciary's primary function: it acts as a check and balance for the rest of the government's organs. If we analyze the Indian Constitution, it gives the judiciary the ultimate interpreter of the Constitution as per Article 147. Nevertheless, the Indian Constitution has never said anywhere that the courts have the power to decide whether the laws of parliament are just, fair, and reasonable.

In this context, courts must maintain a minimal distance from the executive in exercising their powers. General interventions occur mainly within the original jurisdictions of constitutional courts, such as framing new norms and legal status in terms of the administration of justice. For example, in the case of administrative tribunals, the first appellate body was the Supreme Court under Article 136; however, in the case of *Chandrakumar v. Union of India*⁴ the supreme court ordered that it can be challenged in the High Court under Article 226 of the Constitution.

A few other examples are *Satyanarayana vs. the Eastern Power Distribution Company* (2004), where Justice Gajendra Gadkar announced that if a worker is dismissed on the grounds of misconduct, then an inquiry on the same is compulsory and should be provided with an opportunity to place his arguments to defend himself. This judgement provided additional regulations to labor law, which was previously ignored by legislation.

Similarly, *Vishaka versus the State of Rajasthan* (1997) is a perfect example of judicial activism. The Supreme Court laid down guidelines against gender discrimination that should be applicable in all workplaces to ensure appropriate treatment for women. The honorable Supreme Court added that these guidelines should be treated as laws until the Parliament makes proper legislation.

4 (1997) 3 SCC 261

Sheela Barse v. State of Maharashtra (1983): A letter by a journalist, addressed to the Supreme Court, deals with the custodial violence of female prisoners in jail. In this case, the court treated this letter as a writ petition and ultimately acknowledged the matter.

Hussainara Khatoon v. In the state of Bihar (1979), the court recognized the inhuman and barbaric conditions of undertrial prisoners through the newspaper. Here, the apex court undertook the necessary action under Article 21 of the Indian Constitution and established the right to speedy trial as a fundamental right.

In *Romesh Thappar v. State of Madras* (1950), the honorable Supreme Court declared that the right to the press comes within the freedom of expression under Article 19(1), which resulted in the consciousness of press freedom in the country. All these interventions can be called general interventions, which apply and interpret laws to obtain transparency and administer proper justice.

Differences Between Judicial Intervention, Restraint and Overreach.

Before deepening policy-framing, we need an unambiguous notion of judicial activism and judicial restraint. Judicial activism implies the judiciary's cautious role in protecting the rights of citizens. The origin and practice of judicial activism are indebted to the USA.

Historian Arthur Schlesinger Jr. named this judicial activism in 1947. Justice V. R Krishna Iyer and Justice P. N Bhagwati, Justice D.A Desai, and Justice O. Chinnappa Reddy laid the foundation for Judicial Activism in India.

In India, the Supreme Court and High Court are responsible for checking the constitutionality of any law. If any law contradicts the provisions of the Constitution, the court can proclaim that the law is unconstitutional. Special attention should be paid to the fact that, in such instances,

subordinate courts do not have the power to review the constitutionality of laws.

The term Judicial Restraint is the exact opposite of Judicial Activism. Judicial Restraint refers to a judicial interpretation that limits the power of judges. Here, courts “restrain” their adjudication from setting new policies.

When Judicial Activism overpowers Judicial Adventurism, it is known as Judicial Overreach. Judicial Overreach occurs when the judiciary barges into the functioning of the legislative or executive areas of the government. Judicial Overreach is utterly unacceptable for a democratic country because it violates the principle of the separation of powers. On this note, the desirable solution for the judiciary is to step up only when the legislature or executive is in intense need.

Analysis of the three concepts through case laws.

Judicial activism

Judicial activism occurs when the executive and the legislature fail to achieve the desired results. The ineffectiveness and inactivity of the entire system causes judicial activism. Sometimes, the negligence of fundamental human rights has also resulted in judicial activism. Judicial activism gains importance mainly from the misuse and misinterpretation of constitutional provisions. The following are some popular examples of judicial activism.

(i) The Kesavananda Bharati case (1973): The apex court of India revealed that the executive had no role in changing the primary constitutional framework or negotiating and interfering with the same.

(ii) I. C. Golaknath & Ors vs. the State of Punjab and Anrs. (1967): The Supreme Court announced that Fundamental Rights revered in Part 3 should remain unaffected and thus cannot be modified by the legislative assembly.

Judicial Restraint

Judicial restraint provides stability among the three government wings: judiciary, executive, and legislative. The concept of judicial restraint allows the legislature and executives to follow their duties by upholding the laws created by the government. It creates respect for democracy and the ruling government by leaving policymaking in the hands of policymakers.

(i) S.R. The Bommai v Union of India (1994) is a clear example of judicial restraint. The judgement specified that judicial review is not feasible for some political matters. On behalf of the court, Article 356's potential was a political question, thereby denying judicial review. The court explained that it would avoid such circumstances in the future since it did not want to enter the political domain.

(ii) Similarly, in Almitra, H. Patel Vs. The Supreme Court of the Union of India (1998) refused to instruct the Municipal Corporation on undertaking responsibility for Delhi's cleanliness. In this incident, it stated that the court would only force the authorities to take responsibility for the duties imposed on them by law

Judicial Overreach

Because the legislature is delayed in its function, the judiciary leans to overreach its function, ultimately resulting in an argument between the legislature and the judiciary. The aftereffects of such an Overreach of the Judiciary are as follows:

Judicial overreach threatens the doctrine of the separation of powers and eventually breaks the spirit of the Constitution. It will create tension among the legislature and judiciary and will create a bad impression on the legislature

Judicial overreach in specific environmental, ethical, and political scenarios can create severe problems. Such areas require expert knowledge, and the procurement of such

knowledge can be an issue for the judiciary. If it provides judgment without proficiency on these issues, it erodes expert knowledge and harms the nation.

Judicial Overreach can sometimes create disrespect for an elective representation. This can damage the common beliefs in a democracy.

In short, courts must adhere to their jurisdictions and defend the doctrine of separation of powers. In 2007, the Supreme Court cautioned the other courts to follow judicial restraints. It stated, 'Judges must know their limits and try not to run the government. They must have modesty and humility and not behave like emperors.' Further, it said, "In the name of judicial activism, judges cannot cross their limits and try to take over states that belong to another organ of the state".

(i) A popular example of Judicial Overreach is the censorship of Film Jolly LLB II. It was filed as a writ petition and accused that the film mocked the entire legal profession as a joke, making it an act of disrespect and insult. The Bombay High Court selected a three-person committee to investigate and report the movie. Such a drastic action was viewed as inappropriate, as the Board of Film Certification was already there and conferred power to the Board. Nevertheless, the directors deleted four scenes based on the committee suggestions. It violates Article 19(2), restricting freedom of speech and expression.

(ii) On a PIL regard to road safety, the Supreme Court forbade the sale of liquor at retail stores, restaurants, and bars within 500 m of any national highway or state highway.

However, no confirmation from the court showed a relationship between the prohibition of liquor on highways and number of deaths. This judgement ultimately created income deprivation and a decline in employment. The case was a perfect example of an overreach, since the problem was administrative and required executive knowledge.

(iii) The National Judicial Appointment Act, which the Parliament passed in August 2014 as the 99th constitutional amendment act to create an autonomous body to appoint judges to the Supreme Court and the High Court by replacing the collegium system. Moreover, the act was challenged by the Supreme Court Advocates on Record v. Union of India⁵ case. In the above case, the Parliament's whole act was proclaimed as unconstitutional by the Honourable Supreme Court, which was quite unusual in a democratic country.

Policy intervention in the current scenario

The policy intervention in benches started with the famous AK Gopalan case⁶ in which the court said that Article 21 would not stand against the laws passed by the Parliament. However, in the Manekha Gandhi case⁷, the honorable Supreme Court adopted the due process of law, a new concept for the Indian Constitution. This movement paved the way for the judiciary to intervene in almost every aspect of administration.

Article 13 of the Constitution determines "law." The terms included in Article 13 provide an inclusive list. Policymaking is exclusive to executives and the legislature.

The realm of policymaking builds on the domain of administrative law. The policies formulated by the executive and legislature are implied to strengthen the smooth functioning of the nation. Complete knowledge of the state's resources is essential for creating better policies.

Justice K. S. Puttaswamy (Retd.) V Union of India⁸, the Supreme Court came forward to protect individual rights from the invasion of privacy.

This judgement assures the individual's privacy, even though a proper framework for protecting individual privacy

5 (2016) 5 SCC 1, (2016) 2 SCC (LS) 253

6 AIR 1950 SC 27

7 AIR 1978 SC

is still missing in the country. A proper legal framework for protecting privacy is crucial in a country such as India, where massive technological advances occur, which may threaten the right to privacy at any time.

The judgement further cleared the path for other well-known judgements such as the decriminalization of homosexuality in *Navtej Singh Johar v. Union of India* and put an end to the provisions for the crime of adultery in *Joseph Shine v. Union of India* case.

In *Lily Thomas v Union of India*, the court argued that politics should be free from criminalization. However, it is impossible to fully eliminate criminalization from the political system. Criminalization in the domain of politics will ultimately fade the fairness of elections, inefficient governance, lack of public interest in politics/politicians, and social conflict.

In February 2020, the Supreme Court made a declaration, which later became mandatory for all election candidates, including both in state- and central-level elections, to publish their criminal records. This judgment was made concerning the case of *Rambabu Singh Thakur v Sunil Arora and others*.

Christian Medical College, Vellore and Others v. Union of India and Others.

The Supreme Court prohibited states from performing separate entrance examinations for medical courses. The NEET score should be the only criterion for undergraduate admissions in various medical courses.

The Supreme Court established the Lodha Panel to investigate various allegations of the Indian cricket, including corruption, match-fixing, and betting disputes. The sole aim of the committee was to bring back the law and order to the BCCI.

The committee suggested that BCCI should be brought under RTI, legalizing cricket betting, and only state bodies should have voting rights. By contrast, teams such as Railways and Services should be promoted to associate members' status, excluding voting rights. However, these proposals were viewed as judicial overreach, since BCCI is an autonomous entity, so the Lodha Committee has no right to make such suggestions.

The government treated all the rules mentioned above by the Supreme Court as the Judicial Intervention.⁸

Conclusion

Judicial activism in India is prevalent, often restoring the human rights of marginalized and vulnerable segments of society. Both the Supreme Courts and High Courts have worked together for the sake of modern social policies, and the public is deeply concerned with the judiciary.

However, for a democratic nation, it is essential to follow the principle of the separation of powers and validate the authority of the three pillars of government. This is feasible only when the executive and legislative branches are fully efficient. The Judiciary should be careful about unfamiliar activities.

Today's Supreme Courts deal with a wide spectrum of topics, ranging from energy prices to malnutrition. Many similar areas consist of complicated inner layers, and the shortage of expert experience or knowledge in such areas can affect judgment. The new social justice bench provides such experiences and knowledge, which are appreciable. Nevertheless, setting the criteria for the working domain of the bench is essential.

Over the years, the Supreme Court tried very hard to reassure its trustworthiness, especially in the subsequent

8 2012; (2017) 10 SCC 1; AIR 2017 SC 4161

years after the emergency period. During these years, the Court also tried its best to overcome the prejudice of being elitist and be more approachable by the common man. The Supreme Court revamped itself as the voiceless with the help of judicial tools such as the PIL.

In the last three decades, we have witnessed the Supreme Court's successful participation in public policy. Such court interference has been limited and has fought to restore the reliability of political institutions. However, such interference cannot substitute for external policy recommendations.

In addition, such interruptions have limitations in working with a system where the administration is responsible for the executive and legislature rather than the judiciary.

The judiciary played an atypical role in shaping India's political sphere. Legends like Krishna Iyer and Justice P.N. Bhagwati made Indian courts accessible to public interest litigations (PILs), which later became a device for reformulating the Supreme Court as an active institution in the post-emergency days.

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