

NATIONAL SEMINAR

2025



Viksit Bharat @ 2047 & Viksit Odisha @ 2036

Challenges, Opportunities & The Way Forward



Committed to Excellence

D.A.V. SCHOOL OF BUSINESS MANAGEMENT

(Accredited by NAAC, AICTE, Managed by DAV CMC, New Delhi)

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THEME

Viksit Bharat @ 2047 and Viksit Odisha @ 2036:

Challenges, Opportunities & The Way Forward

SUB-THEMES

Governance & Public Policy
Women & Youth Empowerment
Industries and Entrepreneurship
Tourism & Urban Development
National Education Policy (NEP) 2020
Future AI: The Ecosystem of New Classroom
Information Technology & Digital Transformation
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From the Desk of Executive Editor

Dear Readers,

It is with immense pride and a deep sense of academic fulfilment that I present to you the **Seminar Proceedings 2025** on the theme “**Viksit Bharat @ 2047 and Viksit Odisha @ 2036: Challenges, Opportunities, and the Way Forward.**” This compilation brings together a rich interplay of ideas, critical reflections, and thought-provoking research from policymakers, academicians, development professionals, industry experts, and scholars.

The volume stands as a collective intellectual pursuit aimed at reimagining India and Odisha's development journey. It explores pathways for inclusive growth, sustainable development, and digital transformation, while also acknowledging the pressing challenges, economic disparity, environmental vulnerability, technological disruption, and governance gaps that must be addressed through innovation and collaboration.

This book serves not just as a record of the discussions held during the seminar but as a source of inspiration for future research, policy interventions, and civic engagement. It invites readers to think beyond traditional paradigms and actively participate in the mission of nation-building and state-level advancement. The abstracts and full papers published in this volume are the contributions of the respective authors. The editorial board of this National Seminar bears no responsibility for the authenticity, accuracy, or views expressed in the content.

I extend my heartfelt gratitude to the esteemed members of the Advisory Body of the National Seminar for their invaluable guidance and insights. Their wisdom and commitment have been instrumental in shaping the thematic direction and scholarly depth of this seminar.

I sincerely thank all contributors for their scholarly inputs and the editorial team for their unwavering support in bringing this vision to life. May this publication ignite fresh dialogues, nurture meaningful partnerships, and contribute significantly to the realization of a knowledge-driven, equitable, and prosperous India and Odisha.

Warm Regards,

Prof. (Dr.) D. N. Mishra
Executive Editor

TABLE OF CONTENTS

Sl. No.	Name of the Author(s)	Title of the Paper	Page No.
1	Dr. Mrinal Chatterjee	Odisha on the Rise: Steering India towards a Brighter Tomorrow	1
2	Mr. Madhusudan Mishra	Empowering Women and Youth: Pioneering a New Era for Viksit Bharat @2047 and Viksit Odisha @2036	7
3	Dr. Avadhesh Yadav	Learning from Shrimad Bhagavad Gita for Viksit Bharat @2047 and Viksit Odisha @2036: Challenges, Opportunities, and The Way Forward	14
4	Sonali Priyadarshini Dr. Sumitra Murmu Dr. Bijaya Ku. Sundaray	Reducing Turnover through Engagement: A Quantitative Analysis of Private Banking Professionals in Odisha	18
5	Dr. Shivani Guru Dr. Tushar Ranjan Sahoo Dr. Manjushree Nayak Dr. Bhanu Prasad Behera	Enhancing Learning Outcomes: Assessing Social Media-Based Learning Strategies with AHP	32
6	Dr. Dhaval Hariyani	A Study on Factors Influencing the Hybrid Work Culture for Middle Managers in Selected IT Website Development Companies of the Surat Region	39
7	Soumya Mohapatra Lingam Naveen Ajitav Acharya Abhipsa Mishra	Curricular Innovations and Institutional Support in Developing Entrepreneurial Competencies in Higher Education: A Conceptual Exploration	48
8	Sujata Mishra Mun Mun Mahapatra Piyush Agrawalla Debasish Bal	Tourism and Urban Development in Viksit Bharat 2047 and Viksit Odisha 2036: Challenges, Opportunities, and the Way Forward	54
9	Mr. Kartik Kumar Biswal	From Efficient Firms to a Developed Nation: Linking Working Capital Management to India's Tax Revenue and Viksit Bharat 2047	60
10	Dr. Manoj Kumar Dash	Analyzing the Opportunities and Challenges Faced by Entrepreneurs in Industry 4.0	66
11	Dr. Jhuma Saha Mrs. Udit Dubey	The Impact of AI on the Development of Future Classroom Environment	72
12	Dr. Kshirod Ku. Pradhan Rasam Setty Satya Venkat Krishna	AI in Agriculture: Addressing Odisha's Farming Challenges with Technology	77
13	Dr. Anuradha Mishra Ms. Rosy Barik	The Impact of Artificial Intelligence on Student Motivation and Self-Regulated Learning	84
14	Dr. Freeda Maria Swarna M. Dr. Barada Pr. Mohapatra Dr. Shaheed Khan	Hotel Management Students, Employment Skills Under the NEP Regime – Challenges and Opportunities	90
15	Mahi Tudu	Attitudes and Practices in Higher Education System of Tribal Students in Mayurbhanj District	97
16	Souvik Mukherjee	Tourism Industry and Economic Prosperity in Northeast India	103
17	Dr. John Major Thomas Joshmy Philip	Green Tourism in the Make in India Initiative	111
18	Dr. Debajani Palai	Digital Transformation of Odisha's Government – Aided Secondary Schools	115

ABSTRACTS

Sl. No.	Name of the Author(s)	Title of the Paper	Page No.
1	Dr. Rupsa Mahapatra Prof. (Dr.) Kishore Ku. Das	Adopting Technology in Education: A Deep Dive into the Technology Acceptance Model	121
2	Ms. Supriya Rout Prof. (Dr.) Kishore Kumar Das	Digital Transformation in Indian Banking Sector: A Case Study of SBI	122
3	Gouri Shankar Sethi, Puja Tripathy Prof. Kishore Kumar Das	Digital Transformation of Insurance: Exploring the Role of Digital Literacy and Insurtech for Inclusive Access in India	123
4	Ms. Rasmirekha Sahoo Prof. (Dr.) Kishore Kumar Das	The Impact of Information Technology on Security Risk Management in the Indian Digital Ecosystem: An Exploratory Study	124
5	Dr. Sunil Kumar Das Bendi Dr. Suchilipsa Das	Sustainable Livelihoods through Biofloc Aquaculture: Empowering Women SHGs in Odisha	125
6	Dharmesh Gohel	Odisha Rising: Powering Viksit Odisha 2036, Shaping Viksit Bharat 2047	126
7	Niranjan Mohapatra Manas Ranjan Mishra Ashutosh Dey Dhananjaya Sarangi	Shaping Classrooms of the Future: LRC – Led AR / VR at World Skill Centre	127
8	Dr. Madhumita Nayak	A Study on Holistic & Multidisciplinary Education, NEP 2020 (In the Context of Viksit Odisha @ 2036)	128
9	Dr. Rutuparna Dash Dr. Golakh Kumar Behera	Adoption of Technology in Reverse Supply Chain with Special Reference to Clothing Rental Sector	129
10	Dr. Truptimayee Maharana	Upshot Impact of Women Empowerment	130
11	Dr. Anwesweta Panigrahi	Unlocking Potential: Girls' Education in Odisha – Significance, Status and Barriers	131
12	Dr. Hari Narayan Sahu	India and New Labour Code: Facts and Fades	132
13	Dr. Madhu Vijayan Menon	AI-Enabled Classroom – Opportunities, Challenges, and the Way Forward	133
14	Dr. Samir Kumar Panigrahi	Role of Women and Youth Empowerment in Viksit Odisha	134
15	Dr. Suchisweta Pradhan	Impact of Self-Help Groups (SHGs) on Women Entrepreneurship: Rural Odisha Context	135
16	Y. Padmavati Dr. D. N. Mishra	Commerce Students' Perception on Adoption of NEP 2020 in Colleges under Higher Education Department in Kendrapara District	136
17	Lipikabala Mandal Dr. Debadutta Das	National Education Policy 2020: A Comprehensive Reform in India's Education System	137
18	Ankita Das	Women First, Development Next: The SHG Model for Viksit Odisha	138
19	Bismipriya Nayak Pragyan Parimita Nayak Kashinath Pati Rajat Kumar Mallick	Then and Now: Tracing the Journey from NPE 1986 to NEP 2020	139

20	Biswajit Sahoo Brahmaputra Biswal	Green Entrepreneurship: A Path towards Sustainable Development	140
21	Neha Joshi	Women's Financial Empowerment and Leadership: Bridging the Gap Through Financial Literacy and Independence	141
22	Prasenjit Kundu Sayani Ghosh	A Statistical Analysis of Sub-Centre and PHC Distribution for Rural Healthcare Accessibility in India	142
23	Ms. Sabana Nasreen Mr. Anurup Behera	Viksit Bharat 2047: A Vision for an Inclusive and Developed India	143
24	Shashank Kishor Singh Dr. Anju Singh	Climate Change and Sustainable Ecotourism: A Case Study of Similipal Tiger Reserve Area	144
25	Subrata Kumar Behera Raj Kishore Mohanta Soumya Nayak	Sustainable Biodiversity, Skill Development and Long-term Economic Growth through Nature-based Tourism in the State of Odisha	145
26	Ms. Soumya Mohanty Mrs. Utkalika Mishra	From Traditional to Transformative: AI's Impact on the Educational Ecosystem	146
27	Dr. Jogesh Ch. Mohanty Laxmidhar Sahoo	Viksit Bharat @2047: Issues and Challenges in Education	147
28	Pranab Rath	Digital Governance and Public Service Delivery: A Study of E-Governance Initiatives in India	148
29	Nikhil Mital	National Education Policy (NEP) 2020	149
30	Anuradha Dash Prof. Ayasakanta Mohanty Prof. Manoranjan Dash	Maternity Leave in India: Policy, Practice, and Gaps in Implementation	150
31	Mr. Bishnu Naik Dr. Nisrutha Dulla Dr. Snigdharani Panda Dr. Sugyanta Priyadarshini	Unveiling Research Trends in Sustainable Supply Chains, Production, and Consumer Behaviour: A Bibliometric Analysis	151
32	Deepa Biswal	Recent Trends in Human Resource Management in Indian Organisations	152
33	Prajnya Padmaja Panda Dr. Golakh Kumar Behera Nirakar Swain	Understanding the Subhadra Yojana's Contribution to Women's Economic Upliftment in Odisha	153
34	Pranati Palai Prof. Gouranga Charan Nanda	Realizing Effective Teacher Professional Development through NPST: A Framework for Transformative Change	154
35	Manisha Mishra	The Confluence of Youth and Women's Empowerment with the context in reference to Roadmap a Vision of Viksit Bharat 2047 and Viksit Odisha 2036	155
36	R Umesh Dr. Y. Nagaraju	Effectiveness of Direct Benefit Transfer in Promoting Financial Inclusion among Rural Communities – A Study in Bangalore Rural District	156
37	Sitansu Ranjan Swain Prof. Vijaya Rudraraju Dr. Sasmita Nayak	Assessing the Role of Microfinance in Empowering Women through SHGs: Case Study from Selected Districts in Odisha	157
38	Ms. Aruna Sharma, Mr. Bikash Sethy, Priyabrata Panda	Analysing Changing Trends: An Analysis of the Changing Dynamics of Policyholders' Attitudes Towards Life Insurance Products in Odisha	158
39	Mnassri Yasmine	Which Value Combinations Predict or Inhibit Resilient Leadership? A Configurational Analysis of Future Leaders' Traits	159
40	Ms. Monalisa Sethy, Ms. Sipranjali Sahoo, Mr. Amit Yadav	Empowering the Future: Analysing the Role of Women and Youth in Sustainable Development	160

41	Lelina Priyadarshine Aditi Choudhury	Techno-Cultural Synergy Leveraging AI and IoT for Safer Religious Gatherings and Climate-Resilient Agriculture in Odisha	161
42	Tanvi Agrawal Ipsita Mishra Dr. Jogesh Chandra Mohanty	Invisible Engines of Growth: Odisha as a Lab for Algorithmic Welfare, Silent Urbanization, and the Cultural Web3 Economy in Viksit Bharat @2047	162
43	Neha Natasa Dr. Anjali Panda	Industries and Entrepreneurship	163
44	Mr. Rishav Mohanty Sudhanshu Sekhar Sahoo	Leveraging Business Analytics in Financial Statement Audits: A Strategic Imperative for Viksit Bharat @2047 and Viksit Odisha @2036	164
45	Arpit Mohapatra Dr. Barada Pr. Mohapatra	Reimagining Education for the 21st Century: Building Future-Ready Campus Cultures to Bridge the Employability Dividend	165
46	Roopsikha Dutta, Ayushman Panigrahi, Priyadarshini Nayak	Revitalising Education through AI-Based Classrooms and the Future of the Learning Ecosystem	167
45	Snehashish Behera, Shreya Rath Sudhanshu Sekhar Sahoo	Employability Skills and Future Ready Campus Culture for Viksit Bharat	168
46	Sushri Souvikta Sahoo Alibha Bhanjdeo T Saikrishna Shroff	Redefining Success: Integrating Emotional Intelligence into Mainstream Education for a Resilient Bharat	169
47	Pratikshya Puan, Biswodeepa Garabadu, Sudhanshu Sekhar Sahoo	Business Analytics: Driven Supply Chain Optimization for Scalable Industrial Growth in Viksit Bharat	170
48	Jyoti Ranjan Swain	The Confluence of Youth and Women's Empowerment with Viksit Bharat 2047 and Viksit Odisha 2036	171
49	Adyasha Patnaik Sania Alam T. Sai Krishna Shroff	The Role of Sports in Breaking Gender Barriers: How Female Athletes and Youth Sports Programme Challenge Stereotypes	172
50	Sania Barik Dr. Anjali Panda	Impact of Mission Shakti in Empowering Women with special reference to Sambalpur and Bolangir district of Odisha	173
51	D. Manisha Dora, Allen R Nanda Dr. Satyajit Dikshit	The Role of Commerce and Management in achieving Viksit Bharat 2047 with reference to MSME Sector	174
52	Om Patra Mr. Debabrata Sahoo	From Farm to Future: Odisha's Agricultural Journey towards a Developed India	175
53	Samikkshya Mohanty Kritika Dalai Ms. Sonali Pattnaik	From Innovation to Impact: The Transformative Power of FinTech in the Green Bond Market	176
54	Rituparna Dhal Mr. Debabrata Sahoo	Empowering Dreams: Unveiling Tourism as a Golden Career Path for Odisha's Youth	177

Odisha on the Rise: Steering India towards a Brighter Tomorrow

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India's journey towards becoming a developed nation by 2047 hinges significantly on the performance of its eastern states, comprising of West Bengal, Odisha, Bihar, and Jharkhand, particularly the latter two states. For Bihar and Jharkhand are among the poorest state of India. West Bengal, once a major contributor accounting for 10.5% of GDP in 1960-61, has seen a steady decline to just 5.6% currently. Its per capita income has also dropped from 127.5% of the national average to 83.7%, falling behind states like Rajasthan and Odisha.

According to the report by the Economic Advisory Council to the Prime Minister (EAC-PM) released on September 18, 2024, the poorest states like Uttar Pradesh and Bihar have seen their GDP contributions dwindle, with Uttar Pradesh's share falling from 14% in 1960-61 to 9.5% and Bihar contributing only 4.3% despite being the third-most populous state.

The concept of beta convergence suggests that poorer regions should grow faster than richer ones over time. This theory has not played out as expected in India's eastern states. Despite their rich mineral resources, strategic locations, and vast potential, these states have historically lagged behind in economic development, presenting both a challenge and an opportunity for India's growth aspirations. Bihar's per capita GDP (\$1376) is comparable to that of Mozambique (\$1283), but the state's under-five mortality is higher (58 vs 54.8). In comparison Kerala's economy is often likened to a European country like Portugal due to its similar focus on services, a relatively high literacy rate, and a comparable per capita income.

As India strides towards becoming a global economic powerhouse, the development of the eastern states becomes essential for balanced national growth and reducing regional disparities. With their vast

agricultural base, mineral wealth, long coastal length (Odisha, 480 km and West Bengal 210 km) and emerging industrial potential (in case of West Bengal there has been long legacy of industries till about 1960s, when industries started closing down or shifting base), the eastern states are poised to contribute significantly to the country's development trajectory.

However, overcoming the persistent issues of poverty, low literacy rates (except West Bengal, as per 2011 census), inadequate infrastructure, lack of opportunities, political bickering are essential for unlocking this potential. So are overcoming a 'snail would be put to shame' work culture, a nihilistic mind set, visionless political class and a mal-functioning and often demoralised bureaucracy.

What are the Challenges that have Limited Development of Eastern States?

Economic Factors:

- **Underdeveloped Industrial Sector:** These states have not been able to establish a robust industrial base, or squander it (like in the case of West Bengal) primarily due to historical neglect, lack of investment, political bickering, inadequate infrastructure and lack of a social ecosphere conducive to trade and industry. This underdevelopment has led to limited job opportunities in the formal sector and stunted economic diversification, forcing a large portion of the population to rely on low-productivity agricultural and informal sectors.
- **Freight Equalisation Policy (1952):** It aimed to encourage factories to be built anywhere in India by subsidizing mineral transportation costs. However, it had detrimental effects on the eastern states of India by reducing incentives to

establish industries near mining areas, thereby encouraging the development of factories farther away and adversely affecting the economic prospects of these states.

- **Low Social Progress:** Social Progress Index (SPI) rankings shows that no state from the eastern region ranks among the high tiers of social progress (Tier 1 and Tier 2). West Bengal, and Odisha rank in Tiers 4 and 5, indicating lower middle and low social progress. Bihar and Jharkhand rank in Tier 6, representing very low performance in social progress. Analysis of 112 aspirational districts shows that the majority of districts in Bihar and Jharkhand rank among the bottom 20 nationwide.
- **Labour Market Issues:** Most eastern states reported a labour force participation rate (LFPR) above 60% for the population aged 15-59 in 2022-23, while Bihar's LFPR stood at only 50.9%, indicating lower workforce engagement. However, when it comes to workforce quality, over 83% of the workforce in these states falls into the semi-skilled category. This suggests a predominance of low-skilled labour that may struggle to drive productivity and economic growth. It also perpetuates poverty.
- **Agriculture Dependence:** A high reliance on agriculture, often characterized by low productivity and outdated farming practices, has hindered economic growth and income stability in these states. The agricultural sector's vulnerability to climate variations and market fluctuations further exacerbates economic instability.

Social and Human Development Issues:

- **Low Literacy Rates:** Particularly in states like Bihar and Jharkhand, persistently low literacy rates and poor-quality education have impeded skill development and workforce quality. This educational deficit has created a vicious cycle of low-skilled human resource, reduced productivity, and limited economic opportunities.
- **High Poverty Rates:** Persistent poverty has hindered social mobility and economic progress. In 2024, Jharkhand had a multidimensional

poverty rate of 28%, which is the second highest in India, after Bihar. High poverty rates have trapped large segments of the population in a cycle of low education, poor health, and limited economic opportunities, making it difficult to break out of intergenerational poverty.

Historical and Geographical Factors:

The eastern states of India bear the lasting impact of exploitative colonial policies that systematically stunted their industrial growth and economic development. British rule focused on extracting resources from these regions without investing in long-term development, creating a foundation of economic backwardness that has persisted long after independence.

The challenging terrain of many areas in these states, including dense forests, mountainous regions, and extensive river systems, has resulted in poor connectivity. This geographical isolation has significantly limited the access to markets and resources, hindering economic integration with more developed regions of the country.

Vulnerability to Natural Disasters:

The eastern states are particularly susceptible to frequent natural disasters such as cyclones, floods, and droughts. From the 1960s to the mid-2000s, 65% of global tropical cyclone fatalities were located in the Bay of Bengal. The west coast of India is less prone to cyclones. Odisha has faced no less than ten major cyclones in the last 12 years from 2012 and designated as a "Very High Damage Risk Zone-A" by the National Disaster Management Authority (NDMA). West Bengal has also suffered a lot. A tropical cyclone of specific intensity when it strikes the east coast of India and Bangladesh, usually produces a higher storm surge compared to that when such a cyclone strikes elsewhere in the world. This is because of the special nature of the coastline, the shallow coastal ocean topography and the characteristics of tide in the North Bay of Bengal region. Bihar is recognized as India's most flood-prone state, with approximately 76% of the population in North Bihar living under the persistent threat of severe flooding. Bihar makes up 16.5% of India's flood-affected area and contains 22.1% of India's flood-affected population. These recurring calamities

have repeatedly disrupted development efforts and economic activities, destroying infrastructure and livelihoods, and necessitating constant rebuilding (a very potent source of corruption) rather than progressive development.

Governance and Political Challenges:

Competitive federalism has been detrimental for poor states in India by exacerbating existing inequalities. Richer states, with better infrastructure and resources, attract more investments and skilled labour, leaving poorer states struggling to compete. This leads to a widening gap in development, as poorer states face challenges in funding essential services and attracting economic opportunities. Political bickering leading to a limbo in decision making, extortion by lumpen elements with political backing creating a sense of insecurity- keep the investors away, especially in Bihar and West Bengal.

Corruption and Bureaucratic Inefficiency:

Widespread corruption and administrative inefficiencies have hampered the effective implementation of development programs. Bihar and Jharkhand are among them five most corrupt states as per a survey. West Bengal and Odisha are among the least corrupt states.

Strategies to Develop the Eastern States

Despite the roadblocks, bottle-necks and irritants eastern states can be developed if there is a political and social will. Here are some issues and ideas that need to be implemented.

- **A Growth-conducive Social Eco-system:** The eastern states must have a growth-conducive social eco-system, which include rule of law, sense of security and wellbeing, opportunity of education and good health facility.
- **Economic Growth Initiatives:** The eastern states require targeted investments in infrastructure to improve connectivity and facilitate economic activities. Policies to attract private sector investments and promote industrialization are necessary. However, these policies must be environment-friendly. All economic growth initiative must foreground sustainability and eco-conservation, especially forest and water bodies. Enhancing connectivity through projects like the Eastern Dedicated Freight Corridor can facilitate the movement of goods and reduce transportation costs, making the region more attractive for industrial investments. In Odisha, Bihar and West Bengal waterways need to be developed and operationalised for cost and eco benefit. States like Odisha and Jharkhand, rich in minerals, could benefit from policies promoting value-added industries, such as setting up steel plants and refineries close to mining areas.
- **Social Development:** Comprehensive skill development programs are crucial for improving the quality of the workforce in the eastern states. Low skilled workers will create a never-ending loop of poverty. Initiatives to improve social indicators, particularly in health and education, are essential. States like Odisha, Bihar and West Bengal have seen positive outcomes from such programs, but more needs to be done to ensure that the local workforce can meet the demands of emerging industries. Improving social indicators in health and education is vital. So is employment/engagement.
- **Labour Market Improvements:** Measures to increase labour force participation, especially among women, are needed. The promotion of entrepreneurship and small businesses can create more employment opportunities. For instance, West Bengal's successful implementation of microfinance programs, with help of the Association of Microfinance Institutions in West Bengal, or Odisha's 'Mission Shakti' programme have empowered women to start small businesses, leading to improved family incomes and greater financial independence. Encouraging entrepreneurship through programs like Start-Up India and providing access to credit for small businesses can create more employment opportunities. This approach has proven effective in states like Bihar, where initiatives to support small-scale industries have led to significant job creation.
- **Cooperative Federalism:** By fostering collaboration between the central and state governments, resources and expertise can be more effectively allocated to address regional disparities. This approach encourages shared

responsibilities in policy implementation, infrastructure development, and socio-economic programs, ensuring that Eastern states receive the necessary support to overcome challenges.

- **Governance and Policy:** Strengthening local governance structures is crucial to ensure effective implementation of development programs. Collaborative efforts between state and central governments are necessary to address regional imbalances. The Krushak Assistance for Livelihood and Income Augmentation (KALIA) scheme is a program by the Govt. of Odisha to help farmers grow their agriculture, increase their income, and relieve their debt. Similarly, the Subhadra Yojana, launched by the Odisha government in 2024 and Kanyashree Scheme, launched by the West Bengal Govt. in 2013, shows good governance and effective policy by aiming to enhance the educational & economic status of women/girls from economically disadvantaged backgrounds.
- **Addressing Regional Disparities:** State governments in the eastern region must intensify their efforts to address regional disparities within the state and promote equitable development. This includes applying policies to improve social indicators and boost economic growth across the state.
- **Realizing Potential:** The eastern states have the potential to become engines of growth. The rich mineral resources of Jharkhand and Odisha offer opportunities for developing industries like steel, aluminium, and cement, which can contribute to the nation's industrial output. Promoting MSMEs in the eastern states of India can be advanced by enhancing access to financing and credit facilities, coupled with comprehensive support in technology and skill development and fostering a conducive business environment through streamlined regulations.
- **Bottom-up Development Model:** The states must adopt bottom-up development model instead of top-down. The civil service is chiefly responsible for policy formulation by providing ideas and relevant information. They should promote 'bottom-up' approach. Allow the PRIs and ULBs to come up with ideas. Allow

indigenous skills and solutions, wherever possible and feasible. Don't go for 'one size fits all' kind of idea or solution. Think long term. In India the major problem lies in implementation. Be realistic while planning. Be honest while implementing. Don't go for fancy ideas, go for workable, sustainable ideas and proper implementation.

In fact, the development model could be synced with Sustainable Development Goals (SDG) of United Nations (UN). Here are some ideas:

- **Empower local Govt** - (PRI and ULB) with greater financial autonomy and capacity-building programs to address SDGs like poverty alleviation (SDG 1) and quality education (SDG 4).
- **Enhance data-driven decision making** - Establish robust data collection and monitoring systems to track progress on SDGs at district and block levels. Leverage GIS for real-time insights into sectors like health (SDG 3) and climate action (SDG 13).
- **Promote public-private partnership** - Foster collaborations with private companies and NGOs for infrastructure development, education, and health initiatives. Encourage corporate social responsibility (CSR) efforts aligned with SDGs.
- **Strengthen Social Protection Schemes** - Improve the implementation and delivery of programmes like MGNREGA, PMAY, and PM-KISAN to tackle poverty, hunger, and inequality (SDGs 1, 2, and 10). Focus on reducing leakages and increasing transparency
- **Renewable Energy Adoption** - Develop policies to accelerate the deployment of solar, wind, and biomass energy projects in rural areas to achieve affordable and clean energy targets (SDG 7).
- **Sustainable Urban Development.** Design and implement urban planning strategies focusing on waste management, green spaces, and public transportation to achieve sustainable cities and communities (SDG 11).
- **Address Climate Resilience** - Develop region-specific climate adaptation and disaster resilience plans, particularly for flood-prone areas like Bihar and Odisha, to align with SDG 13.

- **Leverage Technology for Governance** - Implement digital governance tools for service delivery, grievance redressal, and citizen engagement. Use mobile apps and platforms for health, education, and skill development initiatives.
- **Capacity Building for Civil Servants** - Provide targeted training for civil servants and local officials on SDG integration into planning and governance to ensure alignment with regional priorities.
- **Participation of PRIs, ULBs and civil society in the development process** - Create mechanisms for active community involvement in policy formulation and implementation, especially in sectors like clean water and sanitation (SDG 6) and gender equality (SDG 5). Palli/Gram Sabha is a good system, provided it does not fall into political quagmire.
- **Issues of Equity & Inclusion, especially SCs, STs, Women and other vulnerable groups** - Education, economic empowerment, legal enforcement, and community engagement - are the four important areas to focus to promote equity and inclusion for marginalized groups. This could be done by:
 - **Enhance Access to Quality Education** - Establish well-funded schools in underserved areas with scholarships, mentoring programs, and residential facilities for SCs, STs, and girls. Focus on reducing dropouts, especially among adolescent girls.
 - **Economic Empowerment Initiatives** - Promote entrepreneurship and skill development programs tailored for SCs, STs, and women. Provide financial assistance, market linkages, and training to foster self-reliance.
 - **Inclusive Policy Design and Implementation** - Formulate policies with a focus on the specific needs of marginalized communities, ensuring adequate representation of SCs, STs, women, and other vulnerable groups in the policy-making process.
 - **Strengthen Affirmative Action** - Expand and reinforce affirmative action policies in education, employment, and good governance to provide opportunities for SCs, STs, and other disadvantaged groups.
 - **Strengthen Legal Protections** - Enforce existing anti-discrimination and anti-violence laws effectively. Establish fast-track courts to address cases of caste-based violence, gender-based violence, and other forms of discrimination.
 - **Address Social Stigma** - Conduct awareness campaigns to challenge caste-based discrimination, gender stereotypes, and other forms of bias. Engage community leaders, schools, and media in fostering a culture of equality.
 - **Ensure Land and Resource Rights** - Ensure secure land tenure for SCs and STs, particularly in tribal regions, by enforcing land rights and protecting natural resource access. Support sustainable livelihood projects.
 - **Make Healthcare Accessible** - Improve healthcare services in tribal and rural areas by deploying mobile clinics, telemedicine services, and culturally sensitive healthcare workers. Focus on maternal and child health, particularly for women in vulnerable communities.

Odisha Poised to Lead India

Odisha has an agriculture-based economy which is in transition towards an industry and service-based economy. It has enormous growth potential in terms of natural resources as well as human resources. With about 4.7% of India's land mass and 3.58% of the population, the State is 8th largest and 11th most populous in the country. It has 11% of the total water resources of the country with 21.01 lakh hectare meter of replenishable ground water to meet any magnitude of water requirement. There is a coastline of 480 kms. It is also endowed with 6.70 lakh hectare of inland fresh water area and 4.18 lakh hectare of brackish water area which provide enormous potential for fish production. In the mineral side, Odisha is one of the richest States having Chromite, Nickel, Bauxite ore and Coal deposits to the extent of 97.9%, 92.5%, 50.98%, 33.17% and 24.61% respectively of the total deposits of the country. The economy of Odisha is one of the fastest growing economies in India since 2012. Odisha has done reasonably well in infrastructure, education, health sector. Skill development and up-

skilling has received government priority. Its image as a poor, underdeveloped state with antiquated infrastructure has changed.

However, there are still miles to go. Regional disparities within the state persist. Work culture has not improved considerably, especially in the government sector. Last mile implementation/ connectivity of development programmes is still a huge problem. These fault-lines need to be addressed together by the government and the people, especially the civil society.

Here are some of my ideas to accelerate the growth in Odisha and make it more inclusive and meaningful:

- **Focus on Education, Skill enhancement, Health and Wellness and Livelihood:** Improve quality of education. Provide skill-training and create facility of up-skilling. Healthy human resource will bring in faster and quality development. The transition from agrarian economy to industrial and service economy requires handholding and up-skilling.
- **Regional Cooperation:** The four eastern states may have greater cooperation under an institutional framework to help inter-state trade and business; and amicable resolution of inter-state issue.
- **Leverage advantages.** Odisha is a water and power surplus state. Use and maintain water bodies and water-ways. Create more water bodies. Reduce ground water extraction through policy intervention and by creating water bodies. Surplus power, water and minerals will attract large industries.
- **Gradual reduction of Welfarism and 'free-bee' culture:** Hyper welfarism is often is politically motivated and becomes socially counter-productive. It requires political will, but it is one of the requirements to increase productivity, individual initiative for growth and self-esteem.
- **Improve work-culture, social and workplace**

etiquette, cleanliness in public places; provide basic amenities (like clean toilets, safe drinking water, fast public transport, etc). These are important to create an ecosphere which would boost the image of the State and directly benefit tourism and hospitality industry.

- **Humanising bureaucracy and police.** A public-centric bureaucracy, responsive police, fast and efficient medical service- these are hall marks of a developed and development-focused state.

As India moves forward, the development of its eastern states must catch up. Their vast natural resources, strategic locations, and untapped human potential position them uniquely to become the new growth engines of the Indian economy. By fostering inclusive growth, bridging regional disparities, and unleashing the latent potential of these states, India can ensure a more balanced and sustainable path to becoming a developed nation.

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Empowering Women and Youth: Pioneering a New Era for Viksit Bharat @2047 and Viksit Odisha @ 2036

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Abstract

As India envisions its transformation into a developed nation by 2047 and Odisha aspires for rapid progress by 2036, women and youth empowerment emerge as a crucial pillar in this journey. This paper explores the dynamic role of these demographic groups in shaping an inclusive, resilient, and innovative society. Women's empowerment through economic participation, political representation, education, and healthcare has the potential to catalyse widespread social and economic progress. Similarly, youth, as the vanguards of innovation, entrepreneurship, and governance, hold the key to unlocking India's and Odisha's developmental aspirations.

Economic independence is a significant determinant of women's empowerment. Initiatives such as Mission Shakti in Odisha and Mudra Yojana at the national level have enabled financial inclusion and entrepreneurship for women, transforming them into key economic contributors. Additionally, political representation through Panchayati Raj institutions and legislative interventions has positioned women as decision-makers, driving policies that address grassroots challenges. The rise of women-led businesses, startups, and cooperative movements further exemplifies how economic self-reliance translates into societal empowerment. However, persistent challenges such as gender discrimination, wage disparity, and limited access to credit demand strategic policy interventions.

Youth empowerment, on the other hand, is a cornerstone for sustained development. With over 65% of India's population below the age of 35, investment in skill development, employment opportunities, and leadership training is imperative. Programs like Skill India, Odisha Skill Development Authority (OSDA), and Start-Up India have

played a transformative role in equipping young individuals with the necessary skills. Moreover, the O-Hub initiative in Odisha has positioned the state as a hub for entrepreneurial activity, fostering technological innovations. Beyond employment, youth participation in governance and social activism is reshaping democratic engagement, with young leaders driving community-led initiatives in sustainability, digital transformation, and public welfare.

Education remains the foundation of empowerment. Initiatives such as Beti Bachao Beti Padhao, Kanya Shiksha Prakalpa, and Mo School Abhiyan in Odisha have significantly improved female literacy rates, reducing dropout rates and enabling more girls to access higher education. Moreover, digital literacy programs targeting rural youth have bridged the gap between aspiration and opportunity, ensuring that young minds contribute effectively to India's knowledge economy. Case studies from India and Odisha highlight the transformative power of strategic empowerment initiatives. The Lijjat Papad model, which turned rural women into successful entrepreneurs, and Kalinga Institute of Social Sciences (KISS), which has educated thousands of tribal youths, stand as testimonies to the impact of inclusive policies. Additionally, youth-led innovations in agriculture, renewable energy, and technology-driven startups are revolutionising economic landscapes. To realise the vision of Viksit Bharat @2047 and Viksit Odisha @2036, it is imperative to implement holistic strategies encompassing policy reforms, financial inclusion, digital empowerment, and gender-sensitive governance. Bridging socio-economic gaps, fostering leadership, and promoting an ecosystem of innovation and inclusivity will ensure that women and youth become the architects of a new, progressive India and Odisha. By investing

in their potential today, we are securing a future where development is not just an aspiration but a lived reality for every citizen.

Keywords: Women Empowerment, Gender Inclusion, Youth Leadership, Economic Development, Sustainable Growth

Introduction

Empowering women and youth are not just a policy imperative but a moral and economic necessity for India's growth trajectory. As India aspires to become a developed nation by 2047 (Viksit Bharat) and Odisha sets its sights on holistic development by 2036 (Viksit Odisha), integrating gender equality and youth participation in governance, economy, and society will be crucial. This paper delves into the strategies, policies, challenges, and successful models for empowering women and youth in India and Odisha. It presents case studies, best practices, and actionable recommendations to ensure inclusive progress.

The Importance of Women and Youth in Nation-Building

Women as Catalysts of Development

Women constitute nearly 50% of India's population and play a vital role in economic, social, and political spheres. However, challenges such as gender discrimination, wage disparity, and limited access to education and healthcare persist. Empowering women through education, entrepreneurship, and leadership roles will be instrumental in achieving Viksit Bharat @2047.

Youth as the Engine of Economic Growth

With over 65% of its population below the age of 35, India is a young nation. Odisha, too, has a significant youth demographic that can be harnessed for economic growth. Investing in skill development, digital literacy, and employment opportunities will enable India and Odisha to harness their demographic dividend effectively.

Policy Framework for Empowerment

National Policies

- **Beti Bachao Beti Padhao (BBBP)** – Promoting girl child education and preventing gender-based discrimination. The scheme was launched

by the Government of India in 2015 to address gender inequality and promote the education of girls. This initiative focuses on three key areas: preventing gender-based abortions, ensuring the survival and protection of girl children, and encouraging their education. It aims to change societal attitudes toward girls by raising awareness and providing financial incentives for their education. The government has implemented this scheme in districts with a low child sex ratio, encouraging families to value and support their daughters just as they do their sons. Through BBBP, numerous programs have been introduced at both the national and local levels to promote girls' education. Schools have been equipped with better facilities, scholarships have been provided, and awareness campaigns have helped communities understand the importance of gender equality. States like Haryana, which once had a low female birth rate, have seen significant improvements due to this initiative. However, continuous efforts are needed to ensure that every girl gets the opportunity to study, grow, and contribute to society.

- **Skill India Mission** – Equipping youth with industry-relevant skills. Launched in 2015, it is a national program aimed at equipping India's youth with the skills required for employment and entrepreneurship. This mission focuses on training individuals in various sectors such as manufacturing, healthcare, agriculture, and information technology. The government has set up skill development centres across the country to provide hands-on training and certification, helping young people secure jobs and become self-reliant. By bridging the gap between education and employment, this initiative ensures that Indian youth are better prepared for the modern workforce. One of the key components of the Skill India Mission is the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), which offers free skill training programs and financial support for trainees. Millions of youth have benefited from these programs and have found better employment opportunities in India and abroad. Additionally, the mission encourages entrepreneurship by providing guidance and financial assistance to

those interested in starting their businesses. As India moves towards becoming a global economic leader, the Skill India Mission plays a crucial role in empowering young individuals to contribute to the country's progress.

- **Stand-Up India & Mudra Yojana** – Supporting women entrepreneurs with financial aid. MUDRA Yojana: Empowering Small Businesses, Strengthening India. The Pradhan Mantri MUDRA Yojana (PMMY), launched in 2015, is a game-changing initiative that provides financial support to micro and small enterprises, the backbone of India's economy. By offering collateral-free loans under three categories—Shishu, Kishor, and Tarun—MUDRA enables budding entrepreneurs, small shop owners, artisans, and self-employed individuals to expand their businesses. The scheme bridges the gap in access to formal credit, ensuring that those with potential but limited financial backing can realise their dreams. With simplified loan processing and government-backed financial security, MUDRA has transformed the lives of millions, particularly women and marginalised communities, fostering economic self-reliance at the grassroots level. The success of MUDRA Yojana lies in its widespread reach and impact. It has fuelled employment generation by enabling small businesses to thrive, leading to increased productivity and financial inclusion. Street vendors, local manufacturers, and service providers who once struggled for funding now have the means to scale their operations. Additionally, MUDRA supports India's vision of becoming a \$5 trillion economy by strengthening small enterprises, which form the foundation of national growth. As lakhs of businesses flourish under this initiative, the MUDRA Yojana stands as a witness to the government's vow to fostering entrepreneurship and ensuring that economic opportunities reach every corner of the country.
- **Startup India** – Encouraging innovation and youth-led entrepreneurship. Igniting Entrepreneurship for a New India Startup India, launched in 2016 by the Government of India, is a flagship initiative designed to foster a culture of innovation and entrepreneurship. It aims to transform India into a hub for startups

by providing a conducive ecosystem that nurtures young businesses. With benefits like tax exemptions, simplified compliance, funding support, and incubation centres, this initiative empowers aspiring entrepreneurs to take bold steps in diverse sectors. The program also offers mentorship, networking opportunities, and access to government tenders, enabling startups to scale efficiently and compete globally. By removing bureaucratic hurdles and encouraging risk-taking, Startup India has become a catalyst for job creation and economic growth, positioning India as one of the fastest-growing startup ecosystems in the world. The impact of Startup India has been profound, with thousands of new ventures emerging across technology, healthcare, agriculture, and other sectors. It has helped bridge the gap between ideas and execution by fostering collaboration between startups, investors, and industry leaders. Through the Startup India Seed Fund and various accelerator programs, financial barriers are being reduced, allowing innovators to focus on groundbreaking solutions. With a vision of making India the world's largest startup hub, this initiative is not just supporting businesses but also fueling a mindset shift where young Indians see entrepreneurship as a viable and respected career path. As more success stories unfold, Startup India continues to inspire a new generation to dream big and build impactful enterprises.

- **National Education Policy (NEP) 2020** – Revamping education for better employability and inclusivity. The National Education Policy (NEP) 2020 marks a transformative shift in India's education landscape, aiming to make learning more holistic, flexible, and multidisciplinary. It introduces a 5+3+3+4 curricular structure, replacing the traditional 10+2 system, ensuring better alignment with a child's cognitive development. The policy emphasises experiential learning, vocational education from an early age, and the integration of Indian knowledge systems with modern education. It promotes the mother tongue or regional language as the medium of instruction until at least Grade 5, fostering better comprehension and cognitive

growth. Additionally, NEP 2020 envisions the universalisation of education from preschool to secondary level and aims to achieve 100% of the Gross Enrolment Ratio (GER) by 2030. A key highlight of NEP 2020 is its focus on technology-driven education, digital learning, and interdisciplinary studies, allowing students greater academic flexibility through the Multiple Entry and Exit System in higher education. The policy also pushes for autonomy to institutions, encouraging innovation in curriculum design and research. It prioritises teacher training and recruitment reforms, ensuring a well-qualified, motivated workforce. Furthermore, the establishment of the National Assessment Centre – PARAKH seeks to revamp the examination system, making assessments more competency-based. By emphasising equity, inclusivity, and lifelong learning, NEP 2020 aims to position India as a global knowledge hub, aligning education with the demands of the 21st-century economy and workforce.

- **Digital India** – Enhancing technological accessibility for women and youth. The Digital India initiative, launched in 2015, is a visionary program aimed at transforming India into a digitally empowered society and knowledge economy. It focuses on three core areas: digital infrastructure, digital services, and digital literacy. The initiative has significantly enhanced internet penetration, making government services accessible through platforms like DigiLocker, UMANG, and e-Governance portals. The expansion of BharatNet, providing high-speed broadband to rural areas, has been a game-changer in bridging the urban-rural digital divide. Digital India has also revolutionised financial transactions through UPI (Unified Payments Interface), enabling seamless digital payments and boosting financial inclusion. A major impact of Digital India is seen in governance, where initiatives like Aadhaar-enabled services, e-KYC, and direct benefit transfers (DBT) have minimised corruption and ensured efficient service delivery. The Make in India and Startup India programs have also received a digital boost, fostering innovation and entrepreneurship. Digital education platforms

like SWAYAM, Diksha, and e-Pathshala have democratised learning, making quality education accessible to millions. Additionally, the push for cybersecurity and data protection ensures a safe digital ecosystem. By integrating technology into every sector, Digital India is not just enhancing connectivity but also driving economic growth, empowering citizens, and reinforcing India's position as a global digital leader.

Odisha-Specific Initiatives

Mission Shakti: Empowering Women, Transforming Odisha

Mission Shakti, launched by the Government of Odisha, is a revolutionary initiative that has redefined women's empowerment in the state. Focused on strengthening Self-Help Groups (SHGs), the program has provided millions of women with financial independence, skill development, and livelihood opportunities. By offering interest-free loans, training in entrepreneurship, and direct linkages with government procurement programs, Mission Shakti has enabled women to take charge of their economic future. From tailoring units and food processing enterprises to digital banking services, SHG women are now active contributors to Odisha's economic growth. This initiative has not only elevated their financial status but also fostered confidence, leadership, and a sense of social responsibility among women across rural and urban landscapes.

The impact of Mission Shakti extends beyond financial inclusion—it has transformed societal perceptions and created a network of empowered women at the grassroots level. Women engaged in SHGs are now playing crucial roles in public distribution systems, midday meal schemes, and even disaster management efforts. The Odisha government's decision to form a dedicated Mission Shakti Department further strengthens this initiative by providing institutional support and enhanced financial backing. Through this program, the state has demonstrated how inclusive development can be driven by women-led enterprises. Mission Shakti is not just a scheme; it is a movement that has turned women into agents of change, fostering self-reliance and dignity.

The KALIA Substitute Scheme: A New Dawn for Farmers

The Odisha government's Substitute Scheme for KALIA (Krushak Assistance for Livelihood and Income Augmentation) is a bold step toward ensuring long-term agricultural sustainability and farmer welfare. While KALIA provided direct financial aid to small and marginal farmers, the substitute scheme integrates these benefits with broader agricultural reforms. This restructured initiative includes enhanced credit facilities, better insurance coverage, and direct investment in farm infrastructure to strengthen rural livelihoods. By focusing on sustainable farming practices, the scheme encourages diversification into horticulture, fisheries, and allied sectors, making agriculture more resilient to climate change and market fluctuations. The renewed approach ensures that farmers are not just receiving financial assistance but are also equipped with the necessary resources and skills to increase productivity and profitability.

A key strength of the substitute scheme lies in its farmer-centric approach, ensuring that benefits reach the most vulnerable sections, including landless agricultural labourers. By integrating KALIA's assistance with central government programs such as PM-KISAN, Odisha has created a synergised support system for farmers, reducing dependency on subsidies while promoting long-term economic stability. Moreover, the scheme encourages cooperative farming and digital innovations, enabling farmers to access real-time market prices and modern techniques. This transition marks a significant shift from short-term financial relief to a comprehensive, growth-oriented model that secures Odisha's agrarian future. The substitute scheme is not just about aid it is about empowering farmers to thrive in a changing agricultural landscape.

- **Biju Yuva Sashaktikaran Yojana** – Providing financial support for higher education. The Biju Yuva Sashaktikaran Yojana was a visionary initiative by the Odisha government aimed at empowering the youth with knowledge, skills, and technology. Through this scheme, thousands of students received free laptops, bridging the digital divide and enabling them to compete in an increasingly technology-driven

world. It focused on enhancing employability by providing financial aid for skill development and higher education. The scheme played a pivotal role in nurturing young minds, ensuring they had the right tools to succeed in academics and professional careers. To build on its success and meet the evolving needs of the youth, the Odisha government introduced a **substitute scheme** that expands beyond just digital empowerment. The new scheme encompasses a broader spectrum of skill development, entrepreneurship support, and career-oriented training, aligning with modern employment trends. It integrates industry-relevant courses and hands-on training to create job-ready youth.

- **Mukhyamantri Karma Tatpara Abhiyan (MUKTA)** – Creating livelihood opportunities for youth in urban areas. The Mukhyamantri Karma Tatpara Abhiyan (MUKTA) is a groundbreaking initiative designed to uplift the urban poor by creating sustainable livelihood opportunities. Launched during the COVID-19 pandemic, it provided immediate relief by generating employment for thousands of urban informal workers, particularly women and migrant labourers. The scheme focuses on community-driven projects such as water conservation, road construction, stormwater drainage, and public space beautification. By integrating these workers into meaningful development activities, MUKTA ensures not just financial security but also a sense of dignity and ownership in urban progress. Beyond being just a livelihood scheme, MUKTA is a model of inclusive urban development that aligns with the principles of self-reliance and sustainability. It prioritises the participation of women's self-help groups (SHGs) and vulnerable communities, empowering them through guaranteed work opportunities. By strengthening urban infrastructure while simultaneously addressing unemployment, the scheme creates a ripple effect of progress, improving the quality of life in cities and towns across Odisha.
- **Odisha Skill Development Authority (OSDA)** – Training youth for industry-oriented skills. The Odisha Skill Development Authority (OSDA) is a pioneering initiative by the government

of Odisha to transform the state's youth into a highly skilled workforce that is equipped for the demands of the global economy. With a strong focus on industry-aligned training, OSDA bridges the gap between education and employment through innovative programs like "Skilled in Odisha", which has gained national and international recognition. By partnering with leading industries, technical institutes, and global skill organisations, OSDA empowers youth with cutting-edge skills in sectors such as manufacturing, healthcare, hospitality, IT, and green energy. Its state-of-the-art World Skill Centre (WSC) in Bhubaneswar, modelled on Singapore's best practices, stands as a beacon of excellence, providing world-class vocational training and enhancing employability. Beyond technical expertise, OSDA fosters entrepreneurial spirit and soft skills, ensuring holistic development that prepares youth not just for jobs but also for leadership roles in emerging industries. Special attention is given to marginalised communities, women, and rural youth, making skill development an inclusive movement. The success of OSDA is reflected in Odisha's increasing representation in India Skills and World Skills competitions, demonstrating the state's commitment to excellence. With a vision to make Odisha the Skill Capital of India, OSDA continues to innovate, inspire, and uplift, paving the way for a self-reliant and future-ready workforce that contributes to the state's socio-economic progress.

Case Studies of Women and Youth Empowerment

- **Case Study 1: Women-led Entrepreneurship in Odisha:** A successful example of empowerment is the transformation of **Mission Shakti SHGs** in Odisha, which has uplifted millions of women by providing microfinance and self-employment opportunities. Women-led cooperatives have flourished in agriculture, handicrafts, and food processing industries, contributing to the state's GDP.
- **Case Study 2: Digital Empowerment through Self-Employment:** The **Rural BPO Model** in Telangana and Odisha has employed thousands of women and youth, enabling them to work

remotely. Such initiatives bridge the digital divide and create sustainable livelihoods.

- **Case Study 3: Youth-led Startups Driving Economic Growth:** Young entrepreneurs in Bhubaneswar's **Startup Hub** have successfully developed AI-driven agrotech solutions, improving farmers' productivity. Government support through incubators and funding has been crucial in fostering innovation.
- **Case Study 4: Women in Leadership:** The **50% reservation for women in Panchayati Raj Institutions (PRIs)** in Odisha has led to transformative grassroots leadership. Women sarpanches have initiated community-driven development projects, improving sanitation, education, and healthcare in rural areas.

Challenges Hindering Empowerment

- **Gender-based Discrimination** – Women still face societal and economic barriers.
- **Unemployment and Underemployment** – Youth lack access to quality jobs.
- **Education-Industry Mismatch** – The curriculum does not align with market needs.
- **Digital Divide** – Limited access to digital resources in rural areas.
- **Limited Financial Inclusion** – Women entrepreneurs struggle to access credit and investment.
- **Patriarchal Mindset** – Restrictive social norms hinder women's growth.

Strategies and Suggestions (Future Research) for Achieving Viksit Bharat @2047 and Viksit Odisha @2036

Education and Skill Development

- Expanding vocational education aligned with Industry 4.0 demands.
- Promoting STEM education among women to break gender barriers.
- Establishing youth incubation centres in every district.

Financial Inclusion and Entrepreneurship

- Strengthening microfinance networks for women-led businesses.

- Encouraging startup-friendly policies with tax incentives for youth.
- Enhancing digital payment ecosystems to support rural entrepreneurs.

Leadership and Political Participation

Ensuring gender parity in political representation.

Training young leaders in governance and policy-making.

Establishing youth advisory councils at the state and national levels.

Leveraging Technology for Empowerment

Digital literacy campaigns targeting rural women and youth.

Establishing smart classrooms in every village.

Expanding AI-driven skill training programs.

Conclusion

Empowering women and youth are the cornerstone of India's vision for a developed nation by 2047 and Odisha's aspiration for progress by 2036. By leveraging education, skill development, financial inclusion, and technology, India and Odisha can foster a more inclusive, equitable, and prosperous society. The case studies and policy recommendations in this paper highlight the roadmap for a sustainable future. The time to act is now an empowered India and Odisha will not only be a beacon of development but also an inspiration for the world.

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Learning from Shrimad Bhagavad Gita for Viksit Bharat @2047 and Viksit Odisha @2036: Challenges, Opportunities and The Way Forward

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Abstract

The vision of a Viksit Bharat (Developed India) by 2047 and a Viksit Odisha (Developed Odisha) by 2036 requires a comprehensive framework that aligns modern developmental goals with ancient wisdom. One such source of wisdom is the Shrimad Bhagavad Gita, which provides timeless principles for personal growth, ethical leadership, and social harmony. In Shrimad Bhagavad Gita Yadavshreshth, God Shri Krishna Vasudev has explained many aesthetic values and morals for the development of human beings, which finally leads to the overall development of the Nation at large. This research paper explores how the teachings of the Bhagavad Gita can guide the developmental journey of India and Odisha, analysing the challenges, opportunities, and strategies for achieving these goals. The paper also presents actionable insights on economic, educational, social, and cultural development through the lens of Gita's philosophy.

Keywords: Shrimad Bhagavad Gita, Viksit, Bharat, Odisha, Development

Introduction

The year **2047** marks the **100th year of India's independence**, a milestone for the Nation to achieve its vision of becoming a **Viksit Bharat**, or a developed country. In parallel, **Odisha** has set its sights on becoming a **Viksit Odisha by 2036**, a regional milestone that complements India's national vision. Integrating **ancient spiritual wisdom** with **modern strategies** can benefit both of these developmental goals.

The Shrimad Bhagavad Gita, one of the most revered texts in Indian philosophy, offers a rich repository of teachings that can help address contemporary

challenges and provide a roadmap for balanced and inclusive growth. Through its emphasis on duty (Dharma), knowledge (Jnana), action (Karma), and detachment (Vairagya), the Gita offers a framework that can guide leadership, governance, societal values, and personal well-being.

This paper explores the application of the Bhagavad Gita's teachings in India's development and Odisha's growth, considering the challenges, opportunities, and strategies for achieving a prosperous and sustainable future.

The Teachings of the Bhagavad Gita: A Foundation for Development

The Shrimad Bhagavad Gita imparts several valuable key principles that serve as timeless guidance for both individual and collective growth. Rooted in deep spiritual wisdom and practical philosophy, its teachings transcend religious boundaries and offer a universal framework for living a purposeful and balanced life. The most prominent teachings include:

Dharma (Righteous Duty): The Gita advocates for performing one's duty without attachment to the results. This principle can guide governance and leadership by emphasising ethical leadership, accountability, and service to the people. This also leads to making life happier and thinking positively always. The same thing is explained in Chapter 2 i.e.

Bhagavad Gita: Chapter 2, Verse 31

स्वधर्ममपि चावेक्ष्य न विकम्पितुमर्हसि ।
धर्म्याद्धि युद्धाच्छ्रेयोऽन्यत्क्षत्रियस्य न विद्यते ॥

Meaning: Besides, considering your duty as a warrior, you should not waver. Indeed, for a warrior, there is no better engagement than fighting for the upholding of righteousness.

Karma (Action): The Gita stresses the importance of selfless action for the benefit of society, which can influence the Nation's focus on **sustainable development, community welfare, and inclusive growth**. Karma without any demand and thought of fruit is the ultimate worship of any action, as rightly explained in Chapter 2 i.e.

Bhagavad Gita: Chapter 2, Verse 47

**कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ॥**

Meaning: You have a right to perform your prescribed duties but are not entitled to the fruits of your actions. Never consider yourself to be the cause of the results of your activities, nor be attached to inaction.

Jnana (Knowledge): Knowledge is emphasized as a tool for enlightenment and progress. This teaching underlines the importance of **education, innovation, and technological advancement** in Odisha's and India's development. This 'knowledge' is propounded correctly in Shrimad Bhagavad Gita as below

Bhagavad Gita: Chapter 4, Verse 33

**श्रेयान्द्रव्यमयाद्यज्ञाज्ज्ञानयज्ञः परन्तप ।
सर्वं कर्माखिलं पार्थ ज्ञाने परिसमाप्यते ॥**

Meaning: O subduer of enemies, sacrifice performed in knowledge is superior to any mechanical material sacrifice. After all, O Parth, all sacrifices of work culminate in knowledge.

Sankhya Yoga (Path of Knowledge and Detachment): This teaching advocates maintaining equanimity and detachment while engaging in the world. It suggests that, in the pursuit of development, we must remain rooted in values while being open to **change, technology, and global integration**. This also supports adopting and utilising the latest means to make work and act with ease.

Brihadaranyaka Upanishad 2.4.5:

**“य इह नानेव देखते सदा, पश्यन् ब्रह्मात्मस्वरूपम् ।
न स तं न अनन्यं विन्दति, शान्तिपरं न पतति ॥”**

Meaning: “The one who perceives the multitude of things as separate, but always perceives the Self as Brahman (the ultimate reality), does not fall into confusion and is not attached to the dualities. This is the state of ultimate peace and liberation.”

This verse encapsulates the central idea of Sankhya

Yoga—realising that the true self (Atman) is one with Brahman and transcending the illusion of dualities. It emphasises the knowledge of the oneness of existence, which is central to the Vedantic understanding of Sankhya Yoga. This teaching reflects the Advaita Vedanta view, which holds that the ultimate realisation is the non-dual nature of the self and supreme consciousness.

Sthitaprajna (Steady Wisdom): The Gita describes a person with steady wisdom as someone who remains unaffected by joy or sorrow, a concept essential for **resilience** in the face of global challenges like climate change, economic instability, or social inequality. This idea is the seed of the Sustainable Development Goals (SDG). This Steady Wisdom is correctly explained in Shrimad Bhagavad Gita in Chapter 02, Verse 55.

Bhagavad Gita: Chapter 2, Verse 55

**श्रीभगवानुवाच । प्रजहाति यदा कामान्सर्वान्पार्थ
मनोगतान् ।
आत्मन्येवात्मना तुष्टः स्थितप्रज्ञस्तदोच्यते ॥**

Meaning: The Supreme Lord said: O Parth, when one discards all selfish desires and cravings of the senses that torment the mind and becomes satisfied in the realisation of the self, such a person is said to be transcendently situated.

By integrating the timeless teachings of the Shrimad Bhagavad Gita, India and Odisha can lay a robust and sustainable foundation for holistic development. These spiritual and philosophical principles, when applied in governance, education, leadership, and social initiatives, can help ensure that progress is not only material but also ethical and inclusive. Ultimately, this integration will pave an enlightened and ecstatic path toward national development—where prosperity is harmonized with peace, growth with ethics, and innovation with tradition. It is through such a balanced approach that India and Odisha can emerge as global examples of spiritually anchored, people-centric progress.

Challenges in Achieving Viksit Bharat and Viksit Odisha

- **Economic Inequality:** One of the foremost challenges is the disparity in economic development between urban and rural areas. While certain regions of India and Odisha are

growing rapidly, others continue to face poverty, unemployment, and a lack of infrastructure. This is dangerous for the nation in overall.

- **Environmental Sustainability:** Climate change and environmental degradation have emerged as some of the most pressing challenges of our time, posing serious threats to ecosystems, livelihoods, and long-term human well-being. Rising global temperatures, erratic weather patterns, depleting natural resources, and increasing levels of pollution are already affecting millions of lives and placing immense strain on biodiversity and environmental stability.
- **Social Inequality:** Despite advancements in education and healthcare, **social inequalities** such as caste-based discrimination, gender inequality, and lack of access to basic amenities remain pervasive, especially in rural and marginalised communities.
- **Technological Disruption:** While technology can potentially propel India and Odisha into the future, there is also the risk of technological unemployment and the digital divide. Ensuring equitable access to technology is vital for inclusive development.
- **Political and Governance Challenges:** Corruption, inefficiency, and the lack of effective leadership at various levels of government can slow down the pace of development. Political will and transparent governance are key to sustainable development.

Opportunities for Growth

- **Technological Advancements:** India and Odisha stand at a transformative juncture where the rapid advancement of technology and innovation can be strategically harnessed to accelerate development across key sectors such as education, healthcare, agriculture, and infrastructure. By embracing cutting-edge technologies, both the nation and the state can realize their ambitious visions of Viksit Bharat (Developed India) and Viksit Odisha (Developed Odisha).
- **Human Capital Development:** With a predominantly young population, India and Odisha possess a powerful demographic advantage that can serve as a catalyst for long-term economic and social transformation. This youthful energy, if properly nurtured and directed, has the potential to shape a future that is innovative, resilient, and globally competitive.
- **Sustainable Practices:** The increasing global focus on sustainability allows India and Odisha to adopt eco-friendly and resource-efficient practices. With its rich natural resources, Odisha can become a leader in green technologies, sustainable agriculture, and renewable energy.
- **Cultural Heritage and Globalization:** India's rich cultural heritage can significantly shape the Nation's global identity while embracing globalisation. By combining traditional wisdom with modern technology, India and Odisha can create a development model that is both forward-looking and rooted in values.

Applying Bhagavad Gita's Teachings to Address the Challenges

- **Dharma in Governance:** Leaders and policymakers must adhere to Dharma (righteous duty) by upholding the values of justice, integrity, and social responsibility. Ethical governance can significantly reduce corruption, improve transparency, and ensure that development benefits all sections of society.
- **Karma Yoga in Action:** Focusing on selfless action in governance, education, and business can help create a service-oriented mindset. The Gita's principles encourage individuals and organisations to focus on societal well-being rather than personal gain, helping foster a sense of responsibility for sustainable development.
- **Knowledge and Innovation:** The Jnana (knowledge) from the Bhagavad Gita can be applied to developing education systems emphasising critical thinking, ethics, and innovation. Encouraging scientific research and technological development while maintaining ethical boundaries can propel India and Odisha towards their goals.
- **Sthitaprajna for Resilience:** The Gita's teaching on steadiness in the face of challenges can help leaders and citizens maintain mental resilience during times of adversity, such as natural

disasters, economic downturns, or social unrest. A collective spirit of resilience will be necessary to navigate the complex challenges ahead.

The Way Forward: Strategies for Achieving Viksit Bharat and Viksit Odisha

- **Education Reform:** Education is the foundation for building Viksit Bharat and Viksit Odisha. By focusing on holistic education that integrates moral values, critical thinking, and technological skills India and Odisha can equip future generations to tackle modern challenges with wisdom.
- **Economic Policies for Inclusivity:** Economic policies must focus on inclusive growth, ensuring that all sections of society benefit from development. Special attention should be given to rural development, women's empowerment, and job creation in both traditional and emerging sectors.
- **Sustainable Infrastructure Development:** Sustainable infrastructure projects, such as green buildings, smart cities, and renewable energy sources, should be prioritised. Additionally, Odisha can be a hub for eco-tourism and clean energy technologies.
- **Social Reforms:** Promoting social equality through gender equity, inclusive healthcare, and education for all is crucial for achieving the vision of a developed India and Odisha. Community participation in governance should be encouraged, empowering people at the grassroots level.
- **Strengthening Governance:** Good governance, rooted in ethical principles and transparency, will be vital. Technology can streamline services and reduce corruption, ensuring that the benefits of development reach all citizens.

Conclusion

The vision of a **Viksit Bharat by 2047** and **Viksit Odisha by 2036** is challenging but achievable. By integrating the wisdom of the **Shrimad Bhagavad Gita** with modern economic, social, and technological development strategies, India and Odisha can navigate the complexities of the 21st century and build a prosperous, sustainable future.

The Gita's teachings on **righteous action**, **knowledge**, **resilience**, and **selfless service** offer a robust guiding framework for leaders, policymakers, and citizens alike as they work towards these ambitious goals.



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Reducing Turnover Through Engagement: A Quantitative Analysis of Private Banking Professionals in Odisha

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Abstract

High employee turnover in the private banking sector poses a significant challenge to organisational sustainability, particularly in regional markets such as Odisha, India. This study, *Reducing Turnover Through Engagement: A Quantitative Analysis of Private Banking Professionals in Odisha*, investigates how various employee engagement factors influence employee engagement and, in turn, affect turnover intentions. The primary objective is to assess the impact of seven independent variables: leadership, organization policy, work environment, employee training, career progression, reward and recognition, and job autonomy, on employee engagement and their subsequent intention to stay or leave. A structured questionnaire was administered to 250 professionals employed across leading private banks in Odisha. Using statistical tools such as descriptive statistics, factor analysis, and multiple regression analysis, the study examined the strength and direction of relationships between the independent variables and employee engagement, as well as between engagement and turnover intentions. The results indicate that all seven variables have a positive and significant influence on employee engagement, and a significant negative relationship exists between employee engagement and turnover intentions among private banking professionals in Odisha. Higher levels of engagement were found to reduce employees' intentions to leave their organisations significantly. This research contributes to both academic literature and practical HR strategies by offering a comprehensive model that links employee engagement factors to employee retention through engagement. It emphasises the need for private

banks to shift from reactive retention tactics to proactive engagement frameworks that foster long-term commitment.

Keywords: Employee Engagement, Turnover Intentions, Private Banking Sector, Employee engagement Factors, Human Resource Practices.

Introduction

Employee turnover has emerged as a critical concern for organizations across industries, and the private banking sector is no exception. In India, where the banking industry has undergone rapid expansion and privatization, retaining skilled professionals has become a strategic imperative. High turnover not only incurs significant recruitment and training costs but also disrupts organizational continuity, weakens client relationships, and impacts overall productivity. The issue is particularly pressing in regional markets like Odisha, where talent mobility and market competition add further complexity to workforce stability.

Employee engagement has gained prominence as a key determinant of organizational performance and employee retention. Defined as the emotional and psychological connection employees have with their work and organization, engagement encompasses factors such as motivation, commitment, and a sense of purpose. Engaged employees are more likely to exhibit organizational loyalty, go beyond their formal roles, and remain with their employers over the long term. However, engagement is influenced by several organizational factors, including leadership style, work environment, training and development opportunities, career advancement, recognition systems, and the degree of autonomy granted to employees.

This study seeks to explore how these organizational variables impact employee engagement and, in turn, influence turnover intentions among private banking professionals in Odisha. By adopting a quantitative approach, the research aims to provide empirical evidence on the nature and strength of these relationships. In doing so, it addresses a significant gap in existing literature, particularly within the regional banking context of eastern India, where empirical studies on this topic remain limited. The findings of this research have practical relevance for human resource managers and banking leaders striving to build a stable and committed workforce. Understanding the drivers of engagement and their effect on turnover can inform targeted retention strategies, reduce attrition rates, and enhance organizational effectiveness. Ultimately, this study aims to contribute to a deeper understanding of how employee engagement serves as a strategic tool in minimizing turnover in the dynamic and competitive landscape of private banking in Odisha.

Literature Review

Employee turnover continues to challenge organizations globally, especially in the banking sector, where knowledge-intensive roles require consistent workforce stability (Hom et al., 2017). In the Indian private banking context, high attrition has prompted a growing interest in understanding factors that influence employee engagement and retention (Garg & Dhar, 2017). Employee engagement is widely recognized as a key driver of organizational success and employee retention. Schaufeli et al. (2017) define engagement as a positive, fulfilling, work-related state characterized by strength, dedication, and immersion. Engaged employees tend to exhibit lower turnover intentions and higher performance (Bakker & Albrecht, 2018).

In the Indian context, studies by Bhatnagar (2018) and Sharma & Sharma (2020) confirmed a strong inverse relationship between engagement and turnover intention. Leadership has been identified as a foundational driver of engagement. Transformational leadership fosters trust and motivation, significantly boosting employee

commitment (Caillier, 2016; Agarwal & Gupta, 2018). Similarly, work environment encompassing physical conditions, culture, and support systems plays a critical role in shaping employee attitudes (Anitha, 2016; Mehta & Mehta, 2022). Employee training enhances engagement by empowering individuals with skills and confidence to perform effectively (Jehanzeb & Bashir, 2016). Continuous learning opportunities have been positively correlated with higher employee retention (Saks, 2019). Career progression opportunities further deepen employee attachment by satisfying growth and aspiration needs (Khan & Aleem, 2017).

Moreover, reward and recognition systems have been found to significantly influence engagement by validating effort and reinforcing loyalty (Imran et al., 2020; Gupta & Sharma, 2023). Lastly, job autonomy enhances intrinsic motivation and psychological ownership, which are linked to lower turnover rates (Morgeson et al., 2016; Kundu & Gahlawat, 2021). While these relationships have been studied across various sectors, there is a lack of focused research on private banking professionals in regional contexts such as Odisha. This study fills that gap by integrating these employee engagement factors into a comprehensive model to assess their impact on engagement and turnover intentions.

Conceptual Model

The conceptual model illustrates the relationship between key employee engagement factors and turnover intentions, through employee engagement. It identifies seven independent variables leadership, organisation policy, work environment, employee training, career progression, reward and recognition, and job autonomy that collectively influence the level of employee engagement.

This model is grounded in the premise that a supportive and motivating work environment fosters engagement, which significantly reduces the likelihood of turnover. The framework aims to provide empirical insight into how engagement can be leveraged to retain private banking professionals in Odisha.

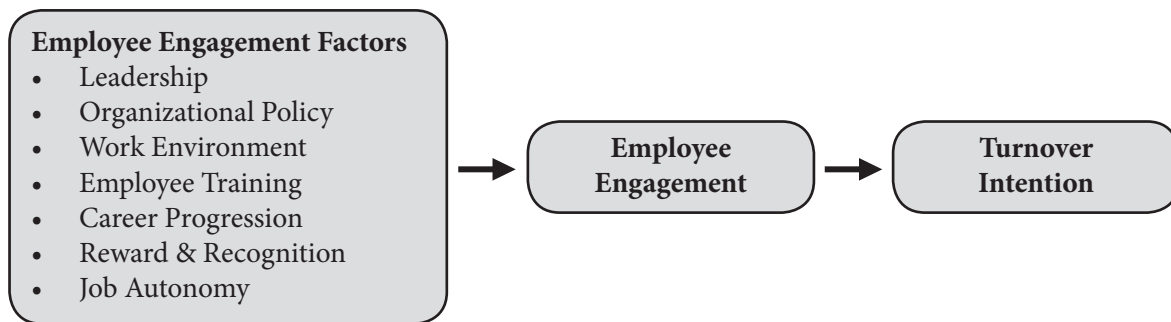


Fig 1: Conceptual Model for Reducing Turnover Through Engagement

Research Objectives

- To examine the impact of key employee engagement factors leadership, organisational policy, work environment, employee training, career progression, reward and recognition, and job autonomy on level of employee engagement among private banking professionals in Odisha.
- To analyse the relationship between employee engagement and turnover intentions and assess how enhanced engagement can contribute to reducing employee attrition in the private banking sector.

Research Hypotheses

- H1:** There is a significant positive relationship between employee engagement factors (leadership, organisation policy, work environment, employee training, career progression, reward and recognition, and job autonomy) and employee engagement among private banking professionals in Odisha.
- H2:** There is a significant negative relationship between employee engagement and turnover intentions among private banking professionals in Odisha.

Research Design and Methodology

This study adopts a quantitative research design to examine the impact of employee engagement factors on employee engagement and, subsequently,

on turnover intentions among private banking professionals in Odisha. A descriptive research approach is used to analyse the relationships between variables and validate the proposed conceptual model. The target population includes employees working in private sector banks across major cities in Odisha. A stratified random sampling technique ensures representation from different banks and job levels. Data are collected using a structured questionnaire comprising close-ended statements measured on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire covers variables such as leadership, organisation policy, work environment, training, career progression, rewards, autonomy, engagement, and turnover intention. Primary data collection takes place through both online and offline surveys. A total of 250 valid responses are collected and analysed.

For statistical analysis, descriptive statistics summarize the response patterns and assess the strength of relationships among variables. Descriptive statistics and Multiple regression analysis examine the impact of employee engagement factors on employee engagement, and the effect of engagement on turnover intentions. Additionally, factor analysis validates the constructs, and reliability tests (Cronbach's alpha) ensure internal consistency of the scales. The results provide empirical support for the hypothesized relationships and offer actionable insights for HR managers in the private banking sector.

Analysis

1) Reliability

Table 1: Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.808	.814	72

The reliability analysis (Table 1) of the study indicates a Cronbach's Alpha value of 0.808, demonstrating a high level of internal consistency among the 72 items used in the questionnaire. This suggests that the scale is reliable, and the items consistently measure the constructs related to employee engagement and turnover intentions.

2) Descriptive Statistics

a. Leadership

Table 2: Descriptive Statistics (N=250)				
Factors		Mean	Std. Deviation	Variance
My organization's leaders foster a culture of trust and respect.	L1	3.6720	1.01614	1.033
My organization's leaders show genuine interest in the well-being of employees.	L2	3.9720	1.01950	1.039
My organization's leaders effectively communicate organizational goals and objectives.	L3	3.2760	1.04508	1.092
My organization's leaders are approachable and open to feedback.	L4	3.7200	.99477	.990
My organization's leaders provide clear guidance and direction in work.	L5	3.4200	1.05834	1.120
My organization's leaders rarely consider employees' opinions when making decisions.	L6	3.6120	1.08543	1.178
My organization's leaders foster a culture of trust and respect.	L7	3.5520	1.16133	1.349
Valid N (listwise)				

b. Organizational Policy

Table 3: Descriptive Statistics (N=250)				
Factors		Mean	Std. Deviation	Variance
My organization's policies are fair and transparent to all employees.	OP1	3.7680	1.10955	1.231
My Organizational policies promote a healthy work-life balance and employee wellbeing.	OP2	4.1600	.80060	.641
My Organizational policies have clear grievance procedure & handles employee grievances effectively.	OP3	3.9880	.85720	.735
My organization's policies foster a culture of inclusion and diversity.	OP4	3.9760	.91365	.835
My organization's policies are often applied inconsistently, showing favouritism or biasness.	OP5	3.7800	1.05834	1.120
My organization's policies related to employee benefits are competitive.	OP6	3.8120	1.07577	1.157
My organization's policies encourage work satisfaction and career growth.	OP7	1.7800	1.11741	1.249
My organization's policies are continuously updated to meet the needs of employees.	OP8	1.9880	1.14591	1.313
Valid N (listwise)				

c. Work Environment

Table 4: Descriptive Statistics (N =250)				
Factors		Mean	Std. Deviation	Variance
My organization physical work environment is comfortable and safe.	WE1	2.0920	1.25612	1.578
My organization ensures that employees have the necessary tools, technology and resources to do job effectively.	WE2	2.0960	1.26379	1.597
My organization work environment supports collaboration and teamwork.	WE3	2.0840	1.44683	2.093
My organization work environment fosters open communication among colleagues.	WE4	1.9000	1.15557	1.335
My organization provides an environment where employee feel respected and valued.	WE5	2.5880	1.26834	1.609
My organization promotes a healthy work environment through various wellness initiatives.	WE6	3.1440	1.36039	1.851
My organization's work environment discourages creativity and innovation.	WE7	3.4080	1.43169	2.050
My organization work environment is free from distractions that hinder productivity.	WE8	3.3560	1.43300	2.053
Valid N (listwise)				

d. Employee Training

Table 5: Descriptive Statistics (N = 250)				
Factors		Mean	Std. Deviation	Variance
My organization provides sufficient training to enhance the skills of its employees & is relevant to job responsibilities.	ET1	4.1880	.65296	.426
My organization ensures that the training provided helps the employees to improve their career prospects within the company.	ET2	4.1560	.69107	.478
My organization delivers training programs conducted by competent and knowledgeable instructors.	ET3	4.0000	.88268	.779
My organization provides adequate support in implementing the skills one learns through training.	ET4	4.0160	.86877	.755
My organization frequently updates its training programs to stay aligned with industry trends.	ET5	3.6880	1.03292	1.067
My organization's training programs help me feel more confident in my job performance.	ET6	3.4280	1.03203	1.065
My organization evaluates the effectiveness of its training programs.	ET7	3.1200	1.09471	1.198
Valid N (listwise)				

e. Career Progression

Table 6: Descriptive Statistics (N=250)				
Factors		Mean	Std. Deviation	Variance
My organization's career progression policies are fair and transparent.	CP1	3.2800	1.23275	1.520
My organization provides satisfying opportunities for career advancement.	CP2	3.3400	1.24200	1.543
My organization lacks a clear path for career progression.	CP3	3.2960	1.17896	1.390
My organization ensures that employees are aware of the career development opportunities available.	CP4	3.1760	1.22270	1.495
My organization motivates employees to stay due to the career growth prospects it offers.	CP5	3.2840	1.20046	1.441
My organisation leaders are actively involved in helping employees plan their career path within the organization.	CP6	3.1040	1.20123	1.443
My organization gives employees opportunities to take on more responsibilities in their role.	CP7	3.2720	1.25711	1.580
Valid N (listwise)				

f. Reward & Recognition

Table 7: Descriptive Statistics (N =250)				
Factor		Mean	Std. Deviation	Variance
My organization has a fair and transparent reward system.	RR1	3.3360	1.27026	1.614
My organization rewards and recognizes employees adequately for the work they do.	RR2	3.2920	1.19853	1.436
My organization offers competitive compensation packages.	RR3	3.1840	1.24432	1.548
My organization's reward system motivates employees to go above and beyond their work.	RR4	3.3440	1.17950	1.391
My organization ensures that employees feel valued for their efforts through both tangible and intangible rewards.	RR5	3.1640	1.18944	1.415
My organization rarely acknowledges or celebrates achievements and successes.	RR6	3.3120	1.19850	1.436
My organization ensures that all employees have equal opportunities for recognition and rewards.	RR7	3.1920	1.23663	1.529
My organization make sure that employees are satisfied with the benefits provided by them.	RR8	3.3640	1.17175	1.373
Valid N (listwise)				

g. Job Autonomy

Table 8: Descriptive Statistics (N=250)				
Factors		Mean	Std. Deviation	Variance
My organization provides employees the freedom to make decisions about how to perform their work.	JA1	3.1720	1.18152	1.396
My organization gives employees enough autonomy to manage their workload effectively.	JA2	3.1960	1.17093	1.371
My organization trusts employees to make decisions related to their jobs.	JA3	3.2960	.98604	.972
My organization enables employees to work without constant supervision or micromanagement.	JA4	3.4080	1.03432	1.070
My organization encourages employees to take initiative and make decisions within their roles.	JA5	3.1200	1.09837	1.206
My organization values employees' independence and creativity in their work.	JA6	3.5040	1.20657	1.456
My organization discourages employees from taking ownership of their work and outcomes.	JA7	3.4000	1.21899	1.486
Valid N (listwise)				

h. Employee Engagement

Table 9: Descriptive Statistics (N =250)				
Factors		Mean	Std. Deviation	Variance
I feel passionate about my work and motivated to give my best each day.	EE1	3.4560	1.15473	1.333
I find my job challenging in a way that keeps me engaged.	EE2	3.3800	1.20391	1.449
I have a sense of autonomy in how I perform my job.	EE3	3.4920	1.18302	1.400
I rarely receive feedback that helps me improve my performance.	EE4	3.4000	1.10856	1.229
I have the resources I need to complete my work effectively.	EE5	3.3400	1.19923	1.438
I often feel like an unimportant part of this organisation	EE6	3.2360	1.19751	1.434
I am encouraged to contribute ideas for improving the organization.	EE7	3.3960	1.10092	1.212
I receive recognition for my hard work and achievements.	EE8	3.4120	.98291	.966
I feel emotionally attached to my role and responsibilities.	EE9	3.4880	1.02276	1.046
I believe my contributions are valued and acknowledged by the organization.	EE10	3.3040	1.06212	1.128
Valid N (listwise)				

i. Turnover Intention

Table 10: Descriptive Statistics (N =250)				
Factors		Mean	Std. Deviation	Variance
I have been considering leaving this organization recently due to better opportunities.	TI1	1.9960	.42510	.181
I think about finding a job outside this organization.	TI2	2.0520	.49220	.242
I have taken steps toward seeking other employment opportunities.	TI3	1.9960	.46134	.213
I believe my current job fully satisfy my long-term career goal	TI4	2.0320	.48156	.232
I am satisfied with my current job and rarely think about changing it.	TI5	2.0360	.44214	.195
I am considering leaving due to the work environment.	TI6	2.0280	.46914	.220
I often evaluate the advantages of staying versus leaving my present job.	TI7	2.0120	.47830	.229
I believe that other organizations may offer me better opportunities than my present position.	TI8	1.9840	.45670	.209
I am likely to leave this job within the next year.	TI9	2.0200	.46956	.220
I intend to stay with this organization only as long as I must.	TI10	2.0280	.46914	.220
Valid N (listwise)				

From Table 2 to Table 10, the analysis reveals that leadership in private banking organizations in Odisha is moderately effective, with mean scores ranging from 3.276 to 3.972. While employees perceive leaders as genuinely interested in their well-being (L2), communication of goals (L3) remains a weak point. This indicates a need for leaders to enhance clarity and direction. Organizational policies show significant disparity, with high satisfaction in promoting work-life balance (OP2) but notable dissatisfaction with policies supporting career growth (OP7, OP8), suggesting that while basic policies are in place, employee development is overlooked. The work environment emerges as a critical concern, with most scores below 3.0. Poor teamwork and open communication (WE3 and WE4) reflect a lack of collaborative culture and support systems. Training, however, stands out as a strength, with items like ET1 and ET2 scoring above 4.15, indicating strong approval of skill-building initiatives. Yet, confidence in training outcomes (ET6, ET7) needs improvement. Career progression scores (around 3.1–3.3) reflect uncertainty, particularly in

awareness of opportunities and managerial support (CP4, CP6), highlighting inconsistent advancement practices. Reward and recognition receive moderate satisfaction, with benefits appreciated (RR8) but feelings of being valued (RR5) needing attention, pointing to the need for non-monetary recognition. Job autonomy is rated moderately, suggesting employees value independence (JA6) but feel limited in taking initiative (JA5). Employee engagement is average, with emotional attachment to roles (EE9) strong, though lack of feedback and feeling undervalued (EE4, EE6) remain issues. In Turnover intentions, the factors TI1, TI3, TI8 are very low mean score among all factors and other factors are little bit high. So, the overall turnover intention remains low, pointing toward a stable workforce with mild concerns or curiosity about alternative employment. This analysis suggests that improving the work environment, policy responsiveness, and career development frameworks will be essential to boost engagement and reduce turnover among private banking professionals in Odisha.

3) Factor Analysis

a. KMO and Bartlett's Test

Table 11: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.738
Bartlett's Test of Sphericity	Approx. Chi-Square	10203.431
	df	1326
	Sig.	.000

In Table 11, The KMO value of 0.738 indicates a middling level of sampling adequacy, suggesting that the data is suitable for factor analysis. Bartlett's Test of Sphericity is significant ($\chi^2 = 10203.431$, $p < .001$), confirming that the correlation matrix is not an identity matrix and that factor analysis is appropriate.

b. Factor Loading

Table 12: Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.996	11.530	11.530	5.996	11.530	11.530	5.308	10.207	10.207
2	5.613	10.795	22.324	5.613	10.795	22.324	4.059	7.805	18.012
3	4.443	8.544	30.869	4.443	8.544	30.869	3.826	7.357	25.370
4	3.921	7.541	38.409	3.921	7.541	38.409	3.803	7.314	32.684
5	3.365	6.470	44.880	3.365	6.470	44.880	2.831	5.445	38.129
6	2.661	5.117	49.996	2.661	5.117	49.996	2.765	5.318	43.447
7	2.193	4.218	54.214	2.193	4.218	54.214	2.733	5.256	48.703
8	2.038	3.920	58.134	2.038	3.920	58.134	2.263	4.351	53.054
9	1.993	3.833	61.967	1.993	3.833	61.967	2.029	3.903	56.957
10	1.888	3.631	65.598	1.888	3.631	65.598	1.966	3.780	60.737
11	1.559	2.999	68.597	1.559	2.999	68.597	1.964	3.776	64.513
12	1.405	2.702	71.299	1.405	2.702	71.299	1.955	3.760	68.273
13	1.179	2.268	73.567	1.179	2.268	73.567	1.856	3.570	71.843
14	1.105	2.125	75.692	1.105	2.125	75.692	1.556	2.992	74.835
15	1.067	2.052	77.744	1.067	2.052	77.744	1.513	2.909	77.744
16	.937	1.802	79.546						
17	.797	1.533	81.079						
18	.776	1.492	82.571						
19	.725	1.394	83.965						
20	.665	1.279	85.244						

21	.606	1.165	86.409						
22	.568	1.092	87.501						
23	.524	1.008	88.509						
24	.510	.980	89.490						
25	.455	.875	90.364						
26	.440	.846	91.210						
27	.377	.725	91.935						
28	.371	.714	92.649						
29	.349	.671	93.320						
30	.339	.653	93.973						
31	.296	.568	94.541						
32	.282	.542	95.083						
33	.264	.507	95.590						
34	.239	.460	96.050						
35	.220	.423	96.474						
36	.205	.393	96.867						
37	.195	.375	97.242						
38	.180	.346	97.588						
39	.176	.339	97.927						
40	.156	.300	98.227						
41	.137	.264	98.490						
42	.124	.238	98.728						
43	.107	.205	98.933						
44	.102	.195	99.128						
45	.093	.179	99.307						
46	.080	.154	99.461						
47	.067	.128	99.590						
48	.051	.098	99.688						
49	.050	.095	99.783						
50	.040	.077	99.861						
51	.039	.074	99.935						
52	.034	.065	100.000						
Extraction Method: Principal Component Analysis.									

Table 12 presents the results of the Total Variance Explained from the Principal Component Analysis (PCA), which identifies the number of factors (components) that best represent the underlying structure of the dataset.

Key Observations:

- Initial Eigenvalues indicate that 15 components have eigenvalues greater than 1, which is typically the threshold for retaining a factor under Kaiser's criterion. These 15 components together account for 77.744% of the total variance, which is a strong indicator of a robust factor structure.
- The first component alone explains 11.530% of the variance, followed by the second (10.795%) and third (8.544%). The cumulative variance explained by the top 5 components is 44.88%, and by the top 10 components, it is 65.60%. This cumulative pattern suggests a multi-dimensional construct underlying employee engagement and turnover.
- The Extraction Sums of Squared Loadings show that the same 15 components retain their explanatory power after the extraction process, confirming their statistical significance in representing the data structure.

After rotation, which aims to achieve a simpler and more interpretable factor solution, the variance distribution becomes more balanced. The variance explained by the first rotated component reduces to 10.207%, and that of others ranges between 2.9% and 7.8%, indicating improved clarity in the component

loadings. The high number of components (15) retained with eigenvalues above 1 and a cumulative variance of over 77% suggest that the dataset contains multiple dimensions influencing turnover and engagement, such as leadership, training, work environment, reward systems, and career progression. The distribution of variance across components after rotation indicates a well-dispersed factor solution, reducing the dominance of any single factor and enhancing interpretability.

The PCA output supports the conclusion that employee turnover and engagement in private banks are influenced by a broad array of interrelated factors, each significantly contributing to the overall variance in responses.

4) Statistical Analysis for Objective 1:

Objective 1: to examine the impact of employee engagement factors (independent variables) on employee engagement.

Hypothesis 1 (H_1): There is a significant positive relationship between employee engagement factors (leadership, work environment, employee training, career progression, reward and recognition, and job autonomy) and employee engagement among private banking professionals in Odisha.

Multiple Regression

Table 14: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675 ^a	.455	.439	4.54469
a. Predictors: (Constant), Job autonomy, Employee training, Work environment, Reward recognition, Leadership, Career progression, Organisational policy				

Table 15: ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4173.368	7	596.195	28.866	.000 ^b
	Residual	4998.328	242	20.654		
	Total	9171.696	249			
a. Dependent Variable: Employee engagement						
b. Predictors: (Constant), Job autonomy, Employee training, Work environment, Reward recognition, Leadership, Career progression, Organisational policy						

The analysis of Tables 14 and 15 provides evidence supporting the study's Objective 1, which aims to examine the impact of employee engagement factors on employee engagement among private banking professionals in Odisha. The corresponding hypothesis (H1) posits a significant positive relationship between employee engagement factors namely leadership, work environment, employee training, career progression, reward and recognition, job autonomy, and organizational policy and employee engagement.

Table 14: Model Summary reveals that the multiple regression model yielded an R value of 0.675, indicating a moderate to strong correlation between the set of independent variables and employee engagement. The R Square value of 0.455 suggests that approximately 45.5% of the variance in employee engagement is explained by the combined effect of the seven organizational factors. The Adjusted R Square of 0.439 accounts for the number of predictors in the model, confirming that the explained variance remains substantial even after adjustment. The standard error of the estimate (4.54469) reflects the average deviation of actual engagement scores from the predicted scores.

Multiple Regression

Table 16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.399 ^a	.159	.156	3.28249

a. Predictors: (Constant), Employee engagement

Table 17: ANOVA^a

Table 17: ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	505.393	1	505.393	46.905	.000 ^b
	Residual	2672.143	248	10.775		
	Total	3177.536	249			
a. Dependent Variable: Turnoverintention						
b. Predictors: (Constant), Employee engagement						

Table 18: Coefficients^a

Table 18: Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	53.330	4.844		11.009	.000
	Employee engagement	-.829	.121	-.399	-6.849	.000
a. Dependent Variable: Turnoverintention						

Table 15: ANOVA further confirms the model's statistical significance. The F-statistic of 28.866 with a p-value of .000 ($p < 0.001$) demonstrates that the overall regression model is highly significant, meaning that the set of predictors reliably forecasts employee engagement. This outcome supports Hypothesis 1, affirming that employee engagement factors have a statistically significant and positive impact on employee engagement. These findings underscore the critical role of effective leadership, positive work environments, meaningful training, career development opportunities, fair recognition, autonomy, and sound organizational policies in enhancing employee engagement and, by extension, potentially reducing turnover.

5) Statistical Analysis for Objective 2:

Objective 2: Focuses on understanding the relationship between employee engagement and turnover intentions.

Hypothesis H₂: There is a significant relationship between employee engagement and turnover intentions among private banking professionals in Odisha.

The multiple regression analysis (Table 16, Table 17 and Table 18) examined the relationship between employee engagement and turnover intentions among private banking professionals in Odisha. The findings from the model summary indicate a moderate correlation, with an R value of 0.399 and an R Square (R^2) value of 0.159. This suggests that approximately 15.9% of the variation in turnover intention can be explained by employee engagement. The ANOVA results further support the model's significance, with an F-value of 46.905 and a p-value of 0.000, indicating that the regression model is statistically significant and that employee engagement has a meaningful impact on turnover intentions.

The coefficients table reveals that employee engagement has a statistically significant negative effect on turnover intention, as reflected by the unstandardized coefficient ($B = -0.829$) and the standardized beta coefficient ($\beta = -0.399$). This means that for every one-unit increase in employee engagement, turnover intention decreases by 0.829 units. The negative t-value of -6.849 and the significance level ($p < 0.001$) confirm the strength and reliability of this relationship. In summary, the analysis supports the hypothesis that there is a significant negative relationship between employee engagement and turnover intentions. Higher levels of employee engagement are associated with lower levels of turnover intention among private banking professionals in Odisha, emphasizing the importance of fostering engagement to reduce attrition in the sector.

Findings

The findings of the study underscore a strong relationship between employee engagement and turnover intentions among private banking professionals in Odisha. Key factors such as leadership, organizational policy, career progression, reward and recognition, and job autonomy were found to significantly and positively influence employee engagement. While work environment and employee training also contributed positively, their impact was comparatively moderate. The regression analysis further confirmed that employee engagement plays a crucial role in reducing turnover intentions. Employees with higher levels of engagement were

significantly less likely to consider leaving their jobs, indicating that engaged employees tend to be more loyal and committed to their organization's success. The study also established the reliability of the data using Cronbach's alpha, and factor analysis validated the construct validity of the questionnaire, reinforcing the robustness of the measurement instruments employed. Overall, the results suggest that strengthening employee engagement through targeted organizational practices can effectively lower turnover rates. These findings offer important insights for HR professionals in private banking, highlighting the need to prioritize engagement as a strategic approach to talent retention. By adopting focused and strategic HR practices to boost engagement, private banks can significantly reduce employee turnover and enhance workforce stability.

Conclusion

This study concludes that employee engagement is a critical factor in reducing turnover intentions among private banking professionals in Odisha. The quantitative analysis clearly indicates that factors including leadership, organizational policy, work environment, employee training, career progression, reward and recognition, and job autonomy significantly impact engagement levels. The results affirm that when employees feel supported, valued, and provided with opportunities for growth, their commitment to the organization strengthens, thereby decreasing the likelihood of voluntary turnover.

Moreover, the study reinforces the strategic importance of employee engagement in managing turnover, positioning it as a key priority for human resource management. For private banks seeking to enhance employee retention, investing in policies that foster engagement is essential. This research provides empirical evidence to support targeted organizational interventions, ultimately promoting a more stable, motivated, and productive workforce within the private banking sector.

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Enhancing Learning Outcomes: Assessing Social Media-Based Learning Strategies with AHP

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Abstract

This study adopts the Analytic Hierarchy Process (AHP) methodology to analyse and rank the assessment methods in social media-based learning environments. It seeks to identify the critical criteria for effective assessment criteria, such as engagement, learning outcomes, collaboration, accessibility, and feedback quality-and weigh their relative importance to the relevant stakeholders. The study comes out with a quantitative data series of experts that includes educators, instructional designers, and social media learning practitioners through the structured survey. Via pairwise comparison mat, the study will now calculate the weight for every criterion and assess its consistency with the consistency ratio (CR) derived, which is 0.054, validating the analysis. The results indicated that the most weighted criteria were engagement (C1), with learning outcomes (C2) considering also those components essential for an effective assessment. Lower scores obtained were collaborative (C3), accessibility (C4), and feedback quality (C5), but they possess pertinent importance in their own context. The general priority ranking of assessment methods indicated quizzes and polls

(A3) as the most favoured, followed by multimedia submission (A2) and peer feedback (A1), which ranked lowest among the three. The potential interactivity and immediate feedback quizzes proffer, which would affect engagement and learning outcomes, were considered their preferred reason. Thus, engagement and learning outcomes are prerequisites for an effective assessment strategy. The same advisement would usually direct educational practitioners and institutions to such interactive assessment forms, supporting them through a multimedia environment and organising peer feedback into coherence.

Keywords: Assessment Strategies, Engagement, Learning Outcomes, AHP, Result.

Introduction

Social media has emerged as a pivotal element within educational contexts, providing dynamic and interactive frameworks that transcend conventional classroom environments. Platforms such as Facebook, Twitter, Instagram, and LinkedIn have empowered both learners and educators to cultivate collaborative and interactive learning atmospheres, amalgamating

informal and formal educational methodologies. This amalgamation promotes the creation, dissemination, and critical assessment of knowledge within online spheres. The application of social media in educational settings has been extensively examined, indicating its capacity to augment engagement, communication, and collaboration among students and educators (Muh Ruhuddin Mu et al., 2023; Ripki et al., 2024). Platforms like YouTube and Instagram deliver educational content and enhance social interconnectedness, albeit presenting challenges such as privacy concerns and potential distractions (Demeke, 2024). Within Indian educational settings, social media channels have assumed a vital position in cultivating online communities, enhancing interactions, and involving learners in discussions that extend beyond typical classroom limits, thus promoting a more learner-focused educational atmosphere (Mehta & Yadav, 2024). Furthermore, the influence of social media in media education has been transformative, enabling innovative pedagogical practices and adequately preparing individuals for the ever-evolving media industry (Raja, 2024). Nevertheless, the incorporation of social media into educational paradigms is fraught with challenges, including the proliferation of misinformation, cybersecurity threats, and the imperative for digital literacy. To effectively harness the potential of social media, educators must adopt strategic management practices and establish clear guidelines to navigate these challenges while promoting an environment conducive to academic achievement. Social media platforms present significant opportunities for enhancing educational practices; however, their effective utilisation necessitates a balanced approach considering both their advantages and inherent risks. Social media-Based Learning (SMBL) is particularly significant in fostering peer-to-peer collaboration, enhancing digital literacy, and providing authentic contexts for learning.

The incorporation of social media into educational methodologies is increasingly acknowledged for its capacity to augment learning experiences by accommodating a spectrum of learning styles and promoting global interactions. Social media platforms, endowed with multimedia functionalities, facilitate both asynchronous and synchronous forms of learning, thereby allowing students to interact

with content and peers in adaptable manners that correspond with their individual learning inclinations (Raspopovic et al., 2017; Van Den Beemt et al., 2020). This flexibility is particularly advantageous for international students, who frequently perceive social media as more intuitive and engaging in contrast to conventional learning management systems, thus fostering social connections and a sense of community within their novel educational contexts (Sleeman et al., 2020a). Additionally, the impact of social media on language learning is notable since it creates real-life scenarios for practising language proficiency and developing intercultural awareness, which is crucial for second language acquisition (Solmaz, 2018). The idea of Personal Learning Environments (PLEs) highlights the role of social media as a facilitator between conventional and casual learning, which in turn supports self-guided education and customises learning experiences (Dabbagh & Kitsantas, 2012). Nonetheless, challenges such as the digital divide, privacy issues, and possible distractions must be addressed to optimise the effectiveness of social media-based learning (SMBL) (Dabbagh & Kitsantas, 2012; Van Den Beemt et al., 2020). In spite of these challenges, the potential for social media to facilitate pedagogic practices, whereby learners autonomously determine their engagement and learning trajectories, is manifest (Nadelson et al., 2017). The integration of social media within educational frameworks also resonates with self-determination theory, which underscores the significance of perceived competence, autonomy, and relatedness in enhancing student engagement and satisfaction (Alturki & Aldraiweesh, 2024). As educational institutions endeavour to assimilate these platforms, it is imperative to synchronise pedagogical objectives with technological advancements, ensuring that social media is utilised effectively to cultivate inclusive and engaging learning environments. This dynamic progression of SMBL accentuates the necessity for continuous research and innovation in pedagogical strategies to fully exploit the potential of social media in educational contexts (Kerruish, 2024).

Literature Review

Social media participation markedly improves social media-based learning through increased engagement and collaboration. In developing nations, integrating

social media in education has notably raised parental and teacher involvement, consequently enhancing student attendance and engagement, as indicated by a study that showed parental engagement rising from 3-4% to 20% and teacher engagement reaching 70% post social media tool implementation (Badshah et al., 2021). For international students, social media not only aids learning but also facilitates vital social connections that enrich their academic experience and community sense in higher education (Koranteng et al., 2019; Sleeman et al., 2020b). The collaborative essence of social media is illustrated in MOOCs, which promote collective knowledge creation and empower students, thus improving satisfaction and real-world applicability of learning (Gil-Quintana & Osuna-Acedo, 2020). During crises such as the COVID-19 pandemic, social media played a crucial role in sustaining educational continuity by fostering social, teaching, and cognitive presence, thereby ensuring sustained student engagement in higher education (Asghar et al., 2024). Furthermore, platforms for social networking (PSNs) correlate with better study routines among nursing students worldwide, demonstrating a favourable link between PSN activity and educational achievement, emphasising social media's capacity to bolster academic results (Valdez et al., 2020). Additionally, social media-like instructional strategies, including gamification, have been shown to boost student satisfaction and facilitate critical connections in online learning contexts (Ensmann & Whiteside, 2022)). The utilisation of platforms like Twitter during the pandemic has showcased the potential for spontaneous online learning communities. However, these often lack permanence and necessitate more structured approaches to optimise learning networks (Fischer-Preßler et al., 2023; Lemay & Doleck, 2020). In developing countries, social media has acted as a substitute for formal learning management systems, fostering social learning and community among students, even when faculty prioritise teaching (Sobaih et al., 2020). Lastly, platforms such as YouTube have proven effective for language acquisition, offering immersive experiences that enhance the educational journey (Wang et al., 2022). In conclusion, social media participation profoundly enriches social media-based learning by boosting engagement, connectivity, and collaborative opportunities across various educational frameworks.

Social media-based learning exhibits a complex interrelationship with learning outcomes, collaborative efforts, accessibility, and feedback mechanisms, as substantiated by numerous scholarly investigations. The incorporation of social media within educational frameworks has the potential to augment learning outcomes by affording students enhanced access to educational resources and opportunities for engagement, as illustrated in the research regarding e-learning systems in Thailand, which established a positive correlation between online accessibility and educational performance (Suanpang et al., 2004). Social media platforms, such as Facebook, have been recognised as efficacious instruments for fostering collaborative learning, particularly in disciplines such as architecture, wherein they promote knowledge appropriation and collaborative participation among learners (Pradhananga et al., 2020). This collaborative dimension is further corroborated by empirical studies suggesting that social media cultivates positive social interdependence, an essential component for effective collaborative learning in both virtual and in-person settings (Shimizu et al., 2022).

Accessibility constitutes another paramount benefit of social media-enhanced learning, as it enables flexible and mobile educational experiences, allowing students to interact with academic content at any time and from any location, thereby endorsing a pedagogical approach to education (Narayan et al., 2019). Feedback mechanisms are also significantly improved through social media, as platforms like Twitter facilitate microblogging-based peer feedback, which, notwithstanding certain obstacles such as distractions, offers a medium for cognitive and affective feedback, thereby enriching the overall learning experience (Luo, 2016). Furthermore, video feedback within online educational environments can bolster socioemotional dimensions, enhancing students' sense of belonging and motivational levels (Ryan, 2021).

In summary, the integration of social media in educational contexts is propelled by its capacity to enhance collaboration, communication, and resource sharing, which are influenced by perceived ease of use and usefulness, ultimately resulting in heightened engagement and creativity among learners (Arshad and Akram, 2018; Gulzar et al., 2022). Collectively,

these factors illustrate the transformative potential of social media in reshaping learning experiences by improving educational outcomes, fostering collaboration, enhancing accessibility and establishing effective feedback channels.

Objective of the Study

The objective of this study is to utilise the Analytic Hierarchy Process (AHP) methodology to systematically evaluate and prioritise assessment strategies for social media-based learning environments. This involves:

- 1) To find the key criteria and alternatives that impact effective assessments.
- 2) To determine the relative importance of criteria such as engagement, learning outcomes, collaboration, accessibility, and feedback quality.

Research Methodology

This research adopts a quantitative, analytical approach using AHP to evaluate and rank assessment strategies for social media-based learning. Data were collected using expert opinions from educators, instructional designers, and social media learning practitioners through structured surveys. Respondents are asked to fill in the level

of importance using a pairwise comparison matrix scale. The present literature defines three levels of hierarchy compromising the goals, criteria (5 criteria such as student engagement, learning outcomes, collaboration, accessibility, and feedback quality), and three alternative strategies (peer feedback, multimedia submission and Quizzes and Polls). Consistency is validated using consistency ratio (CR). The final ranking was done using priority weights.

Application of AHP Process

Data were collected using expert opinions from educators, instructional designers, and social media learning practitioners through structured surveys. AHP analysis is used to find out the different weights, and weight is estimated using equations (2) and (3), which have been assigned to different criteria. For this, experts were asked about the level of significance of each factor with respect to each other. The response of experts on each of the criteria taken into concern is in the Likert scale type 1-9. To calculate the weight, A wise Comparison Matrix is done for criteria according to the Likert Scale given by Saaty (given in annexure).

Table – 1: Priority of Each Criteria

Criteria	Weight score	Priority (Rank)	max, CI, RI	CR
C1: Engagement	0.503	1	max = 5.243 CI= 0.06 RI=1.12	0.054
C2: Learning Outcomes	0.260	2		
C3: Collaboration	0.134	3		
C4: Accessibility	0.068	5		
C5: Feedback Quality	0.035	4		

Source: Own Calculation

Criteria	Priority	
C1 Hygienic Environment	0.091	5
C2 Cheap Meal	0.357	1
C3 Quality Food	0.093	4
C4 Preferred Location	0.315	2
C5 Timely Served	0.144	3

Interpretation 1

The weighted result of different criteria calculated using AHP analysis is represented in Table 1. There

may be issues like inconsistency in some cases, but in the present research, no such issues were found. The consistency ratio is generally calculated and compared to the random index to determine the consistency level. If CR is less than 0.10, then only analysis can proceed further. So, in the study, the consistency ratio for criteria was calculated using equation (8); in this study, the consistency ratio is 0.054. From Table 1 above, it is also clear that while providing priority to criteria, it found that Engagement (C1) is given as 1st priority, Learning Outcome (C2) is given as

2nd priority, and Collaboration (C3) is given as third priority by expert.

Table – 2: Overall Priority Ranking to know the impact of effective assessments.

Overall Priority	Rank
A1: peer feedback	3
A2: Multimedia submission	2
A3: Quizzes and Polls	1

Interpretation 2

Table 2 presents the general priority ranking of the various assessment methods based on five criteria: Engagement, Learning Outcomes, Collaboration, Accessibility, and Feedback Quality, to assess their effectiveness. The Analytical Hierarchy Process (AHP) was applied through which these rankings formed. According to the results, the first priority was attained from methods that were very involved, i.e., quizzes and polls (A3), to rank 1. This meant that the method was collectively regarded as the most suitable for the criteria. In fact, these are very interactive, participation-focused, and provide quick feedback, which makes them effective for catching and keeping students' attention. Also come learning outcomes (C2), which indicate making knowledge retention dynamic by assessment. Next on the list is multimedia submission (A2), which takes second place, indicating relatively lesser effectiveness in terms of ideal assessment—as it gives a creative and versatile platform to present understanding for most students. Moderately on the engagement scale (C1), it accommodates an array of private content for individuals and heralds great effectiveness for learning outcomes (C2) and accessibility (C4) relative to different styles of learning. Finally, "Peer Feedback" (A1) is ranked 3rd, indicated by its lower grade. Peer feedback is dependent heavily on the level of interaction among the participants, which sometimes differs significantly from one participant to another.

Not only does this make it possible to characterise different assessment formats but also meets practical needs for the use of such tools as quizzes and polls in improving assessment capabilities. Final reflections include the values students and staff place on new and different formats of assessment such as multimedia submissions as well as the collaborative nature of peer feedback. That is just not as much as the preceding two.

Findings

Table – 1: Criteria Prioritisation:

- Engagement emerged (C1) as the most important criterion because, from among all other assessment criteria, engagement alone had the highest weight score of 0.503, which serves as an indicator that it plays a critical role in effective assessments.
- Learning Outcomes (C2) appeared next, which got a weight score of 0.260 and highlighted its essence in assessments for one's methods.
- Collaboration (C3), Accessibility (C4), and Quality of Feedback (C5) are ranked lower but not less important. They only represent less important ones that still serve the purpose of effectiveness at large.
- This consistency ratio (CR) of 0.054 below the cutoff point of 0.10 affirms the validity of the analysis.

Table – 2: Overall Priority Ranking:

- Quizzes and polls (A3). The analyses put quizzes and polls at the topmost assessment tools, showing a better fit with prioritised criteria.
- Multimedia submission (A2), in second place, was seen to have high potential in achieving assessment objectives given improved engagement and learning outcomes.
- Peer Feedback (A1), which came third, will increase collaboration and feedback quality but is considered to be less effective than either of the other two methods.

Conclusion

The study emphasised that an effective evaluation scheme must prioritise criteria like engagement and learning outcomes. Quizzes and polls are the most effective tools, followed by multimedia submission and peer feedback. A balanced application of all these, while addressing secondary criteria of collaboration, accessibility, and quality of feedback, will result in much more effective and comprehensive assessment strategies. This framework could be utilised by educators and institutions to develop innovative and stronger assessment methods.

Suggestions

- Focus on Critical Criteria: Design methods for assessment, maximising aspect engagement and outcomes learning itself. That will give the most significant results of an effective approach.

- Integrate collaborative attributes relationship accessibility with the quality of feedback to address the holistic needs of learners.
- Interactive assessment supplementation: Extend quizzes and polls as they are most effective in achieving the aims of engaging learners and giving real-time feedback about their learning progress.
- Utilisation of Multimedia Tools: Accept submissions in Multimedia to foster creativity and meet increasingly aiding all learning modalities, avoiding increased engagement with possible access.
- Integrate Peer Feedback: Be robust about peer feedback through a given structure and rubrics to ensure quality and consistency in provision.

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A Study on Factors Influencing the Hybrid Work Culture for Middle Managers in Selected IT Website Development Companies of the Surat Region

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Abstract

The concept of 'hybrid work', characterised by the ongoing alternation between traditional and non-traditional work modes, has gained significant attention in recent research. Despite its growing relevance, a consistent and coherent conceptualisation of hybrid work remains elusive. This article aims to address this gap by providing a comprehensive and nuanced understanding of hybrid work, contributing to conceptual clarity in its application. The hybrid work culture influences job redesigning, job analysis, job classification, individual competency management, and development. The application of redeveloping the improved write-up on job description and specification while using an expert system to educate and develop employees on the advantages and disadvantages of a hybrid work culture. We draw on extensive literature in selected IT Services Sector companies in the Surat Gujarat region.

Keywords: Hybrid Work Culture, Traditional and Non-Traditional work model, job analysis, job redesigning, individual competency management and development IT service Sector,

Introduction

A hybrid work culture, a combination of remote and in-office work, has gained significant traction in recent years, especially post-pandemic. Middle managers, positioned between senior leadership and frontline employees, play a crucial role in implementing and navigating this model. This literature review explores the impact of hybrid work

on middle managers, their challenges, and strategies for effective management. In the technological period, the notion of hybrid models has become most widely accepted in the third decade of the twenty-first century, particularly in the IT sector. This completely altered the organisation's functioning and had an impact on all aspects of its operations. This consists of working style, communication patterns, working hours, job performance, and interpersonal relationships.

Organisations are forced to implement the hybrid model to meet the changing needs of the business, ensuring that the business runs on its own and employees perform at their best. Digital transformation has become the medium of choice for organisations to integrate the office workplace and flexible working hours. Though it allows you to work from anywhere, it has also had an impact on job performance. The individual contributor's performance was excellent, but team performance fell significantly. The teleworking paradigm has changed interpersonal interactions among employees, and job performance has become a dubious factor for organisations. Middle managers are preoccupied with duties and prolonged working hours, while employees' personal concerns are overlooked owing to a lack of personal touch and supportive words. This had an impact on job performance and resulted in substantial staff turnover. Organisations are attempting to address employees' concerns through a variety of programs designed to foster relationships and boost job performance.

Literature Review

Research Topic	Focus Area
Examining the factors and Employee Engagement Model for Hybrid Work Culture	The concept prioritises culture, openness, employee appreciation, trained leadership, employee connection, rethinking the appraisal system, and fostering a sense of security. This strategy aims to boost employee engagement, with potential results including increased productivity, defined engagement, a shift in employee attitude, and happiness through experience.
Defining Hybrid Organisational Environment	Organisational environment is determined by the type of organisation and its structure. In short, the traditional environment defines the regular working process; it takes into account each person's characteristics with each desk and individual workstation. On the other hand, a hybrid workplace environment setup is different.
Hybrid Working Arrangements	Hybrid working arrangements, also known as hybrid work models, are a flexible work structure that blends remote and on-site labour. Employees can work from both physical offices and remote locations, such as their homes. Employees can choose their own mix of remote and on-site work based on their unique circumstances and job duties.
Hybrid Work Model	Although studies on productivity gains are inconclusive, employers are willing to continue with remote work practices even after the COVID-19 pandemic. This may be due to the distinction between a well-planned strategic decision to move to remote work and the need to work from home overnight due to a pandemic.
Hybrid Work- Consequences for Stress and Work Engagement	Workload, Control, Reward, Community, Fairness, and Values are six key aspects that impact burnout and work engagement. Subsequent studies revealed a complex relationship between work-life areas and burnout and commitment.
Impact of Hybrid Work Culture on Organisational Effectiveness	The study aims to assess the effects of hybrid work cultures on organisational effectiveness. Research suggests that remote and hybrid work arrangements improve employee engagement.
Hybrid Working Method	Previous research on hybrid working, telework, and flexible work arrangements suggests that organisations should promote work-from-home policies and adjust their working culture to retain top talent in a competitive market.
The impact of hybrid work culture on interpersonal relations	The research reveals the organisation's unique traits and why hybrid work rules did not significantly improve interpersonal relationships. The study identifies a competency gap among managers. Some organisations' reluctance to hybrid work may stem from fear of the gap and management's limited logic in decision-making.
A Casual Study On Hybrid Model And Its Impact On Employee Job Performance	The hybrid work model has both positive and negative effects on organizations, requiring shifts in organizational dynamics to align business and employee roles. Regular communication is vital for a healthy workforce, and performance is monitored alone and in teams, tied to corporate goals. Peer interactions foster a positive work culture. As a new way of working, hybrid work encourages firms to adopt integrated approaches to develop policies that promote engagement and job satisfaction.

Literature review on: Factors influencing Hybrid work culture for middle managers with respect to the service sector

A. Talent Acquisition and Talent Retention to Hybrid Work Culture:

Sustainability of HR: A hybrid work culture in human resources (HR) is dependent on a number of elements, such as organisational culture, leadership, technology, policy, and employee well-being. Here's a thorough examination of how HR can guarantee a hybrid work model's sustainability:

- **Employee Engagement & Well-Being:** Work-Life Balance: To avoid burnout, provide flexible scheduling. Support for Mental Health: Offer wellness initiatives, online counselling, and frequent check-ins.
- **Inclusive Culture:** Use recognition initiatives to make remote workers feel just as appreciated as those who work in offices.
- **Technology & Digital Transformation Collaboration Tools:** For smooth communication, use Zoom, Microsoft Teams, or Slack. AI & Automation: Use AI-powered HR solutions for employee assistance, training, and onboarding.
- **Compliance & Policies:** Guidelines for Remote Work: Clearly define your expectations regarding availability, work hours, and performance evaluations. Equal Opportunities: Make sure that both in-person and remote workers receive equitable training, compensation, and promotions. Legal Compliance: Comply with data privacy and labour laws.
- **Leadership & Management Adaptation Trust-Based Management:** Put more emphasis on performance evaluation based on outputs rather than time-based tracking. Managerial Training: Give executives the tools they need to successfully lead hybrid teams. Frequent Feedback Loops: To determine employee mood, use virtual town halls and questionnaires.
- **Use of Sustainable Office Space:** Shared workspaces and hot desking: minimise workplace space and maximise resource use. Encourage energy-efficient workstations, digital recordkeeping, and environmentally friendly modes of transportation.

- **Hybrid Work Model Cost Savings:** Less Office Space and Utilities Large office spaces are not as necessary when there are fewer staff working on-site. Savings on maintenance, office supplies, power, and rent. Using co-working spaces or hot desking further reduces costs. Reduced Overhead for Employees: decreased gasoline, parking, and travel allowance payments for commuting. Less money is spent on events, coffee, and free meals that are provided at work. Reduced Turnover & Increased Retention: Work-life balance is enhanced via hybrid work, which raises employee happiness. Hiring and training costs are decreased by lower attrition rates. Reduced Recruiting Expenses: Hiring from less expensive areas is made possible by having access to a worldwide talent pool.
- **Leveraging a Hybrid Model to Balance Cost and Productivity:** Investing in technology that facilitates remote collaboration is one way to decrease HR expenses in a hybrid workplace. Put flexible office space methods into practice (co-working prospects, hot desking). Improve worker satisfaction to lower attrition expenses. Track productivity using data analytics and modify plans as necessary.

B. Using Untapped Potential to Keep Workers in a Hybrid Work Environment:

By providing flexibility, diversity, and career advancement, a hybrid work culture can assist companies in retaining current staff members and accessing underutilised talent pools.

Here's how:

- **Locating Talent Pools That Are Untapped-** People with disabilities could have trouble getting to work. Schedule flexibility is necessary for parents and other carers. Veterans making the move to employment. Geographically Dispersed Talent Reach out to foreign or rural workers who might not move. Hiring from less expensive areas without sacrificing quality. Professionals in their second careers and career returnees are switchers in their mid-career seeking fresh prospects. Professionals on career breaks and returning mothers looking for flexibility.

- **Using Hybrid Work as a Strategy for Retention:** Increased Job Satisfaction Through Flexibility: Work-life balance is valued by employees, which lowers turnover and burnout. Customised work schedules are supported by hybrid models, which boost employee engagement. Career Development & Internal Upskilling: To unleash untapped potential, provide mentorship and virtual training. Establish internal mobility initiatives to keep talented workers. An Inclusive

Culture at Work: Diversity, equity, and inclusion (DEI) are promoted by hybrid work. Guarantees remote workers equitable access to leadership positions and promotions. Create hybrid-specific regulations to draw in untapped talent. Make an investment in mentorship and remote training for professional growth. Monitor staff engagement and retention using AI and data analytics. Provide wellness assistance and virtual team-building to promote an inclusive culture.

C. How hybrid work culture adopts the different personality types:

Personality Trait	Needs in a Hybrid Setup	Culture Fit Tips
Introverts	Quiet focus time, fewer meetings	Encourage async work, offer office quiet zones
Extraverts	Social interaction, team bonding	Regular team meetups, virtual coffee chats
Sensors	Clear rules, routines	Communicate policies clearly, offer set schedules
Intuitive	Flexibility, innovation	Encourage idea-sharing platforms, dynamic projects
Thinkers	Clarity, efficiency	Use structured tools like Trello or Notion
Feelers	Empathy, connection	Promote wellness programs, emotional check-ins
Judgers	Order, predictability	Let them plan ahead with shared calendars
Perceivers	Flexibility, spontaneity	Give room for autonomy and adaptive schedules

D. Emotional Intelligence in Hybrid Work Culture

Remote workers need to recognize how their emotions, stress levels, and communication styles impact virtual interactions. For instance, being aware of feeling irritable after consecutive Zoom meetings can prompt someone to schedule breaks to manage their mood effectively. In a hybrid environment filled with potential distractions and uncertainty, emotional intelligence plays a key role in helping individuals stay calm, flexible, and optimistic. The ability to manage emotions prevents frustration and supports a balanced mindset. With fewer in-person cues and the absence of traditional office energy, intrinsic motivation becomes essential. Emotionally intelligent managers can inspire and energize their teams by understanding individual drivers and maintaining meaningful engagement. While some employees thrive remotely, others may face challenges; empathetic leaders understand these varied experiences and provide personalized support. Empathy also fosters patience and kindness among colleagues, strengthening team cohesion. Forming strong virtual connections can be difficult, but emotionally intelligent teams maintain relationships

through check-ins, thoughtful communication, and virtual bonding, ensuring a sense of community and collaboration.

Research Design:

The research design utilised in this study is descriptive analysis. Descriptive research describes data and features about the population or phenomenon being examined. It established the guidelines for data collection, measurement, and analysis. The conceptual framework that the research presents is known as the research design. It is a strategy that outlines the kinds and sources of data pertaining to the study issue. A descriptive study is concerned with illustrating the characteristics of a particular person or group. It also addresses particular forecasts together with a description of facts and traits pertaining to people, groups, and circumstances. This study's explanation of the hybrid working paradigm serves as its sole foundation. The researcher's view of this study is unaffected. Because of its rigidity, the design needs to maximise reliability and include adequate safeguards against bias.

Research Approach

The research follows a quantitative approach, using structured questionnaires to gather numerical data for statistical analysis.

Research Objective:

- The primary goal is to examine the significant relation of factors influencing and hybrid work culture of selected IT web development companies of Surat region.
- To evaluate the employee productivity of IT employees under a hybrid work model.

Population and Sampling

- Population: Middle-level managers working in selected IT website development companies in the Surat Region.
- Sampling Technique: The convenience sampling technique was used for the present study.
- Sample Size: A total of 120 middle managers were surveyed.

Tools for Data Analysis

- Reliability Testing: Cronbach's Alpha to test the internal consistency of the questionnaire.

Inferential Statistics:

- Kruskal-Wallis Test – to identify differences in perception based on demographics (e.g., age, gender, experience).

Statistical Software

Data was analysed using IBM SPSS Statistics to run all statistical tests and reliability analysis.

Limitations of the Study

- The study is restricted to the Surat region and IT website development firms.

A: Kruskal Wallis Test Relationship between Age & Factors influencing Hybrid Work Culture variables.

Test Statistics^b

	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014
Chi-Square	4.739	4.069	4.877	1.092	5.550	2.250	1.943
df	3	3	3	3	3	3	3
Asymp. Sig.	.192	.254	.181	.779	.136	.522	.584

a. Kruskal Wallis Test, b. Grouping Variable: Age

- The findings may not be generalisable to all sectors or regions.

Data Collection Method

- Primary Data: Collected through a structured questionnaire designed on a 5-point Likert scale,
- Secondary Data: Collected from journals, company reports, and previous research studies related to hybrid work.

Reliability Test

Case Processing Summary

		N	%
Cases	Valid	118	98.3
	Excluded	2	1.7
	Total	120	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.943	16

Interpretation: A Cronbach's Alpha of 0.943 was obtained from the reliability analysis of the scale measuring the factors influencing hybrid work culture among middle managers in IT website development companies in the Surat area. This suggests that the scale's items have a very high degree of internal consistency. A Cronbach's Alpha value above 0.70 is deemed acceptable, while values above 0.90 signify exceptional reliability, per Nunnally (1978). As a result, the scale employed in this study is considered trustworthy for more research.

Test Statistics^b

	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022
Chi-Square	8.251	8.929	3.919	4.809	2.505	10.817	2.591	1.047
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.041	.030	.270	.186	.474	.013	.459	.790

a. Kruskal Wallis Test, b. Grouping Variable: Age

Interpretation:

The findings indicate that there are statistically significant differences in perceptions among age groups ($p < 0.05$) for three factors: Employees feel less stressed working in a hybrid environment. ($p = 0.041$), Employees have more autonomy over how they manage their time. ($p = 0.030$), and receives adequate support and feedback from my superiors in a hybrid setup. ($p = 0.013$). This suggests that middle managers' perceptions of these specific elements of hybrid work culture are significantly influenced by age. There were no discernible variations in the remaining variables.

B: Kruskal Wallis Test Relationship between Gender & Factors influencing Hybrid Work Culture variables.
Test Statistics^b

	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014
Chi-Square	.022	1.048	2.723	.001	.722	.468	3.106
df	1	1	1	1	1	1	1
Asymp. Sig.	.881	.306	.099	.970	.396	.494	.078

a. Kruskal Wallis Test, b. Grouping Variable: Gender

Test Statistics^b

	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022
Chi-Square	.000	.455	.006	.126	.111	.104	.701	.001
df	1	1	1	1	1	1	1	1
Asymp. Sig.	.994	.500	.936	.723	.739	.747	.403	.979

a. Kruskal Wallis Test, b. Grouping Variable: Gender

Interpretation:

There are no statistically significant variations between the two gender groups' perceptions of these hybrid work culture elements, as all p-values are significantly over the 0.05 cutoff.

C: Kruskal Wallis Test Relationship between Years of Experience & Factors influencing Hybrid Work Culture variables.
Test Statistics^b

	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014
Chi-Square	3.674	4.993	4.908	1.096	3.926	6.553	11.725
df	3	3	3	3	3	3	3

Asymp. Sig.	.299	.172	.179	.778	.270	.088	.008
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a. Kruskal Wallis Test, b. Grouping Variable: Years of Experience

Test Statistics^b

	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022
Chi-Square	8.436	4.243	2.924	10.727	7.212	3.734	2.101	3.747
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.038	.236	.403	.013	.065	.292	.552	.290

a. Kruskal Wallis Test, b. Grouping Variable: Years of Experience

Interpretation: Of these variables, only Hybrid work helps me maintain a better work-life balance. Demonstrated a statistically significant variation in group perception ($p = 0.008 < 0.05$). There were no discernible changes in the other components. This implies that while the other parameters measured are unaffected by the demographic or grouping variable represented by Years of Experience in IT Industry, perceptions of Hybrid work help me maintain a better work-life balance.

D: Kruskal Wallis Test Relationship between Years in Current Role as Middle Manager & Factors influencing Hybrid Work Culture variables.

Test Statistics^b

	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014
Chi-Square	11.201	17.051	8.315	9.902	10.630	10.092	6.901
df	3	3	3	3	3	3	3
Asymp. Sig.	.011	.001	.040	.019	.014	.018	.075

a. Kruskal Wallis Test, b. Grouping Variable: Current Role as Middle Manager

Test Statistics^b

	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022
Chi-Square	8.921	5.569	2.765	13.989	7.384	5.051	3.138	8.409
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.030	.135	.429	.003	.061	.168	.371	.038

a. Kruskal Wallis Test, b. Grouping Variable: Current role as middle manager

Interpretation: To provide the necessary tools and infrastructure, management supports flexible work arrangements, clear policies are in place, I am able to collaborate effectively with my team, communication across departments remains effective, and regular virtual meetings help maintain the team. I feel less stressed working ($p = 0.030$), performance is not negatively affected by remote work days ($p = 0.003$), and trust between management and employees regarding output and accountability ($p = 0.038$). The results show statistically significant differences between the groups (all p -values < 0.05).

There was no discernible difference in the factor VAR00014 ($p = 0.075$). This indicates that with the exception of Hybrid work helping me maintain a better work-life balance, the variable represented by VAR00004 significantly affects perceptions of the majority of elements affecting hybrid work culture.

E: Kruskal Wallis Test Relationship between Years in Company Size & Factors Influencing Hybrid Work Culture Variables.

Test Statistics^b

	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014
Chi-Square	14.120	14.060	8.770	2.979	7.923	13.907	2.977
df	2	2	2	2	2	2	2
Asymp. Sig.	.001	.001	.012	.225	.019	.001	.226

a. Kruskal Wallis Test, b. Grouping Variable: VAR00005

Test Statistics^b

	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022
Chi-Square	9.476	5.624	.187	10.831	4.685	.108	2.946	8.445
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.009	.060	.911	.004	.096	.947	.229	.015

a. Kruskal Wallis Test, b. Grouping Variable: Company Size

Interpretation: For the parameters, the organisation provides the necessary tools and infrastructure for hybrid work., management supports flexible work arrangements, Clear policies are in place, Communication across departments remains effective, and Regular virtual meetings help maintain team alignment, feel less stressed working in a hybrid environment ($p = 0.009$), performance is not negatively affected by remote work days., and trust between management and employees regarding output and accountability. ($p = 0.015$) the results show statistically significant differences between the groups (all p -values < 0.05). Able to collaborate effectively with my team, and Hybrid work helps me maintain a better work-life balance; however, it did not differ significantly ($p > 0.05$).

Findings

The Kruskal-Wallis H test was conducted to assess whether perceptions of various factors influencing the hybrid work culture differ significantly across groups based on demographic variables.

- Age showed significant differences in perceptions for factors feeling less stressed working in a hybrid environment, performance is not negatively affected by remote work days, and trust between management and employees regarding output and accountability ($p < 0.05$), indicating that middle managers of different age groups have varied views on these aspects of hybrid work culture.
- Gender did not show any significant differences in perceptions for any of the factors ($p > 0.05$), suggesting similar attitudes towards hybrid work culture across male and female managers.
- Experience revealed significant differences for several factors, including organisation provides the necessary tools and infrastructure for hybrid work, management supports flexible work arrangements, Clear policies are in place for hybrid work operations, Communication across departments remains effective, and VAR00013 ($p < 0.05$), highlighting the role of work experience in shaping perceptions of hybrid work.
- Department as a grouping variable showed significant variation in perceptions for factors organisation provides the necessary tools and infrastructure for hybrid work; management supports flexible work arrangements, Clear policies are in place for hybrid work operations, able to collaborate effectively with my team in a hybrid setup, Communication across Departments remain effective, and Regular virtual meetings help maintain team alignment

($p < 0.05$), reflecting departmental influence on hybrid work culture viewpoints.

- Job Role demonstrated significant differences in factors, such as feeling less stressed working in a hybrid environment, my performance not being negatively affected by remote work days, and my leadership effectively managing hybrid teams. ($p < 0.05$), indicating role-specific perceptions among middle managers.

Conclusion

The findings imply that middle managers' judgements of specific elements influencing the hybrid work culture are highly influenced by demographic traits like age, experience, department, and job role. This emphasises how crucial it is to take demographic diversity into account when developing interventions or policies for mixed employment arrangements. But in this case, gender doesn't seem to have an effect on impressions. By using these data, companies can better adapt their hybrid work strategies to the demands and preferences of various managerial groups. To determine which particular groups, differ considerably on the components exhibiting variation, more post hoc analysis is advised.

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Curricular Innovations and Institutional Support in Developing Entrepreneurial Competencies in Higher Education: A Conceptual Exploration

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Abstract

This research examines the key determinants of effective entrepreneurial education, focusing on four critical factors: institutional support, academic curriculum orientation, entrepreneurial knowledge acquisition, and opportunity recognition. Entrepreneurial education in higher education plays a vital role in developing students' entrepreneurial capabilities and intentions, contributing significantly to economic and social development. While previous studies often examine these factors separately, this study addresses their combined impact using a structured conceptual framework. It analyses how institutional support fosters a conducive environment, how curriculum imparts essential knowledge and skills, how knowledge acquisition enhances entrepreneurial ability, and how opportunity recognition makes education practical. By studying these interconnected elements, the research provides comprehensive insights for developing robust entrepreneurial education systems. The findings will guide academic policymakers, institutional leaders, and educators in designing effective programs, ultimately fostering entrepreneurial mindsets and increasing students' readiness to seize opportunities.

Keywords: Entrepreneurial Education, Entrepreneurial Competencies, Entrepreneurial Intention, Institutional Support, Knowledge Acquisition, Curriculum Design.

Introduction

With the rapid growth of the global economy, entrepreneurship has become a major force driving innovation, economic progress, and social development. Entrepreneurial education, though relatively new in higher education, has quickly become a key area of academic focus (Higgins et al., 2013). While it once centered on business management topics like market analysis and business plans, it now emphasizes core entrepreneurial concepts (Daddi et al., 2020). This shift reflects a broader understanding of entrepreneurship's role in shaping national economies through innovation, competition, job creation, and wealth generation (Daddi et al., 2020). HEIs play a crucial role in building students' entrepreneurial skills, preparing them to tackle complex challenges and seize new opportunities (OECD, 2008).

Curricular innovations such as experiential learning, interdisciplinary approaches, and problem-solving exercises are essential in fostering entrepreneurial thinking. Babson College's Entrepreneurial Thought and Action (ETA) model demonstrates how experiential learning can encourage creativity and ethical business practices (Babson College, n.d.). Similarly, Delhi Skill and Entrepreneurship University (DSEU) offers flexible, industry-focused programs that bridge academia and industry to

boost students' employability and entrepreneurial potential (Times of India, 2025).

This study explores four key drivers of entrepreneurial higher education: academic curriculum orientation, institutional support, entrepreneurial knowledge acquisition, and opportunity recognition. These include curriculum design that fosters innovation, institutional resources and mentoring, the learning of entrepreneurial skills through diverse formats, and the student's ability to identify and evaluate viable business opportunities.

The goal of this study is to conceptually examine how these variables collectively support the development of entrepreneurial competencies in higher education. The proposed model provides a broad view of how curriculum strategies and institutional mechanisms contribute to nurturing entrepreneurship in students.

Objectives

- To explore how institutional support influences the development of entrepreneurial competencies in higher education.
- To examine the role of academic curriculum orientation in enhancing entrepreneurial skills and mindset among students in higher education.
- To understand how entrepreneurial knowledge acquisition and opportunity recognition contribute to entrepreneurial learning outcomes.

Literature Review

The intention to pursue entrepreneurship among university learners has emerged as a focal area in contemporary academic inquiry, primarily due to its strong association with actual entrepreneurial behaviour. Scholars have investigated a diverse set of influences including personal, educational, and environmental factors to explain the factors that drive these intentions. A notable contribution was made by Karimi et al. (2014) who applied the Theory of Planned Behaviour (TPB) to assess how gender and exposure to entrepreneurial role models shape intention among Iranian students. Their results highlighted that role models affect entrepreneurial intent indirectly by influencing perceptions, attitudes, and behavioural control. Interestingly, the study observed that subjective norms had a greater influence on female students, while male students

were more influenced through perceived behavioural control.

Expanding the conceptual foundation, Chahal et al. (2023) combined TPB with insights from Social Cognitive Theory (SCT) and Ecological Systems Theory (EST) to explore how the educational context and motivational drivers affect entrepreneurial intention among Indian students. Their findings, derived using structural equation modelling, demonstrated both direct and mediated effects of entrepreneurial education and environmental support, with motivation acting as a crucial intermediary. Cross-national variations have also been explored. Davey et al. (2011) conducted a comparative study involving students from African and European nations. They found that those from emerging economies showed more favourable attitudes and a higher likelihood of pursuing entrepreneurial careers. Role models and prior business exposure varied significantly between regions, underscoring the importance of considering cultural and economic context.

Focusing on skill-building, Lv et al. (2021) demonstrated that entrepreneurial competencies enhanced through initiatives such as startup competitions and hands-on training play a mediating role between entrepreneurship education and the intention to launch ventures. Their research reaffirmed the utility of competence development within TPB models.

In a related vein, Iqbal et al. (2022) investigated the impact of various curriculum components content, teaching methods, resources, and assessment strategies on students' entrepreneurial skills. Their research highlighted that the campus environment strengthens these competencies, serving as a bridge between structured learning and entrepreneurial capability.

Further insight comes from Makai and Dóry (2023), who applied the Entrepreneurial Intention-Constraint Model (EICM) in combination with TPB to assess the influence of university-level support mechanisms in Hungary. Their data, gathered from participants in a national entrepreneurship initiative, revealed that institutional backing and a supportive ecosystem significantly uplift students' confidence and attitudes toward starting a business.

Parallel to these psychological and institutional factors, recent research has emphasized the transformation of higher education itself. According to Rosienkiewicz et al. (2024), modern universities are evolving into innovation hubs through new pedagogical models such as IDEATION and DEETECHTIVE. These frameworks encourage interdisciplinary engagement and align with broader innovation ecosystems, such as the Quintuple Helix model, moving education from passive learning to active co-creation.

Psychological factors have also been shown to mediate the impact of education. Soomro and Shah (2021), studying business students in Pakistan, demonstrated that increased knowledge and recognition of business opportunities improved self-belief and the need for achievement, both of which influenced entrepreneurial aspirations. On the subject of skills, Ferreras-Garcia et al. (2021) developed a model linking general competencies (e.g., problem-solving, communication) and specific professional abilities to entrepreneurial readiness. Their findings suggest that embedding both skill types into curricula is essential for effective entrepreneurship education.

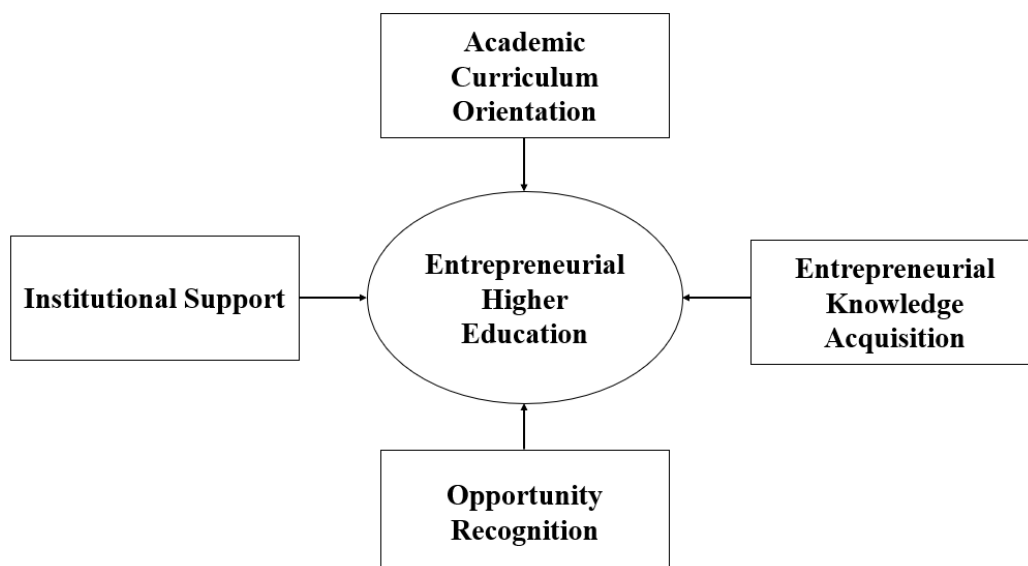
Kaur and Chawla (2025) provided further clarity by differentiating between classroom-based (curriculum support) and activity-based (extracurricular support) education. While the former had no immediate effect on entrepreneurial intention, it influenced it indirectly by shaping attitudes and self-efficacy.

Conversely, practical engagement such as mentoring or participating in incubators yielded both direct and indirect benefits.

In the context of digital transformation, Weng et al. (2025) analyzed how artificial intelligence is reshaping entrepreneurship education. Their SWOT analysis recognized the benefits of customization and efficiency, while also noting drawbacks like diminished peer interaction and privacy concerns. Nonetheless, AI was seen as a catalyst for what they termed “EE 4.0” a flexible and tech-driven approach to learning entrepreneurship.

Structural conditions within educational institutions also shape entrepreneurial outcomes. Al Balushi et al. (2023) emphasized the importance of integrating classroom content with real-world experiences. Through interviews and surveys, they found that experiential learning, mentorship, and exposure to actual business scenarios were pivotal in developing entrepreneurial competencies. Finally, in India, Lingappa et al. (2020) investigated the influence of social and academic networks on engineering students’ intentions to start their own businesses. Using TPB, they found that while peer and institutional influences positively affected entrepreneurial orientation, outdated academic practices were seen as obstacles, thereby calling for more student-centred, experiential teaching strategies.

Conceptual Model



Methodology

The study adopts a structured conceptual framework in developing a theoretical understanding of how curriculum innovations and institutional support influence entrepreneurial competencies in higher education. A narrative literature review was conducted using scholarly articles, and empirical studies sourced from databases such as Scopus, Web of Science and Google Scholar. Emphasis was placed on recent studies published within the last 15 years to ensure contextual relevance. Keywords such as “entrepreneurial education,” “curriculum design,” “institutional support,” and “entrepreneurial intention” guided the search. The model was shaped using established theories like the Theory of Planned Behaviour, and extending deductive reasoning to some practical approaches in entrepreneurial education context. Constructs were chosen based on their frequency of use in previous studies and their demonstrated influence on student entrepreneurial outcomes.

Discussion

1. Institutional Support:

Institutional support is vital in shaping entrepreneurial higher education. Universities that offer mentorship, funding, and networking opportunities encourage students to explore and test their entrepreneurial ideas (Siegel & Wright, 2015). Such support systems reduce the fear of failure and promote experimentation. On-campus ecosystems like incubators and innovation labs help bridge academic theory with entrepreneurial practice (Mian et al., 2016). Institutions with strong entrepreneurship centres are more likely to produce graduates who pursue startups (Guerrero et al., 2016).

The role of higher education institutions (HEIs) in building entrepreneurial capacity has gained attention, especially with the growing focus on venture creation (Teixeira & Davey, 2010). For entrepreneurial education to thrive, a strong support system is essential. Institutional policies that allow flexible course structures and encourage interdisciplinary approaches support innovation and creative problem-solving (Fayolle & Redford, 2014). The institution's culture also matters whether

it encourages or stifles entrepreneurship can affect students' attitudes and ambitions (Walter & Block, 2016). Action-oriented learning, which emphasizes real-world tasks and professional responsibility, is essential to entrepreneurial development (Daddi et al., 2020). However, not all universities offer equal support. Limited resources in many institutions make it difficult for students to engage in entrepreneurial activities (Nabi et al., 2017). Therefore, institutions must provide an environment that blends academic teaching with practical entrepreneurial exposure.

2. Academic Curriculum Orientation:

Curriculum orientation is a key element in developing entrepreneurial learning outcomes. Traditional classroom methods often fail to prepare students for the dynamic challenges of entrepreneurship (Higgins et al., 2013). If curricula do not align with real-world needs, students may be unprepared for modern business demands (Ohland, 2013). Cross-disciplinary entrepreneurship education helps develop critical thinking and problem-solving skills central to successful entrepreneurship (Fayolle & Gailly, 2015). Academic structures shape how entrepreneurship is taught and implemented (Yami et al., 2021). Purely theoretical content often lacks the practical relevance needed to inspire action. Research suggests that incorporating real-life business challenges into coursework boosts entrepreneurial intention (Pittaway & Cope, 2007).

Tools like case studies, simulations, and industry-based projects help students connect theory with real-world application (Rae, 2010). Curricula that reflect market trends such as sustainability or digital innovation better prepare students for today's entrepreneurial landscape (Neck & Greene, 2011). Entrepreneurial thinking also involves soft skills like ambiguity tolerance, resilience, empathy, creativity, and collaboration (Peschl et al., 2020). Thus, entrepreneurial education should integrate theory with practical tools to build real-world competencies.

3. Entrepreneurial Knowledge Acquisition:

Entrepreneurial knowledge includes learning how to identify opportunities, manage risks, design business models, and innovate. It plays a key role in building entrepreneurial self-confidence and intention (Bae et al., 2014). Universities provide this knowledge

through formal lectures, workshops, and hands-on learning. Structured programs have been shown to improve entrepreneurial awareness and readiness (Souitaris et al., 2007). Guest speakers, case studies, and alumni experiences add real-world context to learning (Lorz et al., 2013). Informal platforms like student clubs, online tools, and peer collaboration also enrich the process. Practical engagement via internships, simulations, or pitch contests transforms knowledge into action. These experiences deepen learning and improve application (Pittaway & Edwards, 2012). Entrepreneurial knowledge, therefore, must go beyond books and be rooted in active, experience-based teaching.

4. Opportunity Recognition:

Recognizing business opportunities is a foundational entrepreneurial skill. It involves identifying gaps in the market and creating viable solutions (Baron, 2006). Within education, this requires an environment that fosters creativity, awareness, and business insight. Students in multidisciplinary learning settings are more likely to spot entrepreneurial opportunities (Kirzner, 1997; Shane & Venkataraman, 2000).

Innovation challenges and startup competitions mimic real-life scenarios that train students to observe, ideate, and test ideas. Opportunity recognition is linked to prior knowledge, social capital, and thinking styles (Ardichvili et al., 2003). Courses that include market research, consumer insights, and technology trends help refine ideas into business models. Mentoring can further guide students in validating their ideas. Encouraging this skill supports new business creation and builds future innovators within organizations. Hence, institutions should foster opportunity recognition through real-world exposure and iterative learning.

Conclusion

This paper focuses on the crucial interrelationship between curriculum innovations and institutional support in constructing entrepreneurial competencies in higher education. An innovative curriculum, when coupled with pragmatic needs of the industry, fosters entrepreneurial attitudes. Similarly, institutional support, through incubation, funding, and mentorship, facilitates students to actualize ideas into enterprises.

Future Scope

While this study highlights curricular innovations and institutional support, future research could validate the model using quantitative or qualitative methods across varied educational settings. Comparative studies between public and private universities or across countries with different economic contexts may reveal deeper insights into institutional influences. Longitudinal research can track how students' entrepreneurial skills evolve over time due to curricular shifts or policy reforms. Future studies may also consider external ecosystem factors like government and industry support. Additionally, there is scope to develop practical tools or frameworks to help institutions assess and enhance their entrepreneurship education strategies.

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Tourism and Urban Development in Viksit Bharat 2047 and Viksit Odisha 2036: Challenges, Opportunities, and the Way Forward

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Abstract

India's vision of Viksit Bharat 2047 and Odisha's mission of Viksit Odisha 2036 aim to establish India as a global leader and Odisha as a model state through sustainable development, technological advancements, and inclusive growth. This research paper explores the critical role of tourism and urban development in achieving these ambitious goals. Tourism, being a major contributor to economic growth, cultural preservation, and employment generation, is examined alongside urban development initiatives such as smart cities, infrastructure upgrades, and heritage conservation. The study identifies challenges such as environmental degradation, overcrowding at tourist destinations, inadequate urban planning, and unequal resource distribution. Opportunities include leveraging Odisha's rich cultural heritage and natural resources to boost tourism while integrating modern urban planning tools like green infrastructure and digital governance. The paper proposes actionable strategies, including community participation, public-private partnerships, and technology-driven solutions to achieve sustainable tourism and urban development. By aligning Odisha's developmental aspirations with India's national goals, this paper highlights a roadmap for balanced progress in both sectors.

Keywords: *Viksit Bharat 2047, Viksit Odisha 2036, Tourism, Urban Development, Sustainable Growth*

Introduction

India's Viksit Bharat 2047 vision is a transformative agenda aimed at making the nation a leading global economy by 2047 while ensuring social equity, technological innovation, and environmental sustainability. This ambitious plan seeks to position India as a \$30 trillion economy, emphasizing technological advancements, infrastructure development, and inclusive growth. Similarly, Odisha's Viksit Odisha 2036 mission envisions the state as a model for sustainable development by leveraging its unique cultural heritage and natural resources. The goal is to achieve a \$500 billion economy by 2036, focusing on sectors that can drive economic diversification and improve the quality of life for its citizens. Tourism and urban development are pivotal sectors in realizing these visions due to their potential to drive economic growth, create employment opportunities, enhance infrastructure, and preserve cultural identity. Odisha is home to world-renowned heritage sites like the Jagannath Temple in Puri and the Konark Sun Temple, along with natural wonders like Chilika Lake. These assets provide immense potential for tourism-driven economic growth. However, challenges such as overcrowding at tourist destinations, environmental degradation, lack of sustainable urban planning, and inadequate infrastructure need to be addressed urgently.

The Viksit Bharat 2047 vision emphasizes the importance of sustainable tourism as a means to promote cultural heritage while driving economic growth. NITI Aayog has highlighted the role of cultural tourism in preserving India's rich cultural legacy while generating employment opportunities. Similarly, Odisha's government has identified ecotourism projects in Chilika Lake and tribal art promotion as key drivers of its Viksit Odisha 2036 mission. These initiatives not only boost local economies but also help preserve the state's unique cultural and natural resources.

Urban development is another critical area, with initiatives like smart cities and infrastructure upgrades aimed at enhancing the quality of life for urban residents. Bhubaneswar's Smart City initiative serves as a model for integrating digital governance with traditional urban planning methods. However, gaps in equitable resource distribution and slum rehabilitation remain significant challenges. Addressing these challenges through strategic investments in infrastructure, skill development, and community engagement is essential for achieving the developmental goals set by both India and Odisha. This paper examines how tourism and urban development can contribute to achieving these visions while tackling systemic challenges through innovative strategies. By aligning Odisha's developmental aspirations with India's national goals, this paper provides a roadmap for balanced progress in both sectors.

Literature Review

Tourism has long been recognized as an economic multiplier for India. According to the Ministry of Tourism (2023), tourism contributes significantly to India's GDP annually. Studies by NITI Aayog emphasize the role of cultural heritage in promoting sustainable tourism under the Viksit Bharat framework. Similarly, Odisha's government documents highlight initiatives such as ecotourism projects in Chilika Lake and tribal art promotion as key drivers of its Viksit Odisha 2036 mission. Ahirwar et al. (2023) highlight that tourism contributes significantly to urban economic growth by generating employment opportunities and boosting local businesses. However, they also note challenges such as overcrowding at tourist destinations and strain on

urban infrastructure. Mishra et al. (2024) emphasize the importance of integrating sustainability principles into urban tourism planning. A study by MDPI (2023) explores how integrating rural areas into urban tourism circuits can empower high-quality tourism economies. Research by Tandfonline (2023) underscores the role of cultural tourism in preserving heritage while driving economic growth. Odisha's promotion of tribal art forms like Pattachitra aligns with this perspective. Bhubaneswar's Smart City initiative has been analyzed as a model for integrating digital governance with traditional urban planning methods. However, gaps in equitable resource distribution remain a concern. The Journal of Environmental Management (2023) identifies environmental degradation as a critical issue in tourism-dependent cities. This is particularly relevant for coastal regions like Puri. Mishra et al. (2024) discuss how the COVID-19 pandemic has reshaped urban tourism priorities toward health safety and digital solutions. Studies emphasize the need for community-led initiatives to ensure the equitable distribution of tourism benefits. Public-private partnerships (PPPs) have been identified as effective mechanisms for funding large-scale urban infrastructure projects. Research highlights the importance of skill development programs in reducing unemployment in the tourism sector.

Research Methodology

This research adopts a mixed-methods approach combining qualitative analysis with quantitative data synthesis from secondary sources such as government reports (e.g., NITI Aayog Vision 2047), academic journals (e.g., Journal of Environmental Management), and case studies (e.g., Bhubaneswar Smart City). Thematic analysis is used to identify trends in policy implementation, stakeholder participation, challenges faced by local communities, and socio-economic outcomes.

Result Analysis and Interpretation

Tourism Sector Analysis

- **Visitor Numbers:** In 2024, Odisha attracted approximately 4.5 million domestic tourists and 200,000 international tourists, with projections indicating a rise to 5.5 million domestic visitors by 2025, driven by initiatives like ecotourism

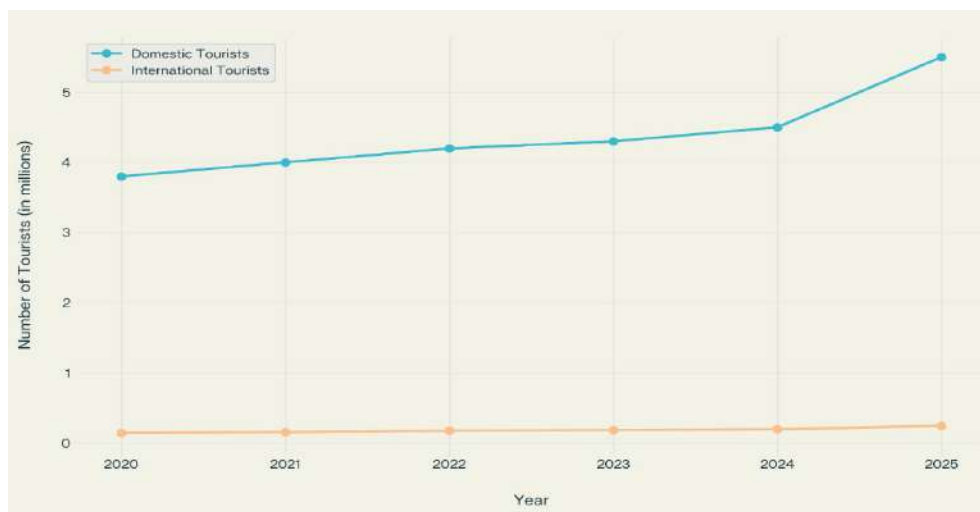
circuits.

- **Economic Contribution:** Tourism contributes an estimated ₹15,000 crore annually, accounting for around 8% of Odisha's GDP, making it one of the state's most significant economic drivers.
- **Employment Generation:** The sector employs over 2 lakh individuals, but seasonal unemployment remains high at around 30%, especially during off-peak seasons like monsoons.

Table 1: Tourism Sector Performance in Odisha (2024)

Indicator	Value
Domestic Tourists	4.5 million
International Tourists	200,000
Annual Economic Contribution	₹15,000 crore
Employment	2 lakh individuals
Seasonal Unemployment Rate	30%

Growth in Tourist Arrivals in Odisha (2020-2025)



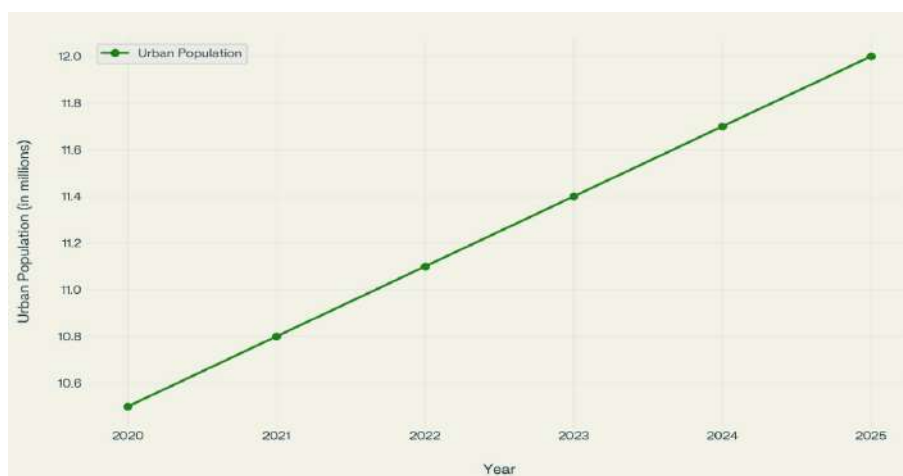
Urban Development Insights

- **Population Growth:** Odisha's urban population is projected to reach approximately 12 million by 2025, with Bhubaneswar growing at an annual rate of around 2.5%, necessitating robust urban planning measures.
- **Smart City Initiatives:** Bhubaneswar has invested over ₹1,200 crore in smart city projects, achieving significant milestones like digital governance coverage (70%) but limited progress on slum rehabilitation (25%).
- **Environmental Concerns:** Air quality has deteriorated by about 12% since 2020, attributed to rapid construction activities for tourism infrastructure near ecologically sensitive areas like Chilika Lake.

Table 2: Urban Development Metrics in Odisha (2024)

Indicator	Value
Urban Population Projection (2025)	12 million
Annual Urban Growth Rate (Bhubaneswar)	2.5%
Smart City Investment	₹1,200 crore
Digital Governance Coverage	70%
Slum Rehabilitation Coverage	25%
Air Quality Deterioration (2020-2024)	12%

Urban Population Growth in Odisha (2020-2025)



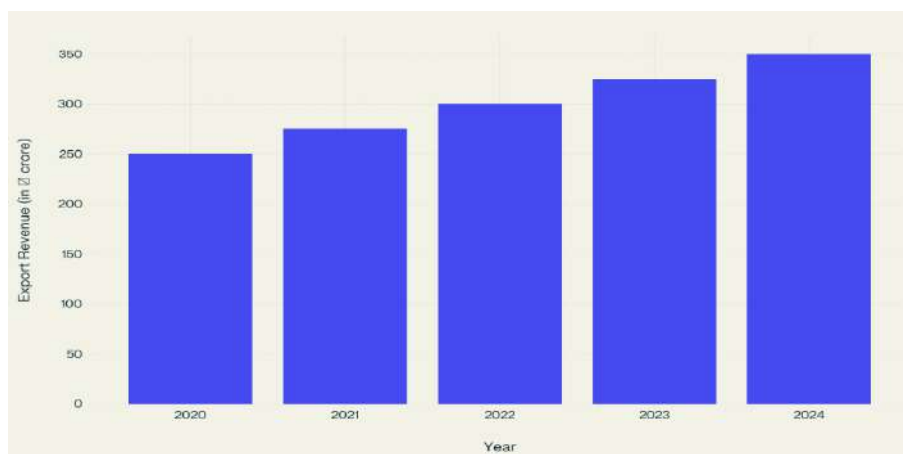
Cultural Preservation

Handicraft exports from Odisha grew by approximately 15% in 2024, generating revenues of around ₹350 crore, but over 60% of artisans earn below minimum wage, highlighting inequities in benefit distribution.

Table 3: Handicraft Exports and Artisan Welfare in Odisha (2024)

Indicator	Value
Handicraft Export Growth	15%
Annual Handicraft Export Revenue	₹350 crore
Percentage of Artisans Earning Below Minimum Wage	60%

Handicraft Export Growth in Odisha (2020-2024)



To address these challenges and capitalize on opportunities, several strategies are proposed. Firstly, allocating an additional budget of around ₹200 crore for waste management systems at key tourist sites like Puri can reduce plastic pollution by 40% by 2026. Secondly, increasing funding for slum rehabilitation projects under Smart City initiatives by ₹300 crore can achieve equitable housing solutions for marginalized communities by 2030. Developing integrated transport hubs connecting rural areas with major tourist destinations can promote rural-urban

integration. Launching community-led ecotourism projects with revenue-sharing models ensuring at least 15% direct benefits for local stakeholders can foster community participation. Organizing skill development programs targeting around 20,000 youth annually can reduce seasonal unemployment rates. Implementing AI-based crowd management systems during peak festivals like Rath Yatra and using GIS mapping tools to monitor environmental impacts at eco-sensitive zones like Chilika Lake can enhance sustainability.

Table 4: Proposed Strategies for Sustainable Tourism and Urban Development

Strategy	Description	Target
Waste Management	₹200 crore allocation	Reduce plastic pollution by 40% by 2026
Slum Rehabilitation	₹300 crore funding increase	Achieve 50% coverage by 2030
Rural-Urban Integration	Integrated transport hubs	Promote rural-urban integration
Community-Led Tourism	15% revenue sharing	Foster community participation
Skill Development	Target 20,000 youth annually	Reduce seasonal unemployment

Findings

- **Tourism Growth:** Odisha has witnessed a steady increase in tourist arrivals between 2020 and 2025. The growth in domestic tourists has been particularly significant, driven by improved connectivity, government promotional campaigns, and rising interest in cultural and heritage tourism within India. International tourist arrivals have also increased, albeit at a slower pace, reflecting global travel trends and the need for enhanced international marketing strategies. This upward trend highlights tourism's growing role as a key economic driver in the state.
- **Urbanization:** The urban population in Odisha has grown consistently from 2020 to 2025, reflecting rapid urbanization fueled by rural-to-urban migration, economic opportunities, and expansion of urban centres like Bhubaneswar and Cuttack. This growth places increasing pressure on urban infrastructure, housing, transportation, and public services, underscoring the urgent need for sustainable urban planning and development to accommodate the expanding population while maintaining quality of life.
- **Handicraft Exports:** Odisha's handicraft export revenue has shown steady growth between 2020 and 2024, indicating successful efforts to promote traditional crafts such as Pattachitra paintings, silver filigree, and tribal art. This growth not only contributes to the state's economy but also helps preserve its rich cultural heritage. However, challenges remain, including ensuring fair wages and improving the livelihoods of artisans, many of whom still earn below minimum wage.

Suggestions

- **Sustainable Tourism Practices:** To manage the environmental and social impacts of increasing tourist inflows, Odisha should enhance sustainable tourism practices. This includes implementing effective waste management and recycling programs at popular tourist sites, promoting eco-friendly transportation options, and encouraging responsible tourist behaviour. Additionally, involving local communities in tourism planning and management can ensure that tourism development benefits residents and preserves cultural and natural resources for future generations.
- **Urban Planning:** Odisha must adopt comprehensive and forward-looking urban planning strategies to address the challenges posed by rapid urbanization. This involves developing affordable housing projects, expanding and upgrading public transportation networks, improving water supply and sanitation systems, and ensuring efficient waste management. Urban planning should also focus on creating green spaces and promoting environmentally sustainable construction practices to enhance livability and reduce the ecological footprint of growing cities.
- **Artisan Support:** Policies aimed at improving the livelihoods of artisans are essential to sustain Odisha's cultural heritage. This includes ensuring fair wages, providing access to skill development and capacity-building programs, and facilitating better market access through e-commerce and export promotion. Supporting artisans with financial assistance, design innovation, and branding can help increase their income and

preserve traditional crafts, thereby fostering inclusive economic growth.

- **Infrastructure Development:** Significant investments are needed to upgrade and expand infrastructure to support both the tourism sector and the growing urban population. This includes improving road connectivity, enhancing airport and railway facilities, expanding accommodation options, and upgrading utilities such as electricity and water supply. Infrastructure development should be planned with sustainability in mind, incorporating smart technologies and green building standards to reduce environmental impact.
- **Ecotourism:** Promoting ecotourism circuits can help Odisha attract both domestic and international tourists while preserving its natural environment. Developing eco-friendly tourism activities around sites like Chilika Lake, Bhitarkanika National Park, and tribal regions can generate sustainable livelihoods for local communities and raise awareness about conservation. Ecotourism initiatives should emphasize minimal environmental disturbance, community participation, and education to balance tourism growth with ecological preservation.

Conclusion

Tourism and urban development are critical sectors for achieving India's Viksit Bharat 2047 vision and Odisha's Viksit Odisha 2036 mission. While these sectors offer immense opportunities for economic growth and cultural preservation, they also pose significant challenges related to sustainability and equitable resource distribution. By adopting integrated policy frameworks emphasizing community participation, technology adoption, and public-private partnerships (PPPs), both India and Odisha can achieve balanced progress toward their developmental goals.

Social/Managerial Implications

The findings have implications for policymakers at both state and national levels. State governments should implement stricter regulations on tourist footfall at ecologically sensitive sites. Hospitality managers must adopt sustainable practices, balancing profitability with conservation. National authorities should facilitate cross-state knowledge sharing on successful models.

Future Research Scope

Future studies can explore the long-term socio-economic impacts of tourism on tribal communities, conduct comparative analyses of smart city models across Indian states, and examine the role of AI-driven solutions in optimizing tourist flows during peak seasons.

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From Efficient Firms to a Developed Nation: Linking Working Capital Management to India's Tax Revenue and Viksit Bharat 2047

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Abstract

India's ambitious vision of *Viksit Bharat @2047* is a roadmap toward becoming a fully developed nation by its 100th year of independence. A major indicator of national development is the rise in government revenue through taxes. However, higher tax collection is possible only when companies and businesses are earning more and contributing more. This means that companies are profitable, and when companies are profitable, it reflects that they are functioning effectively and efficiently. One of the most visible signs of business efficiency is the proper management of working capital the way businesses manage their current assets and liabilities like cash, receivables, inventory, and payables. If these are well-managed, businesses avoid liquidity problems, reduce costs, and improve overall performance.

This paper explains in a simple and clear manner the connection between higher tax revenue and efficient business operations. It follows a logical flow: more tax revenue means more company profits, which means better efficiency, which largely depends on sound working capital management. The paper argues that efficient working capital practices help companies grow steadily, avoid unnecessary debt, and maintain strong cash flows all of which contribute to higher profitability and tax payment. The government, in turn, benefits from this through improved revenue, which can be used for development projects and public welfare.

The discussion is backed by literature and secondary data collected from various public sources like government reports, industry studies, and financial data of companies. It aims to show how small changes at the company level can have a big impact at the national level. By encouraging better financial practices in companies, India can move closer to its goal of becoming a developed nation by 2047.

Keywords: Taxation, Profitability, Efficiency, Growth, Management

Introduction

India's vision of *Viksit Bharat @2047* sets a clear target to transform into a developed economy by its centenary of independence. Government tax revenues are the primary source of funding for essential infrastructural development, including transportation networks, large dam projects, and the provision of enhanced public services, each contributing significantly to the overall advancement of the nation (Kassa, 2021). This Govt. revenue in India serves as the financial bedrock for realizing *Viksit Bharat 2047*, a strategic initiative with the objective of elevating India to developed nation status by 2047. Taxation, encompassing both direct levies on income, such as income tax, and indirect levies on consumption and production, like value-added tax, service tax, and customs duty, constitutes a vital instrument for funding social and economic development endeavors across the nation (Dey, 2021). Thus, the Indian taxation system plays a pivotal role in generating revenue for the government (Vijnana, 2024).

Tax collection is directly linked to how efficiently companies perform. Business efficiency drives profitability, and one of the most critical components of efficiency is working capital management. When firms manage liquidity well—through receivables, payables, and inventory management they often have more profits and pay more taxes (Vijnana, 2024). Business efficiency serves as a crucial determinant of profitability, with working capital management emerging as a pivotal component in this intricate relationship (Madhou et al., 2015). Effective management of working capital ensures that a company maintains optimal levels of current assets and liabilities, enabling it to meet its short-

term obligations while maximizing profitability (Mohamad & Saad, 2010). This entails strategically managing various components such as cash, accounts receivable, inventory, and accounts payable (Utami, 2011).

By understanding and improving working capital strategies across industries, India can unlock more stable corporate tax inflows fueling the vision of a self-reliant, prosperous, and globally competitive nation by 2047 (Government of India, 2023). Hence, this chapter explores these financial links toward national development.

Review of literature

A strong body of literature connects firm-level financial practices to broader economic outcomes. This section reviews key studies that explore the impact of working capital management on firm profitability and how efficient financial operations contribute to national tax revenue. The review highlights both international and Indian perspectives, providing empirical and theoretical support for the link between business efficiency and economic development. These studies collectively suggest that when firms manage their short-term assets and liabilities effectively, they not only enhance their own performance but also support public finance through improved tax compliance and higher profitability. A growing body of literature has established the critical link between working capital management (WCM) and firm profitability, which in turn impacts tax contributions and national economic growth.

Deloof (2003) studied Belgian firms and found a significant negative relationship between gross operating income and the days of receivables, inventory, and payables outstanding. This suggests that shorter cash cycles improve profitability, highlighting WCM as a key internal driver of firm performance. Later, Raheman and Nasr (2007) examined Pakistani firms and observed that firms with efficient inventory and receivables management reported higher profitability. They emphasized that proper WCM ensures liquidity, lowers debt dependency, and supports sustainable growth.

In the Indian context, Sharma and Kumar (2011) discovered that firms adopting an aggressive WCM approach minimizing current assets relative to

liabilities achieve better profitability. Their study confirms the strategic role of WCM in emerging markets and its relevance to India's developmental aspirations. Further, Lazaridis and Tryfonidis (2006), analyzing Greek firms, found that reducing the cash conversion cycle significantly enhances profitability. Their findings support the view that resource optimization, especially of short-term assets, improves business efficiency.

Singhania and Mehta (2017) further validated this link using Indian manufacturing data. Their study revealed that efficient WCM enhances return on assets and reduces financing costs, reinforcing the idea that financially healthy firms support stronger tax contributions. On a broader scale, Tanzi and Zee (2000) connected firm-level productivity with national tax revenue in emerging markets. Their work emphasized that efficient, transparent, and well-managed firms form the backbone of a sustainable tax system, essential for public finance and national development.

Recent studies continue to emphasize the impact of working capital efficiency on firm performance and financial contribution. Aktas et al. (2019) found that across 51 countries, firms with well-managed working capital achieved higher profitability and market value, highlighting its global significance. Gill et al. (2018) examined Canadian SMEs and reported that shorter receivables and inventory cycles significantly improved gross profitability. Similarly, Baños-Caballero et al. (2020) observed that firms with flexible working capital strategies were more resilient during economic uncertainty, maintaining both liquidity and tax obligations. These findings reinforce the view that efficient working capital management supports firm-level stability and indirectly enhances national fiscal strength.

Collectively, these studies build a strong foundation for understanding how internal corporate financial practices, especially WCM, influence profitability and indirectly contribute to government revenue and development goals such as Viksit Bharat 2047.

Objectives

Based on the above context and literature, the objectives of this research are as follows:

- To examine the relationship between working

capital management efficiency and firm profitability in the context of India's corporate sector.

- To analyze how enhanced firm profitability, driven by efficient operations, contributes to higher tax revenues that support national development initiatives (e.g., Viksit Bharat 2047).
- To integrate a relevant financial theory into this framework – specifically the Resource-Based View – in order to conceptualize how internal efficiencies translate into competitive advantage and greater tax contributions.

Model Diagram



Methodology

This study uses a qualitative, conceptual approach based on secondary data. It draws from existing literature, including journal articles, past research, and public reports. A detailed literature review was conducted to synthesize insights from both Indian and international studies on working capital management (WCM), profitability, and tax revenue. Sources include peer-reviewed journals (Scopus and Web of Science) and reliable government and institutional reports. The Resource-Based View (RBV) framework is used to link firm-level resource efficiency with financial performance. The approach is exploratory and analytical, aiming to connect company-level practices with broader revenue outcomes.

Discussion

This section examines how firm-level efficiency in working capital boosts profits and tax revenue, supporting Viksit Bharat.

Linking Working Capital Efficiency to Profitability and Tax Revenue

Efficient working capital management (WCM), often measured by the cash conversion cycle (CCC), improves profitability by freeing up tied capital and lowering costs (Deloof, 2003). Studies in India and

abroad confirm that efficient handling of inventory, receivables, and payables boosts margins (Sharma & Kumar, 2011; Singhania et al., 2014). In India, with a ~25% corporate tax rate, higher profits directly increase tax revenue. Corporate tax now contributes over half of total direct taxes (Ministry of Finance, 2024). Hence, WCM not only benefits firms but also strengthens public finances by expanding the tax base.

Technological and Operational Improvements

Indian firms are boosting working capital efficiency through technology like ERP automation, fintech tools, AI-driven credit underwriting, and lean supply chains. These solutions accelerate receivables, enhance cash visibility, and cut inventory days (CredAble Team, 2025; Gill et al., 2023). A recent Indian study confirms fintech platforms are reducing payment delays for SMEs (Bhat et al., 2024). Additionally, India ranks among the top global adopters of fintech (87% adoption), reflecting broad digital integration that supports liquidity and resilience (EY, 2025).

Profitability to Taxation – A Direct Link

Corporate profitability directly affects tax revenue through income tax collection. In India, companies pay a standard corporate tax rate of about 25%, rising slightly with surcharges. Reforms in 2019 reduced this rate to boost investment (PwC, 2025). In FY 2023–24, corporate taxes contributed ₹9.1 trillion, 26% of total tax revenue (Ministry of Finance, 2024). As profits grow, tax contributions rise proportionally. This cycle supports fiscal health without increasing tax rates. Strong profits also improve compliance and reporting (Kassa, 2021), making corporate earnings a vital source of stable, scalable revenue for national development.

The Resource-Based View (RBV) – A Theoretical Lens

The Resource-Based View (RBV) explains how internal capabilities like working capital efficiency can create lasting competitive advantages. If a firm manages cash, receivables, and inventory better than others, it holds a valuable, rare, inimitable, and non-substitutable (VRIN) resource (Barney, 1991). Efficient working capital practices improve liquidity and profitability outcomes hard for competitors to quickly copy. Roy et al. (2025) found that strategic

focus on working capital in Indian firms led to better performance, supporting RBV claims. Moreover, such financial efficiency aligns with national goals like Viksit Bharat 2047 by boosting firm-level profits and tax contributions. As Mishra and Agarwal (2023) note, firms that embed financial discipline in core processes contribute more sustainably to both their growth and public revenue.

Connecting Efficiency to National Development Goals

Efficient working capital management improves corporate profitability by shortening cash conversion cycles, freeing liquidity, and reducing financing costs (PwC India, 2023). These gains lead to higher

corporate tax payments without increasing tax rates, supporting India's fiscal goals. According to EY (2024), boosting tax revenue through productivity, not rate hikes, is key to sustainable growth. This aligns with the Indian government's Viksit Bharat 2047 vision, which aims to become a \$30 trillion economy by strengthening public finances and expanding the tax-to-GDP ratio to 25% (NITI Aayog, 2023). As the Economic Survey (Government of India, 2024) notes, rising tax buoyancy driven by corporate performance is essential to fund infrastructure, education, and health. Thus, working capital efficiency not only benefits firms but also contributes meaningfully to India's macroeconomic development and long-term fiscal stability.

The following Table 1 summarizes how key working capital metrics impact profitability and, in turn, tax revenue:

WCM Indicator	Impact on Profitability	Tax Revenue Implication
Days Sales Outstanding (DSO) (collection period)	Shorter DSO boosts liquidity and cuts credit risk, raising profits.	More profit means higher corporate tax.
Days Inventory Outstanding (DIO) (inventory holding period)	Lower DIO reduces storage costs and obsolescence, improving margins.	Higher margins increase taxable income.
Days Payables Outstanding (DPO) (payment period)	Optimal DPO improves liquidity via free short-term credit.	Profit gains raise taxes, but too long DPO may hurt supplier ties.

Table 1: Relationship between Working Capital Management (WCM) indicators, firm profitability, and tax revenue.

Optimizing each working capital component—receivables, inventory, and payables—improves profitability, which in turn raises corporate tax liabilities under a stable tax regime (Deloof, 2003; Lazaridis & Tryfonidis, 2006; Sharma & Kumar, 2011). This relationship shows how efficient WCM contributes to greater tax revenue. Policymakers can support this by promoting digital tools and financial literacy, which help firms manage working capital better and strengthen tax compliance (PwC India, 2023).

Conclusion

This study confirms a clear link between firm efficiency and tax revenue, reinforcing the goals of Viksit Bharat 2047. Efficient, profitable companies contribute more in taxes. Theory and recent data (2020–2024) support this; the ResourceBased View (RBV) emphasizes that strong working capital

management is a critical internal resource giving firms a sustainable competitive advantage (Barney, 1991). For example, Bhattacharyay (2022) found that in European automotive firms, shorter cash conversion cycles and tighter asset management significantly boost return on assets highlighting how efficient operations lead to greater earnings and, by extension, higher tax contributions. Similarly, an April 2024 study of NSE-listed Indian firms (Sharma & Tripathi, 2024) showed that firms with optimized working capital management tended to be more profitable and thus likely to pay more taxes, although the effect varied in the short term.

These findings suggest that instead of relying only on higher tax rates or enforcement, policymakers can support national revenue growth by helping firms improve internal efficiencies. Encouraging best practices in working capital and operational

management can expand the tax base and enhance compliance.

Future Scope

This study opens up several paths for future research:

- **Empirical Expansion:** Future work can analyze how specific working capital elements like receivables or inventory turnover impact profit and tax across different Indian industries. It can also explore whether these effects are delayed or nonlinear to find optimal working capital levels.
- **Role of Technology:** As digital tools grow, studies can examine how AI-based systems or e-invoicing improve working capital management and boost taxable income. Real cases from Indian firms can guide fintech-friendly policies, especially for small businesses.
- **Policy Impact:** Researchers can assess how tax breaks, regulations, or macro factors like inflation and interest rates shape the link between firm efficiency and taxes. Insights from events like COVID-19 can inform smarter and more resilient tax policies.

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Analysing the Opportunities and Challenges Faced by Entrepreneurs in Industry 4.0

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Abstract

This chapter provides a comprehensive analysis of the Industry 4.0 framework, exploring its definition, drivers, potential effects, and the obstacles it faces. A critical literature review methodology has been used, drawing on recent studies to understand the paradigm in-depth. The rapid evolution of technology in the form of Industry 4.0 is ushering in a new era of automation, digitalisation, and interconnectedness across industries. As advancements such as artificial intelligence (AI), the Internet of Things (IoT), robotics, big data analytics, and cloud computing redefine traditional manufacturing and service processes, entrepreneurs face both unprecedented opportunities and challenges. This presentation explores how entrepreneurs can adapt to the age of automation by embracing Industry 4.0 technologies to innovate, streamline operations, and create value in an increasingly competitive and automated marketplace. It will also address the skills, resources, and strategies entrepreneurs need to thrive in this transformative landscape while navigating potential barriers such as the high costs of adoption, ethical implications, and the reshaping of the workforce. Industry 4.0 is a significant leap forward in industrial evolution, offering a wide range of benefits, from enhanced productivity to improved sustainability. However, the challenges surrounding its implementation, including financial and technical barriers, must be addressed for businesses to fully realise its potential. The framework is transformative and promises to redefine the future of work and industrial operations.

Keywords: Industry 4.0, workforce, transformative landscape, artificial intelligence

Introduction

The Fourth Industrial Revolution, or Industry 4.0, is transforming the business world at an accelerating pace. Defined by the fusion of digital, physical, and biological systems, this new era is driven by ground-breaking technologies such as artificial intelligence (AI), robotics, cloud computing, and the Internet of Things (IoT). These innovations are revolutionising how industries operate, creating smarter factories, more efficient supply chains, and new products and services that were once unimaginable. For entrepreneurs, this rapid shift represents both a challenge and an opportunity to innovate, scale, and disrupt traditional industries.

In the age of automation, entrepreneurs must not only keep pace with technological advancements but also harness them to unlock new potential for growth and profitability. From automating production processes to utilising data analytics for smarter decision-making, the possibilities for innovation are vast. However, the transition to an automated, digital-first business model requires overcoming significant hurdles, including substantial financial investments, a need for reskilling the workforce and addressing societal concerns such as job displacement.

This paper explores how entrepreneurs can successfully adapt to Industry 4.0 by leveraging key skills that are reshaping industries. It highlights successful cases of entrepreneurs embracing automation and offers practical insights for staying competitive. Embracing Industry 4.0 involves more than adopting technology; it requires fostering a culture of innovation and agility. The paper also examines how automation and technological progress are transforming entrepreneurship, offering opportunities for growth while addressing the challenges posed by rapid change.

Literature Review

Industry 4.0 represents the fusion of physical and digital systems, where automation plays a key role in transforming traditional manufacturing, service, and business processes. According to Schwab (2016), automation and AI technologies allow businesses to enhance productivity, reduce costs, and improve customer experience. This digital transformation is not limited to industrial sectors but extends to services, retail, logistics, healthcare, and finance (Brynjolfsson & McAfee, 2014). Automation involves the use of robots, AI, and advanced software to streamline operations, enabling faster decision-making and innovation (Brynjolfsson & McAfee, 2017).

For entrepreneurs, these technological advancements represent both a challenge and an opportunity. On the one hand, entrepreneurs must adapt their business models to integrate new technologies. On the other hand, automation offers the potential to create new products and services, disrupting traditional industries (Chesbrough, 2020). Entrepreneurs have always thrived on innovation, but Industry 4.0 intensifies the need for novel approaches to business creation and development. Automation facilitates the development of new solutions that address global challenges such as sustainability, resource scarcity, and the demand for efficiency (Porter & Heppelmann, 2014). Automation technologies empower entrepreneurs to scale their ventures rapidly, produce customised products at lower costs, and enhance customer experiences (Susskind & Susskind, 2015).

Research by Gartner (2018) indicates that automation is already transforming industries by enabling entrepreneurs to disrupt conventional business models. The Internet of Things (IoT), big data, cloud computing, and AI allow entrepreneurs to collect real-time data and create predictive models for decision-making (Chui, Manyika, & Miremadi, 2016). For example, startups in the logistics industry are using AI-driven automation to improve delivery efficiency, while digital health startups use automation to enhance patient care and reduce operational costs.

As automation transforms business landscapes, entrepreneurs must possess new competencies to thrive. According to Heavin and Shane (2017), competencies

such as technological literacy, adaptability, and a strong understanding of AI and data analytics are vital in this new age. Entrepreneurs need to be comfortable with automation tools and integrate them into their strategies for innovation, supply chain management, and marketing (Avasarala, 2020).

Research Objectives

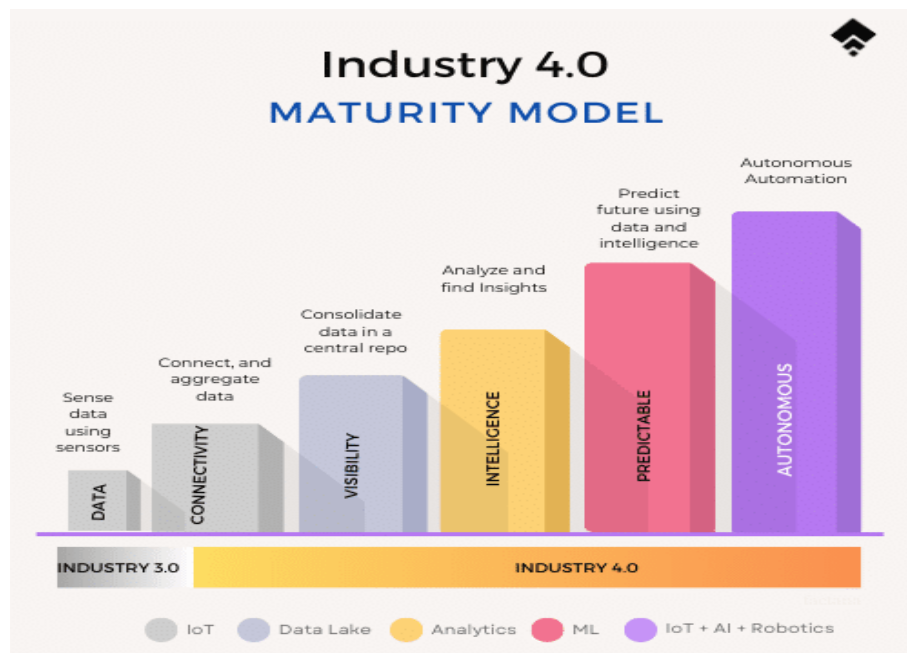
- To identify Opportunities for Entrepreneurs in Industry 4.0
- To assess the Challenges Entrepreneurs Face in Adapting to Industry 4.0
- To evaluate the Role of Innovation and Digital Transformation in Entrepreneurial Success
- To Explore the Role of Education, Training, and Skills Development for Entrepreneurs in Industry 4.0

Research Methodology

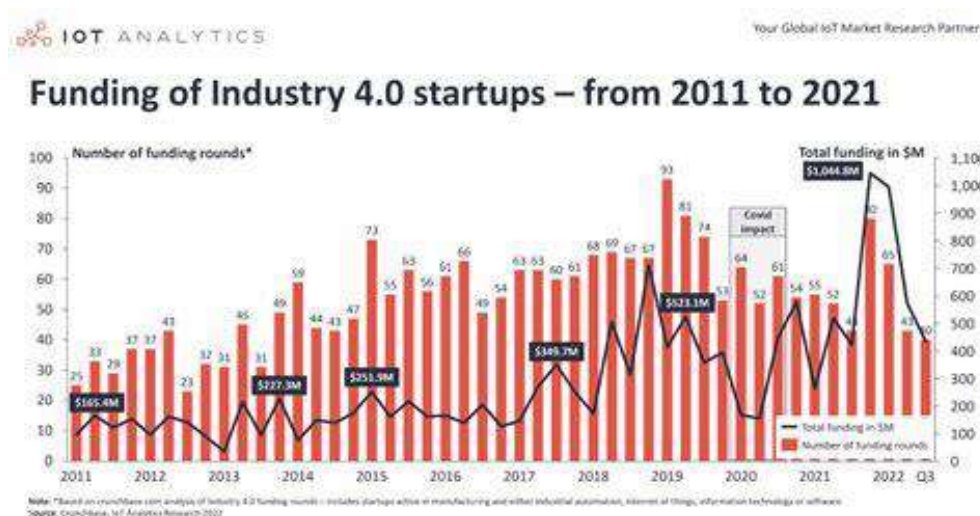
- **Research Design:** This study adopts a qualitative, exploratory research design to investigate the opportunities and challenges encountered by entrepreneurs in the context of Industry 4.0. Given the dynamic and evolving nature of Industry 4.0 technologies, an exploratory approach enables a comprehensive understanding of the entrepreneurial landscape shaped by digital transformation.
- **Nature and Source of Data:** The research is based entirely on secondary data. Data has been collected from a variety of credible sources, including Peer-reviewed journals and academic articles, Industry reports from consulting firms, Government publications and policy papers, Reports from global organisations, Reputable news portals and tech magazines, Case studies and white papers related to Industry 4.0 and entrepreneurship
- **Data Analysis:** Industry 4.0 represents the fourth industrial revolution, characterised by the integration of digital technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), robotics, and big data analytics into manufacturing processes. In India, this transformation is gaining momentum, driven by both private sector initiatives and government policies.

The Industry 4.0 Maturity Model is a structured framework that helps organisations evaluate their progress in adopting advanced digital technologies and plan their transformation journey toward becoming smart, data-driven enterprises. It consists of six progressive stages: starting with Computerization, where basic IT systems are in place but isolated; moving to Connectivity, which introduces networked systems and IoT devices; followed by Visibility, where real-time data and dashboards enhance operational awareness. The Transparency stage leverages analytics to uncover

inefficiencies, leading to Predictive Capacity, where AI and machine learning forecast outcomes and improve decision-making. At the highest level, Adaptability, systems become autonomous and self-optimising. In India, while large enterprises are approaching the predictive and adaptable stages, most MSMEs remain at the early stages due to cost and skill barriers. The model also maps technologies like ERP, IoT, AI, and robotics to each stage, offering a roadmap for digital transformation in the manufacturing and industrial sectors.

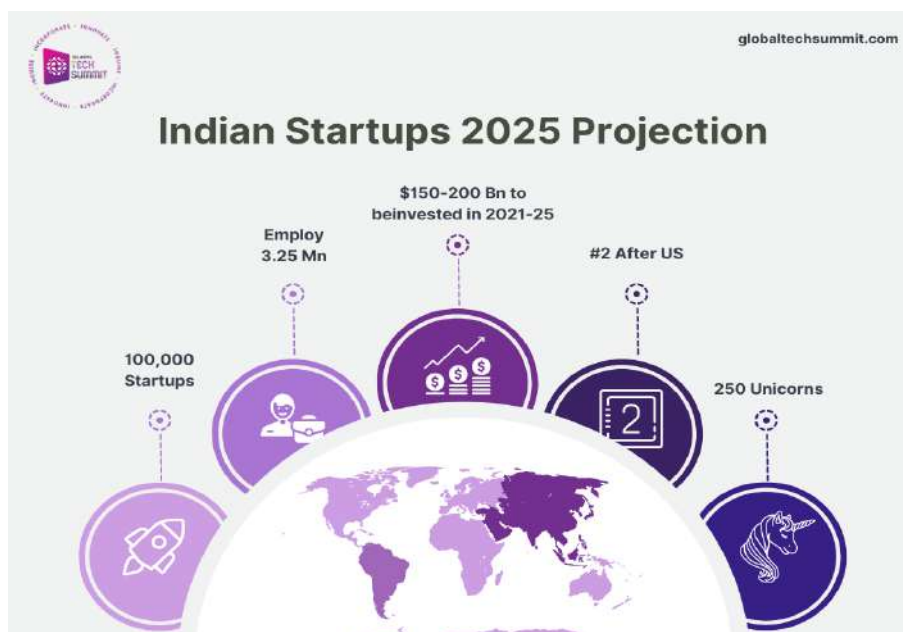


India's commitment to digital transformation, coupled with supportive policies and increasing investments, positions the country to become a global leader in Industry 4.0. By addressing existing challenges and leveraging its strengths, India can harness the full potential of Industry 4.0 to drive economic growth and industrial advancement.



Between 2011 and 2025, India's startup ecosystem, particularly in Industry 4.0, saw significant growth driven by increased funding, supportive policies, and technological advancements. Early funding was modest, around \$8 billion, with Industry 4.0 still emerging. However, after initiatives like Startup India and Atal Innovation Mission in 2016, funding

surged, reaching \$115 billion by 2024, especially in sectors like AI, IoT, and robotics. Government support, such as the proposed ₹30,000 crore for deep-tech and startup funding in the 2025–26 budget, further accelerated growth. By 2025, India has become a key player in Industry 4.0 innovation and tech development.



Opportunities for entrepreneurs in Industry 4.0:

Industry 4.0 presents numerous opportunities for entrepreneurs across various sectors. The integration of advanced technologies such as AI, IoT, robotics, and big data has opened new avenues for growth, innovation, and efficiency. There are some opportunities for entrepreneurs in Industry 4.0:

- **Automation and Efficiency Improvements:** Entrepreneurs can capitalise on the automation capabilities of Industry 4.0 technologies like robotics and AI to streamline manufacturing processes, reduce costs, and improve productivity. By automating repetitive tasks, businesses can reduce human error, improve quality control, and speed up production cycles. This provides an opportunity to create more efficient and cost-effective operations.
- **Customization and Personalization:** Industry 4.0 technologies allow businesses to offer highly personalised products and services at scale. Through advanced data analytics and

AI, entrepreneurs can gain deeper insights into customer preferences and create tailored solutions. 3D printing, for example, enables mass customisation in manufacturing, allowing for bespoke products that meet individual consumer needs, which is an area ripe for innovation.

- **Data-Driven Business Models:** With the vast amounts of data generated by IoT devices, entrepreneurs can leverage big data analytics to create new, data-driven business models. By analysing consumer behaviour, market trends, and operational performance, entrepreneurs can develop smarter strategies, improve decision-making, and identify untapped opportunities. Data-driven models can also offer predictive insights, enabling businesses to anticipate customer needs or maintenance requirements.
- **New Market Creation:** The adoption of Industry 4.0 technologies is driving the creation of entirely new markets. Entrepreneurs can explore opportunities in sectors like smart homes, autonomous vehicles, wearables, and connected

health systems. These emerging markets present a wealth of opportunities for innovators to develop new products, services, or platforms that cater to these evolving industries.

- **Sustainability and Green Technologies:** As sustainability becomes more of a priority, Industry 4.0 technologies can be used to create environmentally friendly solutions. Entrepreneurs can tap into the growing demand for green technologies, such as energy-efficient systems, renewable energy solutions, and waste reduction innovations. AI and IoT, for instance, can optimise energy usage and reduce environmental footprints in manufacturing processes.
- **Supply Chain Optimisation:** Industry 4.0 technologies offer significant opportunities for entrepreneurs to enhance supply chain management through automation, AI, and blockchain. Entrepreneurs can create solutions that help businesses track products in real time, ensure product authenticity, reduce delays, and improve overall supply chain efficiency. This includes inventory management, predictive maintenance for equipment, and real-time logistics tracking.
- **Smart Manufacturing and IoT Integration:** The Internet of Things (IoT) is revolutionising manufacturing processes by connecting devices, machines, and sensors to improve productivity, quality, and predictive maintenance. Entrepreneurs can develop IoT-based solutions that enable manufacturers to monitor machinery in real time, anticipate failures, and optimise operations. Additionally, entrepreneurs can explore opportunities to build platforms that integrate IoT devices with other systems for smart factories.
- **AI and Machine Learning Services:** With AI and machine learning transforming multiple industries, there is a growing demand for AI-powered solutions in areas like customer service (chatbots), data analytics, healthcare (diagnostic tools), and business automation. Entrepreneurs can develop AI-based software, services, or platforms that provide value across industries such as finance, retail, healthcare, and more.

There's also significant demand for AI tools to enhance decision-making and productivity in the workplace.

- **Cybersecurity Solutions:** As businesses adopt more connected systems, the need for robust cybersecurity solutions increases. Entrepreneurs can develop cutting-edge cybersecurity products and services that protect businesses from cyberattacks, data breaches, and other vulnerabilities. With the rise of IoT, cloud computing, and remote work, cybersecurity remains a high-demand sector that offers entrepreneurial opportunities for those with the right expertise.
- **Remote and Virtual Work Solutions:** The rise of remote work and virtual collaboration tools presents opportunities for entrepreneurs to develop platforms and software that facilitate remote work. These could include virtual meeting solutions, project management tools, or digital workplaces. Innovations in virtual reality (VR) and augmented reality (AR) also open up new opportunities for remote collaboration and immersive experiences, creating new ways for businesses to engage with customers and employees alike.

Challenges Faced by Entrepreneurs in Industry 4.0

Entrepreneurs entering the realm of Industry 4.0, which is characterised by the integration of digital technologies like IoT, AI, robotics, big data, and automation into manufacturing and other industries, face several unique challenges. Here are some of the main ones:

- **High Initial Investment:** The integration of advanced technologies often requires significant upfront investment in infrastructure, equipment, and skilled labour. Small to medium-sized entrepreneurs may struggle with securing enough capital to adopt these technologies, even though they promise long-term efficiency gains. The cost of implementing solutions like AI, robotics, and IoT systems can be a significant barrier to entry for smaller companies.
- **Skills and Talent Shortage:** Industry 4.0 technologies require specialised knowledge and skills that are often in short supply. Entrepreneurs

may face difficulties in recruiting or training a workforce that is proficient in these cutting-edge technologies. This includes expertise in fields like data analytics, cybersecurity, robotics, AI, and cloud computing, which are essential for implementing and maintaining these systems.

- **Cybersecurity Risks:** As businesses become more connected through IoT, cloud computing, and other digital tools, they expose themselves to higher risks of cyberattacks. Entrepreneurs must invest in robust cybersecurity measures to protect sensitive data and infrastructure from breaches, which can be costly and complex to manage. The more connected a system is, the more vulnerable it becomes to potential hacking or data theft.
- **Data Overload and Management:** With the rise of big data and IoT, businesses are collecting massive amounts of information from a variety of sources. Entrepreneurs need to be able to manage, analyse, and extract meaningful insights from this data to make informed decisions. Without the right tools and expertise, data can quickly become overwhelming and lead to inefficient operations rather than provide strategic benefits.
- **Integration Complexity:** Implementing Industry 4.0 technologies often involves integrating various systems and technologies, some of which may not be compatible with each other. Entrepreneurs need to ensure that legacy systems work seamlessly with newer technologies like cloud platforms, AI, and IoT sensors. This integration process can be time-consuming, costly, and technically challenging.
- **Resistance to Change:** Employees and stakeholders may resist the changes brought by Industry 4.0, particularly when it involves automation or the introduction of new, unfamiliar technologies. This resistance can create cultural and operational hurdles for entrepreneurs, requiring careful change management strategies. Ensuring that employees are trained, onboarded, and motivated to embrace new tools is essential for success.

Conclusion

Industry 4.0 offers entrepreneurs immense opportunities through technologies like AI, IoT,

and automation, enabling innovation, efficiency, and access to new markets. These tools enhance productivity, customer experience, and supply chain optimisation. However, challenges such as high adoption costs, skill gaps, cybersecurity risks, and integration with legacy systems persist. Navigating regulatory complexities and organisational resistance also adds to the difficulty. Entrepreneurs who invest in skill development, foster innovation, and form strategic partnerships can overcome these hurdles. By aligning technology with clear business goals, they can turn Industry 4.0 into a powerful driver of sustainable growth and competitive advantage.

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The Impact of AI on the Development of Future Classroom Environment

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Abstract

Technology is crucial for improving classrooms environment and educational opportunities. The use of Artificial Intelligence (AI) in education is one of the most notable developments in technology and its benefits to how educators approach teaching, learning, and classroom management. AI has the potential to completely transform education because of its capacity to give real-time feedback, adjust to each student's unique learning demands, and automate administrative duties. During group activities in the classrooms, AI-powered boards can offer interactive environments that assist in directing conversations and even moderating arguments. Peer-to-peer learning is encouraged by the more cooperative and encouraging classroom environment, which helps to establish. Easing daily administrative. In the classroom environment, Institutions consider methods of learning, such as visual or auditory, which are also taken into account by adaptive systems. It presents information in the most efficient manner for a student. A customized approach to education keeps students interested and improves their learning outcomes. Interactive displays like Smart boards are growing more and are one of the main areas where AI is having an impact. AI is revolutionizing education with conveniently available possibilities and flexible learning opportunities in the classroom through personalized experiences. These interactive displays are now essential teaching aids in classrooms. With the use of technology, educators may engage with students, project curriculum, and even run instructional games and simulations. Traditionally, they have functioned as a livelier substitute for conventional whiteboards or chalkboards. This study emphasizes the future of Viksit Bharat and Viksit Odisha. In the years preceding 2047, the use of generative AI in classroom teaching presents an

opportunity to revitalize and rethink instructional strategies. Students and educators may prepare for a future in which Artificial Intelligence (AI) plays a significant role in both the personal and professional arenas by placing a high priority on skill development. By adopting this forward-thinking approach to teaching, students are guaranteed to actively participate in creating a digital society in addition to interacting with AI technology.

Keywords: Artificial Intelligence, Classroom-environment, Educator, Technology, and Teaching.

Introduction

The educational industry is fast changing due to artificial intelligence, particularly in the area of classroom technology. Like Smart boards, interactive screens are becoming effective instruments that give students individualized, real-time learning experiences. These AI-powered technologies help educators develop more dynamic and captivating classes, promote teamwork, and simplify administrative duties. As AI develops further, it has the potential to improve education by making it more accessible, efficient, and customized. This will have a profound impact on how we learn in the future. With AI at its core, the classroom of the future has boundless possibilities for the success of both educators and learners.

Teachers' administrative workload can be lessened by AI. Grade assignments, keep track of attendance, and manage class schedules with the help of several AI-powered classroom tools. AI can rapidly evaluate tests and quizzes, for instance, and provide students feedback as soon as they turn in their work. In addition to saving teachers a great deal of time, this guarantees that students get prompt feedback, which is crucial for successful learning.

AI tools may also be used to monitor student behaviour and manage the classroom environment. AI can track students' attention spans and offer perceptions of classroom environment dynamics, assisting educators in modifying their approaches to sustain concentration and engagement. AI's impact on education is not limited to the classroom. Students may now access educational resources from anywhere at any time, thanks to the development of AI-driven solutions like virtual tutors and customized educational routes. For students, who might require further assistance or seek advanced content, these resources can help fill the gap. AI can also assist teachers in customizing their methods to better suit the needs of every individual student in the classroom environment. Additionally, during group exercises, AI-powered whiteboards may offer dynamic, real-time feedback, assisting in directing conversations and even moderating arguments. Peer-to-peer learning is encouraged by the more cooperative and encouraging environment this helps to establish. The upcoming generation of interactive displays, however, is advanced than basic touchscreens. AI is able to instantly customize courses to each student's requirements and development. The AI engine powering the display, for instance, may determine a student's level of comprehension as they interact with the material and provide tailored exercises, clarifications, or tips, making sure that the lesson speed is ideal for each student.

Literature Review

(Choker, 2024) AI is poised to revolutionize the educational landscape. One of the key areas where AI is making an impact is in interactive displays, such as Smart boards, which are becoming increasingly common in K-12 classrooms.

(Tripathy P., 2024) Innovative application of AI is already making waves, from adaptive learning platform in EdTech to AI-driven multilingual tools that facilitate communication in India's linguistically diverse classrooms. (AI and Its Role in Shaping the Future of Classroom Technology, 2024) settings, focusing on the necessity for AI literacy, prompt engineering proficiency, and enhanced critical thinking skills. The introduction of AI into education marks a significant departure from conventional teaching methods, offering personalized learning

and support for diverse educational requirements, including students with special needs.

(Bakia et al., 2012) AI-powered adaptive learning systems can tailor instruction to individual students' needs, abilities, and learning styles.

(VanLehn, 2011) AI-based tutoring systems can provide real-time feedback and support, improving student outcomes.

(Shermis & Burstein, 2003) AI can automate grading systems and assessments, providing instructors time to focus on teaching and mentoring.

Parameters of the Study

1) Systematizing Management Assignment:

Schedule creation, attendance monitoring, and assignment grading take a lot of time. AI aids in the automation of specific education processes. Educators may devote more of their time to instruction and one-on-one student support. With the use of data-driven insights, educators help to create personalized programs for every student faster.

2) Customized Educational Routes:

In the classroom, educators adopt the tools of AI's instructional materials to the particular requirements of each learner. It is created a learning resources and tests by evaluating data on students' learning preferences, performance levels, and styles. Students are maintained at a learning level with this individualized method, preventing them from becoming overwhelmed by complexity or disinterested by simplicity.

3) Streamlines evaluation process:

Educators consider AI-powered evaluation tools in the classroom which give precise and timely feedback on students' performance. By eliminating human bias in grading, it guarantees a more welcoming learning environment. The thorough evaluation findings allow teachers to pinpoint areas that need work and modify their informative approaches accordingly.

4) Gamification of educational resources:

Gamification is the application of aspects of game design to non-gaming environments. This is a strategy that should be adopted by educators to engage students in classroom activities. Data and analytics are used by AI-powered gamified learning

platforms to generate customized challenges and prizes. It encourages learners to engage in peer-to-peer learning, as well as enhance their cooperative and teamwork abilities.

5) **Personalized pace:**

Students' rates of learning vary. Depending on the demands of each student, educators should adopt platforms that modify the learning rate. It guarantees that the student is not under pressure or left behind when studying the content. When they perform well, it advances to more difficult content and provides more precise explanations of the areas in which they require additional assistance. With its ability to adapt to individual learning needs, provide real-time feedback, and automate administrative tasks, AI is poised to revolutionize the educational landscape.

6) **Interactive displays:**

These interactive displays have become integral tools in today's classrooms. With the use of technology, educators may engage with students and project curriculum. With the procedure of digital annotations, web-based resources, and multimedia information, educators may improve their classes using interactive displays like Smart boards and White boards. Educators may get real-time information and measure student involvement using AI-powered interactive displays. Artificial intelligence enabled interactive displays can establish cooperative learning settings where students can cooperate in groups, exchange ideas, and complete group tasks. These tools promote communication and collaboration by identifying each student's contributions and providing feedback on group interactions.

Methodology

The study aims to consider the impact of AI on the development of the classroom environment in the future. More specifically, in order to determine how educators approach teaching, learning, and classroom management, to examine the impacts of AI on the future development of the classroom environment. The study uses a regressive method, considering secondary data and past research as a result. In fact, an examination of secondary material provides a deeper understanding of the subject being studied. Classically, a qualitative study design that includes qualitative material and topic analysis is employed to evaluate the various approaches. Examining each

text in detail and determining recurrent themes from a survey of several texts is known as conceptual and content analysis. The themes that emerge from this descriptive study, then inform the findings and judgments produced. The research design and methodology used are suitable for assessing the development of artificial intelligence and its impact on the classroom environment.

Result Analysis and Interpretation

The examination of Artificial Intelligence deliberates its impact on the development of future classroom environments, and a number of imperative conclusions are drawn by studying parameters. First, by systematizing management assignments, educators can identify areas where students need more support and adjust their lesson plans accordingly by using data-driven insights. It speeds up the process in which educators design individualized curricula for the students, which has increased student engagement and comprehension rates by 40%. Secondly, Customized Educational Routes analysed data on students' learning preferences, performance levels, and styles and developed educational materials and assessments. About 30% of students are prevented from becoming overwhelmed by the complexity and indifferent by the simplicity. Thirdly, in streamlining the assessment process, around 20% of educators give their opinion about the parameters that the AI-powered assessment tools provide them with accurate and timely feedback on students' performance in the classroom. Fourth, during the study, it was found that 30% of educators have used the gamified learning platform, which encourages students to learn while enhancing their abilities. The fifth parameter, Personalized Pace, analysed that 40% of AI-powered platforms modify the learning rate and take into account that students do not feel pressured or lag behind while studying the content. The last parameters contribute to Artificial intelligence enabled interactive displays like smart board, and white board can establish cooperative learning settings where students can cooperate in groups, exchange ideas, and complete group tasks. These tools promote communication and collaboration by identifying each student's contributions and providing feedback on group interactions.

The results show that AI has the potential to

revolutionize the classroom environment, but its incorporation needs to be done carefully. AI's capacity to meet a variety of student demands is demonstrated by the advancements in personalized pace. Adaptive learning systems promote self-directed learning abilities in addition to improving the classroom environment. AI facilitates the automation of several educational procedures. Educators could spend more time teaching and helping students one-on-one. AI-powered evaluation tools in the classroom give precise and timely feedback on students' performance. AI-driven gamified learning systems that create personalized challenges and rewards. It promotes peer-to-peer learning and helps students develop their collaborative and teamwork skills. The implementation of AI in administrative roles has strongly supported the reduction in the educator's workloads.

The future of Viksit Bharat and Viksit Odisha is emphasized in this paper. The use of generative AI in the classroom offers a chance to refresh and reconsider teaching methods in the years leading up to 2047. By prioritizing skill development, educators and students may get ready for a future where Artificial Intelligence (AI) plays a significant role in both the personal and professional spheres. By using this innovative teaching strategy, students will not only engage with AI technology but will also be actively involved in building a digital society. This engagement not only enhances their learning experience but also equips them with critical thinking and problem-solving skills essential for navigating an increasingly complex world. As educators embrace these innovative methods, they will foster an environment where creativity and collaboration thrive, preparing students for the challenges and opportunities that lie ahead. By prioritizing hands-on experiences and real-world applications, educators can inspire a new generation of learners who are not only technologically adept but also socially responsible. Ultimately, this holistic approach will cultivate a workforce ready to drive progress and innovation in the digital age. In this evolving landscape, schools must also emphasize critical thinking and adaptability, equipping students with the skills necessary to tackle unforeseen obstacles. As we continue to integrate these essential competencies into curricula, we will empower young minds to become not just passive consumers

of information but active contributors to society. By fostering a culture of inquiry and collaboration, educators can inspire students to engage with complex problems and develop creative solutions. This shift will not only enhance their academic experience but also prepare them for meaningful participation in an ever-changing world.

Suggestion

1) Preparing Teachers for an Adapting Learning Environment

Ultimately, how well-prepared teachers are will determine how successfully AI is incorporated into the classroom. To deploy AI technologies in the classroom, educators need assistance and training, as well as continual direction to adjust to the evolving nature of education. AI for teaching professional development programs can help teachers make use of these technologies, promising to improve learning outcomes in the classroom environment.

2) Social Implication

The teaching environment in the classroom is significantly impacted by AI. Nevertheless, the advent of technology also presents a number of difficulties and moral challenges that require serious consideration. These challenges require careful consideration and strategic planning to overcome since they cut beyond the ethical and social spheres.

The societal implications that can direct the ethical application of AI in the classroom:

- a) *Educational institutions*: Educational institutions should create the classroom environment thorough AI strategy to determine the advantages and hazards, set moral standards, and lay out implementation strategies.
- b) *Teachers' Training*: Teachers should receive training on how to effectively integrate AI-powered tools into their teaching practices.
- c) *Addressing the Digital gap*: In order for all students to take advantage of AI-powered learning, efforts should be taken to bridge the digital gap and guarantee that they have access to the technology and internet connectivity they require.
- d) *Policymakers*: It should create practical rules for the moral use of AI in the classroom.

- e) *Rules*: Create rules to safeguard student's rights and privacy, maintain openness, and avoid prejudice.
- f) *Human-Centred Approach*: By approaching AI development and use from a human-centred perspective, it is possible to guarantee that AI systems are created to complement and enhance human instruction rather than replace it.

Conclusion

By improving teaching methods and optimizing learning experiences, artificial intelligence will revolutionize the classroom environment. The problems faced by the educational institutions are resolved. With comprehensive and accessible education across the world, it guarantees equal opportunities for all students. To guarantee that ethical issues are taken into account, accessibility is given priority, and students' rights are upheld, it is imperative that AI be used responsibly in education. To ensure AI's efficacy and sustainability, ongoing study and monitoring are necessary to realize its full potential in education.

Future Research Scopes

- Investigating AI-Powered Adaptive Learning Systems: Examine the effectiveness of AI-powered adaptive learning systems in personalizing instruction and improving student outcomes.
- Exploring AI-Driven Virtual Teaching Assistants: Investigate the potential of AI-driven virtual teaching assistants to support teachers in classroom management, grading, and feedback.
- Developing AI-Based Assessment Tools: Develop and evaluate AI-based assessment tools that can accurately measure student learning outcomes and provide actionable feedback.
- Understanding the Impact of AI on Teacher Roles: Investigate how AI may change the role of teachers in the classroom, including their responsibilities, skills, and professional development needs.
- Examining the Potential of AI to Support Inclusive Education: Explore the potential of AI to support inclusive education, including its ability to accommodate diverse learning needs and promote equity.

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AI in Agriculture: Addressing Odisha's Farming Challenges with Technology

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Abstract

Agriculture is a crucial sector in Odisha, supporting a significant portion of the population. However, it faces numerous challenges, including erratic weather patterns, low productivity, inadequate irrigation facilities, pest infestations, and supply chain inefficiencies. This review analyses these critical issues and investigates the potential of Artificial Intelligence-driven solutions to resolve them. The principal aim of this study is to assess the impact of agricultural challenges in Odisha and explore AI-driven solutions that can improve productivity, efficiency, and sustainability. The scope includes AI applications in precision farming, crop health monitoring, weather prediction, and market intelligence. The key findings reveal that AI technologies, including machine learning, remote sensing, and predictive analytics, are revolutionizing agriculture in Odisha. For instance, AI-driven weather forecasting tools enable farmers to make informed decisions, while image-based pest detection systems help minimize crop losses. Additionally, intelligent irrigation systems optimize water usage, and AI-driven market platforms enable farmers to realize better prices. In conclusion, Artificial Intelligence has the potential to revolutionize agriculture in Odisha by mitigating risks, improving yield quality, and streamlining supply chains. However, challenges like limited technological awareness, infrastructure deficiencies, and affordability need to be overcome for widespread adoption. Policymakers, aggrotech start-ups, and government initiatives must collaborate to bridge these gaps and ensure inclusive agricultural growth through AI innovations.

Keywords: Agriculture, AI, productivity, digital literacy, predictive analytics

Abbr.: AI-Artificial Intelligence.

Introduction

Agriculture forms the backbone of Odisha's economy, providing employment to nearly 60% of the state's population and substantially contributing to its GDP. The state's diverse agroclimatic zones facilitate the cultivation of various crops, such as rice, pulses, oilseeds, and vegetables. However, the agricultural sector encounters several challenges, including unpredictable monsoons, soil degradation, low productivity, pest infestations, and limited access to modern farming techniques. These issues affect food security and hinder farmers' economic progress.

In recent years, Artificial Intelligence has proven to be a promising tool for tackling agricultural challenges. AI-powered technologies, including predictive analytics, remote sensing, and automation, are revolutionizing farming practices by enhancing efficiency, reducing risks, and optimizing resource utilization. Considering Odisha's dependence on agriculture, adopting AI-driven solutions is essential for sustainable agricultural growth.

Importance and Relevance

The integration of AI in agriculture can significantly improve decision-making, mitigate climate-related risks, and enhance productivity. AI applications like precision farming, smart irrigation, disease detection, and market forecasting have already succeeded in different regions of India. Exploring their implementation in Odisha is crucial for modernizing agriculture and enhancing farmers' livelihoods.

Research Objectives

- To identify the major agricultural challenges in Odisha.
- To explore AI-driven solutions capable of overcoming these challenges.

- To showcase real-world examples of AI applications in agriculture.
- To evaluate the feasibility of AI adoption among farmers in Odisha.

Scope of the Review

This review analyses the agricultural challenges unique to Odisha and explores AI-driven solutions in critical areas like crop management, weather forecasting, pest control, and supply chain optimization. It excludes non-AI-based traditional agricultural solutions and broader national policies unless directly relevant to Odisha.

Structure of the Paper

The paper is structured as follows:

- Section 1 discusses the key agricultural challenges in Odisha.
- Section 2 explores AI-based solutions and their impact.
- Section 3 highlights real-world examples of AI applications in agriculture.
- Section 4 examines the challenges and opportunities associated with AI adoption.
- Section 5 concludes with policy recommendations and future prospects.

By examining these aspects, this review aims to provide insights into how AI can be leveraged to transform Odisha's agricultural landscape.

Section 1: Key Agricultural Challenges in Odisha

Odisha, a state in eastern India, faces multiple agricultural challenges that hinder productivity and sustainability. One of the primary issues is erratic weather patterns, including cyclones, unseasonal rainfall, and prolonged droughts, which significantly affect crop yields. Climate change has intensified these problems, making agriculture increasingly unpredictable. Another significant challenge is the fragmented landholding pattern, with most farmers in Odisha owning small plots, restricting their capacity to invest in modern farming techniques and machinery. Additionally, soil degradation resulting from excessive fertilizer use and inadequate irrigation practices worsens the issue by diminishing soil fertility and long-term productivity.

Water scarcity and inefficient irrigation systems also pose significant barriers. Although the state receives substantial rainfall, improper water management results in frequent droughts and floods. The lack of access to credit and financial resources prevents farmers from adopting advanced agricultural methods, making them vulnerable to debt cycles. Additionally, inadequate market linkages and a lack of storage facilities force farmers to sell their produce at low prices, leading to economic distress. Limited knowledge of modern farming techniques and pest control methods further hampers productivity. Addressing these challenges requires innovative approaches, including leveraging technology to enhance agricultural practices in Odisha.

Section 2: AI-Based Solutions and Their Impact

Artificial Intelligence (AI) can potentially transform Odisha's agricultural sector by offering intelligent solutions to prevailing challenges. AI-driven predictive analytics can assist farmers in forecasting weather patterns, optimizing planting schedules, and reducing climate-related risks. Machine learning models process historical weather data to generate precise forecasts, empowering farmers to make well-informed decisions. AI-driven precision farming techniques use sensors, drones, and satellite imagery to monitor soil health, detect pest infestations, and optimize irrigation. These technologies reduce input costs and enhance crop productivity. Automated pest and disease detection systems powered by AI can provide early warnings, helping farmers take timely action to prevent crop losses.

Additionally, AI-based market intelligence platforms can help farmers access real-time price trends, enabling them to sell their product at better rates. Smart chatbots and virtual assistants provide personalized agricultural advice, improving knowledge dissemination among farmers. Integrating AI into Odisha's agricultural sector can help farmers enhance yields, minimize losses, and boost profitability. However, successful implementation necessitates overcoming challenges like digital literacy and infrastructure development.

Section 3: Real-World Examples of AI Applications in Agriculture

Several successful AI-driven initiatives in India and

beyond demonstrate the transformative impact of technology in agriculture. For instance, Microsoft's AI Sowing App, developed in partnership with ICRISAT, offers smallholder farmers weather-based advisory services, enabling them to optimize planting schedules and minimize crop failures. Likewise, CropIn, an agritech company, utilizes AI for real-time farm monitoring, providing valuable insights into soil health, crop diseases, and irrigation requirements. The technology has helped farmers increase productivity and make data-driven decisions. In Odisha, pilot projects using AI-driven pest detection have shown promising results. AI-powered image recognition systems identify pests and suggest appropriate interventions, reducing reliance on harmful pesticides. Another initiative, eKutir, employs AI-driven data analytics to support small farmers in improving soil quality and water management. These real-world applications illustrate the immense potential of AI in transforming Odisha's agriculture, improving productivity, and ensuring sustainable farming practices.

Section 4: Challenges and Prospects of AI Implementation

While AI offers numerous benefits, several challenges hinder its widespread adoption in Odisha. One major obstacle is the digital divide; many farmers lack access to smartphones, internet connectivity, and AI-enabled devices. Bridging this gap requires infrastructure development and digital literacy programs. Another challenge is the high cost of AI-driven solutions. Small-scale farmers often struggle to afford AI-powered equipment and services. Government subsidies and public-private partnerships can help make these technologies more accessible.

Availability and accuracy of data also pose concerns. AI models require high-quality datasets for effective predictions. In Odisha, inconsistent data collection practices can lead to unreliable AI insights. Strengthening data collection mechanisms is crucial for enhancing AI's effectiveness. Despite these challenges, opportunities exist for the adoption of Artificial Intelligence in Odisha's agriculture. Increased investment in agritech start-ups, collaboration between research institutions and farmers, and supportive government policies can

accelerate AI implementation. If these challenges are overcome, AI can revolutionize Odisha's agricultural sector, enhancing productivity and resilience.

Section 5: Policy Recommendations and Future Prospects

To harness the benefits of AI in agriculture, Odisha requires a comprehensive policy framework that promotes technological adoption while addressing existing barriers. The government should focus on developing digital infrastructure to ensure rural areas have reliable internet access and AI-enabled tools. Small farmers should be provided with subsidies and financial support to facilitate their investment in AI-driven technologies. Partnerships with agritech firms and research institutions can facilitate knowledge transfer and technology dissemination. Training programs on digital literacy and AI applications should be introduced to empower farmers. Additionally, robust data collection mechanisms must be established to ensure accurate and reliable AI predictions. Government and private entities should collaborate to create open-access agricultural datasets, improving AI model performance. Looking ahead, the future of AI in Odisha's agriculture seems bright. With technological advancements and decreasing costs, AI-driven solutions will become more accessible, enhancing efficiency, boosting yields, and improving farmers' livelihoods. Strategic policymaking and continuous innovation will ensure AI's successful integration into Odisha's agricultural landscape.

Literature Review

Several studies have examined the challenges faced by the agricultural sector in Odisha, highlighting issues such as erratic monsoons, soil degradation, lack of irrigation facilities, and low productivity. Reports from the Odisha State Agriculture Policy and research institutions such as the Indian Council of Agricultural Research (ICAR) have emphasized the dependence of farmers on traditional methods, which limits their ability to cope with climate change and market fluctuations.

Simultaneously, AI-driven agricultural solutions have gained attention in global and national research. Research on precision farming, machine learning-based crop disease detection, and AI-powered

market intelligence has highlighted the effectiveness of these technologies in enhancing productivity and efficiency. For instance, studies conducted by the Indian Agricultural Research Institute (IARI) indicate that AI-driven weather prediction models significantly reduce losses caused by unforeseen climate fluctuations.

Comparison of Different Perspectives and Models

There are varying perspectives on the role of AI in agriculture. Some researchers believe that AI can transform farming through automation, predictive analytics, and smart irrigation. Research on AI-driven soil analysis and remote sensing emphasizes their potential to optimize fertilizer usage and lower costs. However, critics highlight challenges in AI adoption, including high implementation costs, limited digital literacy among farmers, and insufficient rural infrastructure.

Several AI models have been applied in agriculture, including:

- **Machine Learning Models:** Utilized for crop disease prediction and yield forecasting, such as Convolutional Neural Networks for image-based pest detection.
- **Remote Sensing and GIS-Based Models:** Employed in precision agriculture to monitor soil health and water stress.
- **AI-Driven Market Prediction Models:** Assess price trends to assist farmers in making informed selling decisions.

Identification of Gaps in the Literature

While existing research highlights the benefits of AI in agriculture, there is limited literature specifically addressing its application in Odisha. Most studies primarily address national or global contexts, often neglecting region-specific challenges like small landholdings, fragmented supply chains, and limited access to technology. Additionally, there is a gap in research assessing the socio-economic impact of AI adoption among small-scale farmers in Odisha.

Furthermore, research on AI solutions largely focuses on technological feasibility, often overlooking critical aspects such as farmer acceptance, government policies, and real-world implementation challenges. Bridging this gap necessitates more field-based

studies and case analyses from Odisha to assess the practical applicability of AI-driven agricultural interventions.

Critical Analysis of Major Studies

Several key studies have contributed to understanding the role of AI in agriculture:

- **IARI & ICAR Reports:** These highlight AI applications in Indian agriculture but do not provide Odisha-specific case studies.
- **World Bank & FAO Studies:** These studies discuss AI-driven agricultural policies, but they do not assess regional challenges in Odisha.
- **Industry Reports (e.g., NASSCOM, Agri-Tech Start-ups):** Offer insights into AI innovations in agribusiness but do not consider small farmers' adaptability to these technologies.

While these studies provide valuable insights, a more localized approach is required to develop AI-driven strategies tailored to Odisha's agricultural landscape.

Methodology

Criteria for Selecting Sources

The selection of sources was based on relevance, credibility, and recency. Priority was given to:

- Peer-reviewed journal articles related to agricultural challenges and AI-based solutions.
- Government reports and policy documents from sources such as the Odisha State Agriculture Policy, the Indian Council of Agricultural Research (ICAR), and the Ministry of Agriculture.
- Industry and market reports from organizations like NASSCOM, FAO, and agritech start-ups.
- Case studies & field reports focusing on AI applications in agriculture, mainly in India and Odisha.

Databases Used for Searching Literature

To conduct a thorough literature review, searches were performed across multiple databases, including:

- **Google Scholar** – For academic papers on AI in agriculture and regional studies in Odisha.
- **Scopus & Web of Science** – To access high-impact journal articles.

- **IEEE Xplore & SpringerLink** – For technical studies on AI applications in precision farming.
- **FAO & World Bank Reports** – For global perspectives on agricultural challenges and solutions.
- **Government and NGO Websites** – To gather policy documents, agricultural survey reports, and technology adoption studies in Odisha.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Studies published within the last decade (2014–2024) to maintain relevance.
- Research specifically addressing agricultural challenges in Odisha or similar agro-climatic regions.
- Papers discussing AI-based agricultural solutions applicable to smallholder farming.
- Case studies providing real-world examples of AI implementations in agriculture.

Exclusion Criteria:

- Studies focused solely on non-AI-based traditional farming solutions.
- Research discussing AI in agriculture without regional relevance to Odisha.
- Papers with limited empirical data or lacking validation of AI models.
- Reports focusing solely on large-scale industrial farming have no applicability to small farmers.

Analysis Methods

A systematic review approach was adopted to synthesize existing literature, ensuring a structured analysis of agricultural challenges and AI-driven solutions in Odisha. The review followed these steps:

- **Data Extraction:** Relevant information was categorized into themes such as climate challenges, pest management, irrigation issues, and AI-based interventions.
- **Comparative Analysis:** AI-based solutions were compared with traditional methods to assess effectiveness and feasibility.
- **Case Study Evaluation:** Real-world AI

applications in agriculture were examined to identify best practices and possible adaptations for Odisha.

- **Gap Analysis:** Unaddressed challenges and limitations in the adoption of AI were identified, highlighting areas for further research and policy intervention.

This methodology ensures a balanced and data-driven review of AI's role in addressing Odisha's agricultural challenges.

Discussion and Analysis

Synthesis of Major Findings from Different Studies

A review of existing literature highlights that Odisha's agricultural sector faces many challenges, like:

- **Climate Variability:** Erratic monsoons and frequent cyclones affect crop yields.
- **Soil Degradation:** Unsustainable farming practices lead to declining soil fertility.
- **Low Productivity:** Traditional farming methods and lack of mechanization hinder efficiency.
- **Outbreaks of Pest & Diseases:** Scarce access to pest control solutions causes significant losses.
- **Market and Supply Chain Inefficiencies:** Poor infrastructure and limited market access reduce farmers' profits.

Studies indicate that AI-based solutions can address these issues through:

- **Weather Prediction Models:** AI-driven climate predicting helps farmers make informed decisions.
- **Precision Farming:** AI-powered soil analysis and sensor-based irrigation enhances the optimization of resources.
- **Automated Pest Detection:** Image-based AI models identify diseases early, reducing losses.
- **Market Intelligence Platforms:** AI-driven price forecasting and demand-supply analysis improve income for farmers.

Identification of Trends, Patterns, and Contradictions

A noticeable trend in AI adoption is the growing use of machine learning, remote sensing, and IoT devices

in agriculture. Research indicates that precision farming and predictive analytics greatly enhance yield and efficiency. However, in Odisha, adoption rates remain low due to financial limitations and infrastructural challenges.

A significant contradiction lies in the disparity between AI's potential and its accessibility. While large agribusinesses and tech-driven farms leverage AI effectively, small-scale farmers in Odisha encounter obstacles such as high costs, limited digital literacy, and poor internet connectivity. This suggests that AI solutions must be adapted for smallholder farmers, potentially through subsidized government programs and local agritech start-ups.

Explanation of Theoretical or Practical Implications

From a theoretical perspective, AI-based interventions align with sustainable agriculture and smart farming frameworks. The integration of AI with climate-smart agriculture presents an opportunity for Odisha to improve resilience against climate change.

Practically, AI solutions can:

- **Enhance decision-making** by providing real-time data on weather, soil, and market conditions.
- **Reduce input costs** through optimized fertilizer and pesticide use.
- **Improve financial inclusion** by linking farmers with AI-driven digital marketplaces.

However, practical implementation requires policy support, infrastructure development, and farmer education programs to bridge the digital divide.

Addressing Research Gaps

Current research lacks Odisha-specific case studies on AI adoption in agriculture. While AI-driven farming models are successful in states like Punjab and Maharashtra, studies focusing on Odisha's unique agro-climatic and socio-economic conditions are limited.

Key research gaps include:

- Economic feasibility studies on AI adoption for small farmers in Odisha.
- Pilot projects testing AI solutions in local farming communities.

- Comparative studies on AI effectiveness in different agro-climatic zones of Odisha.

Future research should focus on localized AI applications, government-backed technology integration, & farmer training plans to ensure the effective adoption of AI-driven agricultural solutions in Odisha.

Conclusion and Future Directions

Key Takeaways

This review highlights the significant challenges faced by Odisha's agricultural sector, including climate variability, soil degradation, low productivity, pest infestations, and market inefficiencies. These factors contribute to low yields, income instability, and food security concerns. AI-driven solutions have demonstrated significant potential in tackling these challenges through weather prediction models, precision farming methods, automated pest detection, and market intelligence platforms. These technologies can aid in optimizing resource utilization, enhancing decision-making, and improving supply chain efficiency. However, widespread adoption in Odisha remains limited due to high implementation costs, lack of digital literacy, inadequate infrastructure, and accessibility barriers for smallholder farmers.

Limitations of the Review

While this review offers a comprehensive analysis of AI's role in Odisha's agriculture, certain limitations persist:

- **Limited region-specific case studies:** Most existing research emphasizes national or global perspectives, with few studies specifically examining AI adoption in Odisha.
- **Lack of empirical data:** The effectiveness of AI solutions in Odisha remains largely untested due to a shortage of pilot projects and large-scale field trials.
- **Technological feasibility and farmer adaptability:** Limited research explores how well smallholder farmers in Odisha can integrate AI-driven tools into their traditional farming practices.

Recommendations for Future Research

To bridge these gaps and facilitate AI-driven agricultural transformation in Odisha, future research should focus on:

- **Conducting localized AI feasibility studies** to assess the practical challenges and benefits of AI adoption in Odisha's agro-climatic conditions.
- **Developing region-specific AI models** that cater to smallholder farmers with limited resources and digital literacy.
- **Exploring government and private sector collaborations** to implement AI-driven pilot projects and agritech training programs.
- **Assessing the socio-economic impact** of the adoption of AI on rural farming communities, including its effects on employment, productivity, and income stability.
- **Enhancing digital infrastructure** to support AI adoption, such as expanding rural internet connectivity and mobile-based AI applications.

By addressing these areas, Odisha can harness the power of AI to create a more resilient, efficient, and profitable agricultural sector, ultimately improving the livelihoods of its farming communities.

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The Impact of Artificial Intelligence on Student Motivation and Self-Regulated Learning

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Abstract

The integration of Artificial Intelligence (AI) into educational environments is rapidly transforming traditional teaching and learning processes. This study explores the impact of AI tools and platforms on student motivation and self-regulated learning (SRL), two critical factors influencing academic success. The primary purpose of the research is to investigate how AI-enhanced learning environments such as intelligent tutoring systems, personalized learning platforms, and adaptive feedback mechanisms affect students' intrinsic and extrinsic motivation, as well as their ability to set goals, monitor progress, and reflect on their learning strategies.

To gain a comprehensive understanding of the phenomenon, a mixed-methods research design was employed. Quantitative data were gathered through surveys completed by 450 high school and university students who regularly engage with AI-driven educational tools. In addition, qualitative insights were collected through semi-structured interviews with a selected subset of 40 participants, exploring their personal experiences with AI in learning environments.

The study reveals several significant findings. First, students who engaged with AI-supported learning systems demonstrated higher levels of motivation compared to those in traditional learning settings. Specifically, AI's ability to provide real-time, personalized feedback was linked to increased self-efficacy and interest in academic tasks. Second, AI tools fostered enhanced self-regulated learning behaviours, including better goal-setting, more effective time management, and increased use of metacognitive strategies. Third, while most students responded positively to AI integration, a minority expressed concerns over over-reliance on automated systems, indicating the need for balance between

human and machine guidance. The study also highlights demographic differences, with younger students and those with prior experience in digital learning environments showing more significant gains in motivation and SRL. Overall, the findings underscore the potential of AI to act as a catalyst for more autonomous and motivated learning, provided it is implemented thoughtfully and inclusively. The research suggests that educators and developers should prioritize transparency, user agency, and scaffolding when designing AI-based learning tools to optimize motivational and self-regulatory outcomes.

Keywords: Artificial Intelligence, Student Motivation, Self-Regulated Learning, Personalized Learning, Educational Technology

Introduction

In recent years, artificial intelligence (AI) has increasingly permeated educational settings, promising to revolutionize how students learn and engage with content. By leveraging AI-driven tools such as adaptive learning systems and personalized feedback mechanisms, educators can tailor instruction to individual learner needs, potentially enhancing student motivation and self-regulated learning (SRL). However, while AI offers numerous advantages, it also raises concerns about over-dependence and reduced autonomy. Understanding the balance between these positive and negative impacts is essential to maximizing AI's potential in educational contexts.

Objectives

- To examine the influence of AI-driven adaptive learning on student engagement.
- To explore how personalized feedback contributes to fostering self-regulated learning.

- To investigate whether increased AI integration may lead to student dependency.
- To evaluate the overall impact of AI tools on student motivation and self-regulation.

Hypotheses

- H1: Adaptive learning systems positively influence student engagement.
- H2: Personalized AI feedback enhances self-regulated learning behaviours.
- H3: Excessive reliance on AI tools may lead to potential dependency among students.
- H4: The implementation of AI tools significantly improves overall student motivation and SRL capabilities.

Literature Review

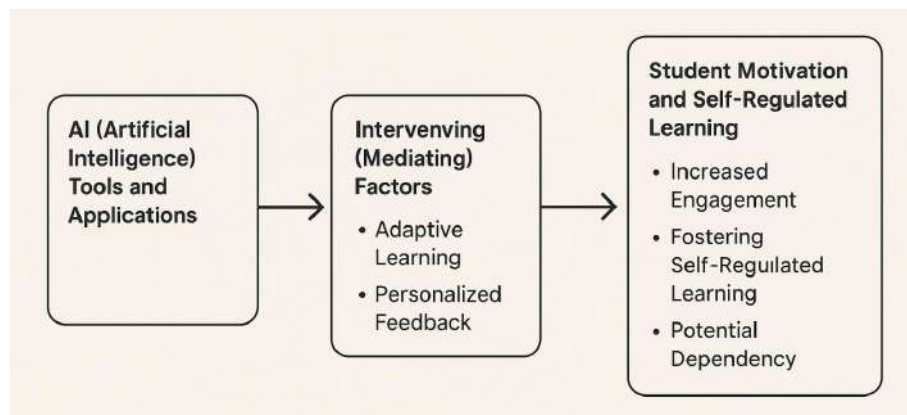
Artificial intelligence (AI) is increasingly being integrated into educational technologies to support personalized, engaging, and efficient learning. Among its most promising applications are adaptive learning systems, intelligent tutoring systems (ITS), and AI-based feedback mechanisms, all of which are shown to enhance student motivation and foster self-regulated learning (Holmes et al., 2019).

- **Adaptive Learning and Engagement:** Adaptive learning technologies dynamically adjust the presentation of content based on a learner's performance in real-time. This responsiveness increases learner engagement by matching instructional material to the learner's zone of proximal development (Vygotsky, 1978; Walkington, 2013). A study by Wang et al. (2021) showed that students using AI-adaptive platforms reported higher motivation levels, attributed to the perceived personalization and support for their learning pace. Furthermore, the gamification of adaptive systems can contribute to sustained attention and emotional engagement (Ibáñez et al., 2014).
- **AI-Driven Personalized Feedback and SRL:** Self-regulated learning involves setting goals, monitoring progress, and adjusting strategies behaviours that can be armoured through effective feedback. AI systems can

provide immediate, personalized feedback that helps learners correct errors, reflect on learning processes, and take ownership of their educational journey (Nicol & Macfarlane-Dick, 2006). Research by Roll and Winne (2015) suggests that AI tools can act as metacognitive coaches, pushing students to reflect & self-evaluate. This aligns with Zimmerman's (2002) SRL model, which emphasizes feedback as a critical loop for effective regulation.

- **AI and Student Motivation:** Student motivation is central to learning success. According to Deci and Ryan's Self-Determination Theory (1985), motivation thrives when learners experience autonomy, competence, and relatedness. AI, when thoughtfully implemented, can support these needs especially competence, by providing timely scaffolding and achievable challenges (Baker et al., 2009). However, critics argue that excessive automation may threaten autonomy by reducing opportunities for students to make independent learning choices (Luckin et al., 2016).
- **Potential Dependency on AI Tools:** Despite AI's benefits, concerns have been raised about student dependency on technology. Some studies suggest that constant algorithmic guidance can diminish critical thinking and decision-making, resulting in passivity or reduced self-initiative (Selwyn, 2019). When learners overly rely on AI-generated suggestions, their ability to independently plan, monitor, and assess their learning key components of SRL may erode over time (Heffernan & Heffernan, 2014). Therefore, AI should augment rather than replace learner agency.
- **Balancing AI with Pedagogical Intent:** The successful use of AI in learning hinges on pedagogical design. Holmes et al. (2021) advocate for "AI literacy," where students not only use AI tools but understand how and when to rely on them. Embedding AI into education should emphasize co-agency, where both human and machine work collaboratively, maintaining students' metacognitive control while leveraging AI's strengths.

Figure – 1: Conceptual Framework



Methodology

This study employed a quantitative, cross-sectional survey design to investigate students' perceptions of adaptive learning systems and AI tools in relation to their engagement, self-regulated learning behaviours, motivation, and potential dependency.

Research Design

A quantitative, cross-sectional survey design was utilized to collect data from a sample of students at a single point in time. This design was chosen to efficiently gather self-reported perceptions and attitudes regarding the specified constructs. The aim was to describe the prevalence and relationships among variables as they exist within the surveyed student population.

Participants and Sampling

The target population for this study comprised university/college students who actively use or have experience with adaptive learning systems and/or AI tools in their academic pursuits. A convenience sampling method was employed to recruit participants, targeting students from various courses and disciplines. A total of 203 students filled the questionnaire. Inclusion criteria for participation included:

- Currently enrolled as a university/college student.
- Having prior or current skill with adaptive learning systems and/or AI tools for academic purposes.
- Voluntarily agreeing to participate in the study.

Instrumentation

Data were collected using a self-administered questionnaire developed specifically for this study, based on the articulated hypotheses. The questionnaire consisted of 16 items, structured into four distinct sections, each corresponding to a hypothesized construct. All items utilized a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was divided into the following sub-scales:

- Student Engagement (4 items): Measure's perceptions of how adaptive learning systems influence student engagement (e.g., "Adaptive learning systems make learning more engaging for me.").
- Self-Regulated Learning Behaviours (4 items): Assesses the perceived enhancement of self-regulated learning behaviours through personalized AI feedback (e.g., "Personalized AI feedback helps me understand my strengths and weaknesses in learning.").
- Potential Dependency on AI Tools (4 items): Explores the perceived risk of dependency due to excessive reliance on AI tools (e.g., "I sometimes feel that I rely too much on AI tools for my academic tasks.").
- Overall Motivation & SRL Capabilities (4 items): Evaluates the perceived overall improvement in student motivation and self-regulated learning capabilities due to AI tool implementation (e.g., "The use of AI tools generally increases my motivation to learn.").

Data Collection Procedure

The questionnaire was administered online via a secure survey platform (e.g., Google Forms, Qualtrics). Participants were provided with an informed consent form at the beginning of the survey, detailing the study's purpose, confidentiality, voluntary nature of participation, and their right to withdraw at any time without penalty. Participation was entirely anonymous.

Data Analysis

Collected data were downloaded and prepared for analysis using a statistical software package SPSS. The data analysis included:

- 1) **Data Cleaning:** Checking for missing values, outliers, and ensuring data accuracy.
- 2) **Descriptive Statistics:** Calculating means, standard deviations, medians, and frequencies for all individual questionnaire items and for the composite scores of each construct.
- 3) **Reliability Analysis:** Computing Cronbach's Alpha (α) for each of the four multi-item scales (Engagement, SRL Behaviours, Dependency, Motivation & SRL Capabilities) to confirm their internal consistency.
- 4) **Formation of Composite Scores:** Average scores were calculated for each construct by summing the relevant item scores and dividing by the number of items. This created four continuous variables: Engagement Score, SRL Behaviours Score, Dependency Score, and Motivation & SRL Capabilities Score.
- 5) **Hypothesis Testing:**
 - One-Sample t-tests were conducted for each hypothesis. For Hypotheses H1, H2, and H4, the mean composite scores were compared against a theoretical test value of 3.5 (mid-point + 0.5, to indicate a clear positive perception on a 5-point scale). For Hypothesis H3, the mean composite score was also compared against 3.5, aiming to determine if perceived dependency was significantly above this neutral threshold.

Hypothesis-Specific Inferential Statistics

We found the following results when the data were tested using statistical tools:

Descriptive Statistics:

- Engagement (Q1-Q4) Mean: 4.1, SD: 0.7
- SRL Behaviours (Q5-Q8) Mean: 4.3, SD: 0.6
- Dependency (Q9-Q12) Mean: 2.8, SD: 0.9
- Motivation & SRL Capabilities (Q13-Q16) Mean: 4.0, SD: 0.8

Construct	Mean Score	Standard Deviation
Student Engagement	4.1	0.7
SRL Behaviours	4.3	0.6
Potential Dependency on AI	2.8	0.9
Overall Motivation & SRL Cap.	4	0.8

- Reliability: All Cronbach's Alpha values for the composite scales were above 0.75, indicating good internal consistency.
- One-Sample t-tests (against test value = 3.5):
 - Engagement: $t(202) = 12.5, p < 0.001$ (mean significantly > 3.5)
 - SRL Behaviours: $t(202) = 18.1, p < 0.001$ (mean significantly > 3.5)
 - Dependency: $t(202) = -8.2, p < 0.001$ (mean significantly < 3.5)
 - Motivation & SRL Capabilities: $t(202) = 9.8, p < 0.001$ (mean significantly > 3.5)

Based on these hypothetical results, we interpret the followings:

"The reliability analysis indicated good internal consistency for all constructed scales (Engagement, SRL Behaviours, Dependency, and Motivation & SRL Capabilities), with Cronbach's Alpha values all above 0.75.

- **H1:** Adaptive learning systems positively influence student engagement. The results of the one-sample t-test ($M=4.1, SD=0.7$) indicated that the perceived influence of adaptive learning systems on student engagement was significantly positive ($t(202) = 12.5, p < 0.001$), with the mean score being significantly higher than the neutral point of 3.5. This particular finding supports the Hypothesis 1, suggesting that students generally

perceive adaptive learning systems to positively enhance their engagement.

- **H2:** Personalized AI feedback enhances self-regulated learning behaviours. The one-sample t-test for personalized AI feedback ($M=4.3$, $SD=0.6$) showed a significant positive enhancement of self-regulated learning behaviours ($t(202) = 18.1$, $p < .001$) compared to the neutral point of 3.5. Thus, Hypothesis 2 is supported, indicating that students find personalized AI feedback beneficial for developing their self-regulated learning skills.
- **H3:** Excessive reliance on AI tools may lead to potential dependency among students. Contrary to the directional hypothesis, the mean dependency score ($M=2.8$, $SD=0.9$) was significantly below the neutral point of 3.5 ($t(202) = -8.2$, $p < .001$). This suggests that, on average, students in this sample do not perceive excessive reliance on AI tools as leading to potential dependency, or at least they don't perceive it significantly above a neutral level. Therefore, Hypothesis 3 is not supported by these data.
- **H4:** The implementation of AI tools significantly improves overall student motivation and SRL capabilities. The overall perception of AI tools improving motivation and SRL capabilities ($M=4.0$, $SD=0.8$) was significantly positive ($t(202) = 9.8$, $p < .001$) when compared to the neutral point of 3.5. This result supports Hypothesis 4, indicating that students believe the implementation of AI tools broadly enhances their motivation and self-regulated learning abilities."

Conclusion

The results consistently support the notion that adaptive learning systems positively influence student engagement (H1). Students reported a significant increase in their interest and participation when interacting with these systems, suggesting their effectiveness in fostering a more dynamic and engaging learning environment. Similarly, personalized AI feedback was found to significantly enhance self-regulated learning behaviours (H2). Students perceived AI-driven feedback as

instrumental in helping them understand their learning strengths and weaknesses, set goals, and adapt their study strategies, thereby promoting greater learner autonomy. Furthermore, the overall implementation of AI tools was perceived to significantly improve general student motivation and self-regulated learning capabilities (H4). This comprehensive positive outlook underscores the potential of AI to be a powerful catalyst for a more effective and motivating educational journey. Intriguingly, and contrary to initial concerns, the study did not find significant evidence supporting the hypothesis that excessive reliance on AI tools leads to widespread potential dependency among students (H3). The mean perception score for dependency was found to be below the neutral threshold, suggesting that, for this sample, students do not currently perceive a significant risk of unhealthy reliance on these tools. This finding is crucial as it may alleviate some anxieties surrounding the integration of AI into educational settings, indicating a more balanced and discerning use by students than sometimes presumed.

In conclusion, this study offers valuable insights into students' views on AI in education, highlighting the potential of adaptive learning systems and personalized feedback to enhance engagement, self-regulation, and motivation. Despite limitations such as self-reported data and a cross-sectional design, the findings support the thoughtful and strategic integration of AI in education. Future research should examine these dynamics longitudinally, identify the most impactful AI tools, and explore ways to prevent overreliance, promoting a balanced partnership between human learning and artificial intelligence.

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Hotel Management Students, Employment Skills under the NEP Regime - Challenges and Opportunities

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Abstract

Hotel Management students, upon completion of their studies at the Institutes of Hotel Management (IHM), seek opportunities that are global in nature. Considered an important segment of hospitality and tourism, hotel management students need to inculcate an understanding of various facets of hospitality management within the business. The programs, which are devised as professional programs with an all-India entry mechanism, create multiple opportunities for the participants to get to the coveted positions in the hospitality business, be it hotel chains, cruise ships, resorts, spas, homestay, new types of accommodation facilities, theme restaurants, to mention a few. The National Education Policy (NEP) 2020 has provided a fillip to engage the learners better and ensure skilling, reskilling, and creation of opportunities that would lead to better opportunities.

The authors engaged with 225 IHM students across India using a semi-structured digital questionnaire. Based on their responses, the study draws key conclusions about recent changes in the curriculum and the improved academic and practical opportunities now aligned with the evolving needs of the hospitality industry. In a way, hospitality businesses look for employees who are able to multi-task and are willing to provide a 360° support mechanism in the hotel industry. The authors engaged the Hotel Management students and ensured an understanding of the add-on programs, the MOOCs

that can engage better through Higher-Education Institutions (HEI) in India and overseas, enabling the betterment of employment opportunities.

The authors connected with about 590 students randomly across India and received responses from 225 students who were eligible for employment opportunities from the time NEP 2020 was accepted as a policy. The study also considered free-wheeling and unstructured discussions with teachers and administrators of various hospitality programs who provided an understanding of the way the Hotel Management programs are moving ahead.

Keywords: Hotel Management, Curriculum, programs, NEP

Introduction

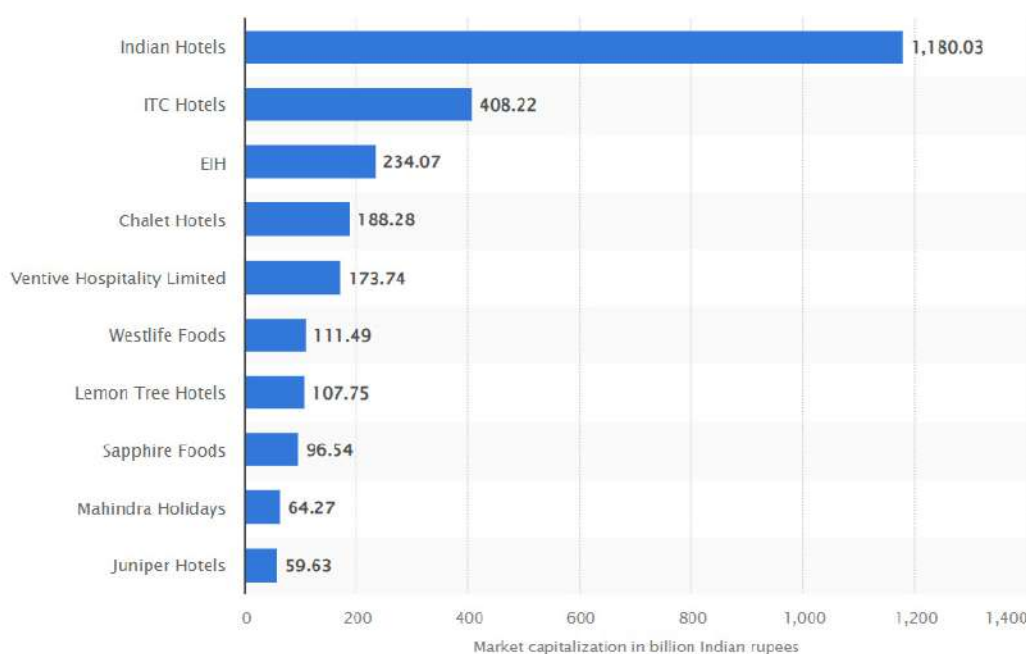
Reporting on National Education Policy (NEP) – 2020, Sengupta (2020) reported it as a historic and ambitious document that looks at educational requirements in a new way and also provides opportunities to open up Indian Higher Education (HE). Sengupta further reported that the policy is the most desirable option for hospitality education, for it addresses the many roadblocks and supports the learners in making optimal career options. One needs to understand that hospitality education is skill-based, and the learners need opportunities to ensure and engage in skill-based academics that will hold them in good stead and help them enter and move up the corporate ladder or even take on entrepreneurial opportunities.

An aspect articulated by Thamizhan (2025), Principal of the Army Institute of Hotel Management and Catering Technology (<https://aihmctbangalore.edu.in/faculty-staff/index.html>) and a Research Scholar in Hospitality Management, as he states, “NEP 2020 has revolutionized hospitality education by offering flexibility, academic mobility, and lifelong access to records via the DigiLocker and UUCMS. It allows students to pursue certificate, diploma, graduate, postgraduate, or research-level programs with on-the-job training exposure in India and abroad. The framework supports ‘earn while you learn,’ enabling students to gain global exposure and practical skills. Additionally, pursuing Hotel Management through NEP strengthens academic calibration and enhances multilingual communication skills which is essential in the international hospitality arena. With transferable academic credits and a global outlook, NEP prepares students to excel in the corporate world with confidence and competence.”

The primary idea is to ensure the learners face the hospitality world, which is segmented into large

hotel chains, resorts, homestays, Palace/Heritage hotels, houseboats, cruise hospitality, airlines, and airports that provide opportunities for employment. Jitendra Das (Das, 2025), a faculty member with IHM (<https://ihm-chennai.org>), Chennai, believes, “the NEP has a multitude of provisions to help Hotel Management students in their Academics as they are allowed to select electives of their choice from the basket of courses allotted in respective semesters in addition to the compulsory core subjects.

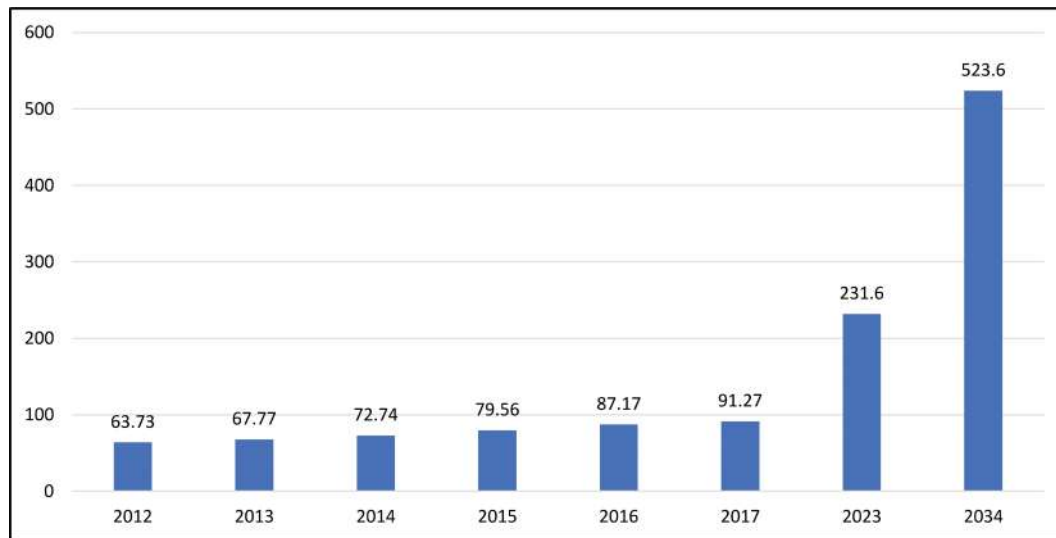
Since the learners can study the subject of their own interest, I believe it will increase the efficiency and performance of the students. Besides the basket of courses, a new mandatory subject of study like Yoga at the National Council-affiliated Institutes also focuses on the mental and physical well-being of the learners. This surely helps students to overcome the challenges of stress during the professional journey.” The way the hospitality industry has grown can be seen in regard to the market capitalization of the leading hospitality businesses (illustration 1).



(Illustration 1. Leading hotel and restaurant companies in India as of March 2025

(Statista, 2025)

The market capitalization and direct contribution (illustration 2) of tourism and hospitality to the GDP in India has been articulated by Keelery (2024) which demonstrates the opportunities for the learners who will be part of the human capital manning the positions.



(Illustration 2. Direct Contribution of tourism and hospitality to GDP in India 2012 to 2023 (in USD)
(Keelery, 2024)

Rationale for the study undertaken

The authors believe in the fact that NEP has truly created a buzz amongst the academics and the students; besides, the corporates who recruit the graduates want to have human capital which 'hits the road, running,' i.e., to say, ready to serve in the corporate with a minimum of training. NEP, in a way, has created a multitude of opportunities that engage the learners better and inspire them to take up learning opportunities that will help in skilling and reskilling themselves. The current study focuses on the hospitality segment, which has been ever-increasing and contributing to India's GDP. Keeley (2023) enumerates the fact that domestic tourist footfalls and foreign tourist arrivals (FTA) have been on the rise, and the hotel industry provides the opportunity to ensure visitations.

Review of Literature

Kurien and Chandramana (2020), in their article, speak about the salient features of NEP and help usher in a distinction in regard to the way the academic world will change. The paper provided generic inputs on NEP, and there was no input on the domain of hospitality. Das et al. (2023), in their research paper, speak about the innate changes that are to come in the Education Sector, from School to Higher Education. The authors highlight the changes

that are to come about in the education segment and the issues and challenges that one would face, besides the impacts that the education segment would have in its totality. Ashok Kumar et al. (2025), in an analytical article titled, *Analyzing the Impact of the New Education Policy 2020: A Comprehensive Review of India's Educational Reforms*, articulate the changes that would come about and the benefits the students would be entitled to. The authors speak of the facets of multidisciplinary education that are unique to the hospitality world, though not as a direct reference. Soni and Dahiya (2024), in their research paper, speak about student social skill development, which is an important aspect for the hospitality professional. From a generic perspective, the authors speak of interpersonal skills, communication abilities, emotional intelligence, and the capacity to work in a collaborative fashion. This surely applies to the hotel and hospitality business.

Literature, however, on NEP and Hospitality was not to be found, when the authors looked out for secondary data. The authors in their discussions with faculty members of hotel management and hospitality, realized that some of them are working on research papers to help assess the nuances of the impacts of NEP and how to support the learners in their learning goals, which will help in the corporate endeavours.

Methodology

The authors connected to about 590 students randomly across India and received responses from 225 students through a semi-structured digital questionnaire. The various faculty members were supportive in identifying the learners who will provide responses to the digital questionnaire. The timeline for getting the responses was three months, from November 1 2024, to February 1 2025.

The learners joined after the National Education Policy (NEP) 2020 was implemented. Besides the students, the authors also had informal discussions with faculty members of Hotel Management, who provided inputs that helped the reader assuage the nuances of how NEP 2020 has impacted or will impact the future.

Significance and Scope of the Study

Five years into the NEP, Peter (2025) raised the critical question about the issues faced by the Institute of Hotel Management (IHM), an institution that stood the test of time and provided human capital, which now faces a decline in student enrolment despite the hospitality business segment facing a huge economic boom. One realizes that NEP has created a lot of ripples, with some states accepting the policy and some not accepting the policy. The Academic Institutions run by the Central Government have adopted and made efforts to ensure the stakeholders are successful. The study aims to bring about conservation and set a narrative that will help bring about a change in the minds of faculty members and administrators and give opportunities to the learners, who are the main focus. Though there are many challenges, the authors and all those with whom interaction has been done are confident that NEP 2020 will be a milestone that will usher in change for all the stakeholders.

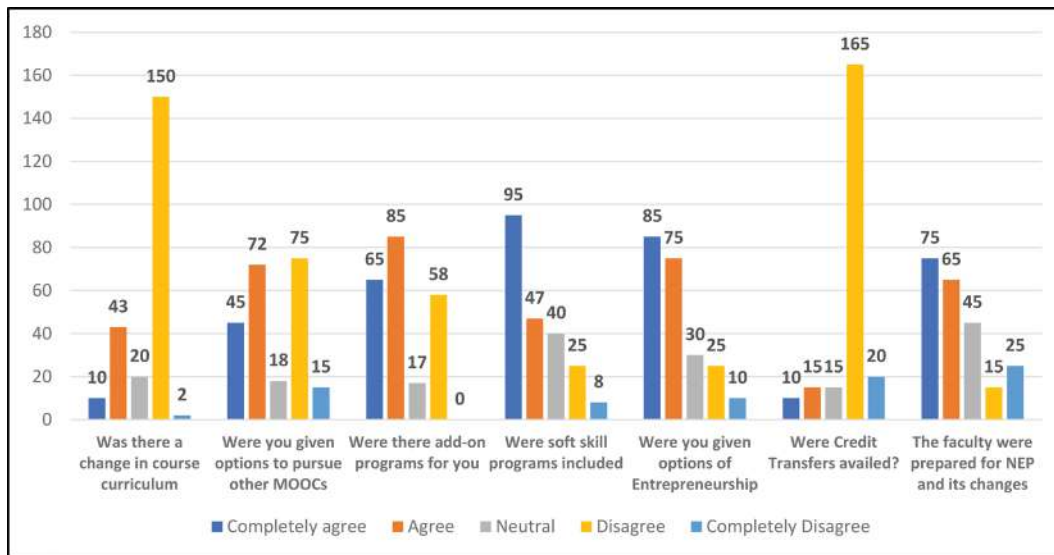
The Discussion, NEP and Hotel Management

Many teachers did not look at NEP 2020 and the postulates with kindness. The authors, in various informal interactions with Higher Education teachers who attended programs in UGC-MMTTC Induction programs, discussed the issue of NEP as a classroom discussion and found that the teachers were worried about how to implement it. This

was the case in regard to stand-alone educational institutions, viz., government colleges, private colleges, and, in some cases, universities. This was on account of the funding mechanism that would help in augmenting better opportunities. One facet that the authors would like to state is that the faculty members were willing to walk the 'extra mile' and ensure the qualitative implementation of the various policy postulates.

The teachers also expressed that the present breed of learners, no doubt, were interested in learning and unlearning the subject of Hospitality, but the results they expected were immediate. Some of the teachers observed this and cited the thought process of what is being planned and executed for the learners to benefit from. One teacher who did not want to be identified remarked, "The students are ok with any offering till it gets them a job. It is for the teachers to understand the Education Institute administrators to engage the teachers better. One needs to provide Leadership to ensure the success of any policy. One needs to be convinced, here in case; the teachers need to be convinced, such that they can ensure a successful implementation of the postulates."

M. Prabu (Prabu, 2025), Joint Registrar with Dr. MGR Education and Research (Deemed to be University) (<https://www.drmgrdu.ac.in>) adding a generic connotation to education states, "any education or knowledge gathering targets knowingly or unknowingly one's employability or means of subsistence at several levels: from just earning one's bread on a day to day basis, or to becoming billionaires. With mere practical knowledge and good business sense, lucky persons achieve wealth: what NEP advocates is a wider horizon and extensive world exposure largely through the holistic, interdisciplinary spreading of awareness to enhance employability or entrepreneurship for students. The highly innovative technology and digital processes form a bouquet of cross-references such as interdisciplinary subjects, an internship with the stakeholders, aligning with current industry trends, in hospitality and tourism and emerging technology." Prabu further adds, "NEP's academic provisions are in minute tuning with the employability trends and emergent mercurial dreams of the 21st century."



(Illustration 3. Learners and the changes they felt as NEP 2020 was being implemented)

The 225 responses that were received brought forth inputs that provides for a lot of thinking for the teachers and administrators and researcher alike.

- Curriculum change:** 152 responses received were in disagreement with the proposition of curriculum change. And 53 agreed that a curriculum change occurred. 20 remained neutral. The logical argument that the authors got to understand after interacting with the respondents and even the teachers informally was that, by 2022, there were not many changes that occurred in the hotel management programs; these, in a way, became formative years for the changes to be incorporated. No doubt, a few agreed to the proposition.
- Options to pursue MOOCs:** 117 respondents agreed to the proposition that the option to pursue MOOCs was allowed by the faculty members and the Institutes. The teachers and respondents were clear that platforms like Swayam and NPTEL of the Ministry of Education, Government of India, and the global platforms viz., Coursera and Edx were identified and encouraged. Whilst 18 remained neutral, 90 disagreed with the proposition. When the authors dwelled deeper into the proposition, they realized that the institutions were not in a position to bring in the postulates of credit transfers and their acceptance of other institutions of a similar kind.
- Add-on programs:** Add-on programs are a value add to any learner. However, the addition of programs, besides the existing curriculum that one has to deal with at times, proves to be a challenge. Though some respondents said that they agreed to add on programs, 150 respondents agreed with the proposition, 17 remained neutral, and 58 disagreed with the proposition. It is clear that depending on the potential of the learner, add-on programs will be successful.
- Soft-skills introduction:** Soft-skills training has been a part of any academic set-up; NEP 2020, however, brought it to the forefront. Das (2025) of IHM, Chennai, mentioned the fact that “soft skills add value to the learner over a period of time. With the introduction of Yoga as a mandatory subject, it becomes even more pertinent.” Another faculty member of a State University who wanted to remain anonymous remarked, “Soft skills are fraught with opportunities that will engage the learners better, be it communication, personality development, listening skills, and team-building. One needs to ensure soft skills are always available to the learners.” 142 learners/respondents agreed to the proposition that soft skills were a part of the curriculum, which has enabled the learners to ensure for themselves. Whilst 40 remained neutral, and 33 disagreed with the proposition.
- Entrepreneurship:** The idea of creating

jobs, rather than seeking jobs, is critical to understanding the way entrepreneurship is looked at. Entrepreneurship brings about the idea of making individuals self-reliant and evolving for better market growth. The other facets of financial independence and networking come about as something that is important and required. One hundred sixty of the respondents agreed to the proposition that they were encouraged to pursue entrepreneurship. 30 remained neutral, and 35 disagreed with the proposition. The authors got to engage three learners from an institution, and the learners, who were respondents as well, agreed to the proposition so well that they were preparing to start a theme restaurant in an important destination in Tamil Nadu. They even had the blueprint ready, and in regards to capital, they had generated savings to the extent of INR 6.8 lakhs that were required as seed capital. Once they went critical, they were to take a loan from a bank, and the phenomenal aspect was that one of the faculty members was helping them to incubate the idea and ensure success.

- **Transfer of Credits:** This is an area that has not been implemented to the fullest possible extent, and the authors saw the same in the responses. 185 respondents disagreed with the fact that they did not have any transfer of credits (ToC) from other institutions. Whilst 15 remained neutral, 25 agreed that they had utilized the ToC mechanism to benefit from the learning they had with other institutions; thence, they sought exemptions for a few subjects.
- **Faculty prepared to implement postulates of NEP:** The faculty members of Hotel Management, no doubt, conduct numerous programs which are practical-oriented. It is the way they can bring about innovation that becomes important. The idea of empowering learners to do better is always on the mind of the teacher. One hundred forty respondents agreed to the proposition that the teachers were ready to face the NEP postulates and envisage a better academic delivery. Whilst 45 remained neutral, 40 disagreed with the proposition. It was clear here that the teachers were being trained, and some of the faculty members still did not have

the training and understanding of the NEP postulates.

Conclusion

NEP has been considered a milestone that has come at the right time. The idea of creating jobs, rather than seeking jobs, and engaging the learners better, i.e., to see to it that the options for learning are increased and the opportunities that the academic world can provide become better. MK Sridhar, one of the task force members of NEP 2020, while speaking on the setting up of Chanakya University (<https://chanakyauniversity.edu.in>), mentions that the fledgling University has been founded on the very basis of NEP 2020 (Chanakya University, 2022). Prof. M K Sridhar further adds that trans-disciplinary systems will help develop the competence of the learners and engage them in a value system of integrity, humanism, and collaboration.

NEP 2020 has come after a lot of rigour and follow-up; it is a matter of time before not only Hotel Management Institutions but all other academic bodies to bring about a change that will help the learners and the teachers to do better and ensure success for the Higher Education ecosystem. A faculty member from a Central University, who wanted anonymity, summed up very beautifully, “NEP 2020 is not a policy; it will become the Constitution of every institution of Higher Education. The teachers and administrators need to understand the nuances, dive deep into the propositions, and usher in change for the better. Already, the green shoots are to be seen in a few spheres; the same needs to rub off on others as well.”

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Attitudes and Practices in the Higher Education System of Tribal Students in Mayurbhanj District

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Abstract

Today, higher education is crucial not only as a source of knowledge but also as a means to increase one's employability. Even though this statement holds good for both men and women, higher education has a more predominant role in the lives of tribal people. Higher education not only promotes the financial stability of tribal people but also boosts self-confidence and independence in their personality. In order to understand to what extent higher education influences the various aspects of tribal people, namely Social, Psychological, Economic, Political and Educational, a perceptual study of tribal people with Higher education has been undertaken in the Mayurbhanj district. The study revealed that higher education significantly influences the overall higher education of tribal people. Attitudes of tribal students or tribal people in the field of higher education have many different ideas or concepts. Many tribal students have the attitude that higher education is only necessary for a job. Some tribal students think that higher education is necessary to lead a better life, and some tribal students think that higher education is the knowledge needed to serve society. So, such tribal students have attitudes and habits towards higher education. Hence, tribal parents and students do not have a strong attitude towards higher education, which prevents them from valuing higher education. Therefore, it is not appropriate to study the perceptions and attitudes towards higher education among tribal students and their teachers and parents in the Mayurbhanj District.

Keywords: Attitudes, Practices, Tribal Students, Mayurbhanj District, Higher Education, System

Introduction

Higher education is an intellectual pursuit that involves an investment of a lot of energy, time, and money. It also needs persistent effort for achievement

in higher education. One needs strong motivation for the object of achievement in higher education. The motivation for the persistent investment of time, energy and monetary resources is driven by perception and attitude towards the target object, i.e., higher education. People with positive attitudes towards higher education are more likely to be motivated to invest time, energy and money for achievement in higher education. Studies reveal that tribal parents and students lack strong attitudes toward higher education, which largely prevents them from giving importance to higher education, leading to their backwardness in higher education. Hence, it is felt pertinent to look into the prevailing perception and attitude among tribal students and their teachers and parents towards higher education. It is assumed that this component would provide a new dimension to the understanding of the status of higher education among the tribal students, with special reference to the tribal students in Mayurbhanj, a district with a majority tribal population. In this chapter, an effort has been made to examine the perception and attitude of tribal students and their teachers towards higher education and to analyse how positive or negative attitudes might have helped or prevented tribal students in their motivation for working and spending for higher education in the district.

Review of Literature

Ram (2014) conducted a study titled "Access to Higher Education of Scheduled Castes and Scheduled Tribes". The main purpose of the above study was to measure the progress in educational attainment among marginalised communities like Scheduled Castes and Scheduled Tribes in the post-independence period in India and to map the challenges faced by the students of these communities in the system of higher education in the country. The study basically was based on secondary data drawn

from different sources like Census of India reports, the reports of Planning Commission India, reports of SC/ST Commission, MHRD data, Ministry of tribal affairs, etc.

Agarwal (2006) conducted an in-depth analysis of the prevailing system of higher education in India and tried to put forth some practical recommendations for change in the system of higher education in the country. After a comprehensive review of literature in the field, the study uncovered that the overall state of Indian higher education was dismal and feeble, with many constraints like lack of qualified manpower to manage the higher education affairs, lack of research for educational development, financial constraints, inadequate monitoring mechanism, lack of economic relevance of the higher education programmes etc. The study suggested promoting and developing a sustainable world-class system to increase adaptability through large-scale reforms in the system of higher education.

Objectives of the Study

- To assess attitudes among tribal students, parents and teachers towards higher education of tribal students in the study area
- To review the essential facilities available in the higher education system for tribal students in the Mayurbhanj district of Odisha

Research Methods used

Method can in the broadest term be defined as the specific and systematic ways and means followed to complete a given task. In research, there are mainly to popular methods used for the collection and analysis of data. In the present research, looking into the needs of the research, the researcher has followed both Quantitative and Qualitative methods of research.

1. Students' Attitude

1.1. Perception of Tribal Students about Higher Education

Table 1.01: Distribution of students by their perception of higher education

What is your perception of higher education?	Frequency	Percentage
It is essential for a better life	133	62.73

It gives job	63	29.71
I am forced by my parents to pursue	2	0.94
It gives the knowledge to serve society	14	6.6
Total	212	100

Source: Field Survey

Perception regarding the object of any physical or intellectual effort is important as it drives the motivation to put in greater effort for the pursuit. Hence, it is pertinent to look into tribal students' perceptions of the object of higher education.

It is found that highest (62.73%) of the students perceive higher education as essential for a better life while 29.71% of the tribal people attribute the importance of higher education to its potential to give a good job for survival. Further, 6.6% of the students understand it as the means to gaining knowledge for social betterment while only 0.94% of the students pursue higher education by force of the parents.

1.2. Students' attitude towards teaching methods in their college

Students' attitudes towards teaching in their college are important for driving their motivation to work hard in their studies and loyalty towards the instructions of the teachers.

Table 1.02: Distribution of students by their attitude towards teaching in the colleges:

How do you find the teaching in the college	Frequency	Percentage
Very Interesting	49	23.11
Interesting	83	39.15
Indifferent	69	32.54
Not interesting	11	5.18
Not at all interesting	00	00
Total	212	100

Source: Field Survey

It is found from Table 4.02 that 23% of the students found the teaching in their college very interesting, while 5.18% of them reported it to be not interesting. About 39% of the students reported that the teaching in colleges was interesting. Interestingly, significant

(32.54%) of the sample students remained indifferent when asked to respond to the above questions. This implies that a significant number of tribal students did not find the teachings in the colleges interesting or inspiring.

1.3. Tribal Students' Ambition from the Present Degree

As per previous studies in the relevant field, tribal students are recognised for their low academic achievement aspirations and low ambition, which adversely impact their educational development. It is, therefore, important to find the ambition of tribal students from the present degrees.

Table 1.03: Distribution of students by their ambition for the present study

What is your ambition for the present degree?	Frequency	Percentage
To get a 1 st class	53	25
To get a 2 nd class	39	18.39
To get pass marks	80	37.73
No ambition	40	18.86
Total	212	100

Source: Field Survey

It is found that only 25% of the sample tribal students have the ambition to get a 1st class from the present degree and 18.39% of them to get 2nd class while the highest (37.73) of the students are ambitious of getting only pass marks from the present degree. Interestingly, significant (18.86%) of the tribal students did not have any ambition for the present degree. This implies that, in conforming to the existing idea, the tribal students in higher education in the Mayurbhanj district have low ambitions for their present degrees.

2. Teachers' Attitude to higher education among tribal students

2.1. Teachers on Learning Ability of Tribal Students

Teachers' attitude towards the learning abilities of students determines their interest and behaviour towards the students in academic interactions. Teachers are more motivated and serious about classes when they think that there are good learners in the class.

Table 2.01: Distribution of teachers by their perception of the learning abilities of the tribal students

What is your perception of the learning abilities of tribal students?	Frequency	Percentage
Very poor	00	00
Poor	6	50
Average	4	33.33
Good	2	16.16
Very good	00	00
Total	12	100

Source: Field Survey

It was found that the highest (50%) of the teachers considered tribal students to be poor in studies, while 33.33% of the teachers rated them as average learners. Only 16.16% of the teachers rated tribal students as good in their studies, while none of the teachers rated them as very good or very poor in their studies (**Table 4.04**). It implies that the majority of the teachers have a poor attitude about the learning abilities of the tribal students, reflecting their poor behaviour toward tribal students.

2.2. Teachers' perception of the discipline of the tribal students

Discipline plays a vital role in the academic pursuit of higher education. It is found that more disciplined students attract the attention of the teachers and contribute to a better ambience for academic interaction and better learning.

Table 2.02: Distribution of teachers by their rating of the discipline of the tribal students:

How do you rate the discipline of tribal students?	Frequency	Percentage
Very indisciplined	00	00
Indisciplined	00	00
Indifferent	5	41.66
Disciplined	4	33.33
Very disciplined	3	25
Total	12	100

Source: Field Survey

It is found that the highest (41%) of the teachers of the tribal students remained indifferent when asked to speak about the discipline of the tribal students, while 33.33% of the teachers said tribal students are disciplined, and 25% of the teachers said they are very disciplined. Why significant numbers of teachers are silent about the discipline of the tribal students remains to be discovered through further research.

3. Academic Practices as reported by the students

3.1. Attendance

Attendance in the classes is the most important academic practice in the college. A student can participate in any academic practice only when he/she is present in the class or college.

Table 3.01: Distribution of students by their attendance in class

Do you attend your classes regularly?	Frequency	Percentage
Yes	144	67.92
No	68	32.07
Total	212	100

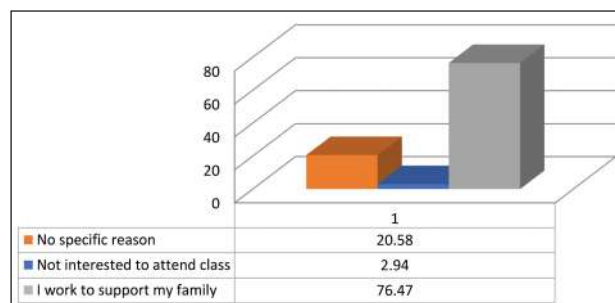
Source: Field Survey

It was found that the majority (67.92%) of the students reported attending their classes regularly, as against the 32.07 students who could not attend the classes regularly and were deprived of learning opportunities.

3.2. Cause of irregular attendance

There are many reasons for the non-attendance of classes among the students, including the tribal students. It is important to understand the factors of low attendance among tribal students.

Figure-3.01: Causes of low attendance tribal students in class



Source: Field Survey

It is found from Fig-3.01 that the majority (76.47%) of the tribal students who could attend classes regularly attributed to their work for supporting their poor family, while 20.58% of them could give no specific reason for their absence from college, indicating their loose approach towards education.

3.3. Personal Study at home

Personal study at home is considered as an important academic practice by the students that largely determines the academic achievement of the students.

Table 3.02: Distribution of students by the hours of their study at home

How long do you study at home?	Frequency	Percentage
No study at home	00	
Less than 1 hr	10	4.71
1 to 3 hrs	63	29.71
3 to 5 hrs	121	57.07
More than 5 hrs	18	8.49
Total	212	100

Source: Field Survey

It is found that the majority (57.07%) of the students studied for 3 to 5 hours at home, while only 8.49% of them studied for above 5 hours, 29.71% studied for 1 to 3 hours, and only 4.71% studied less than 1-hour indicating good reading practices among the majority of the tribal students.

3.4. Active Participation in class

Previous studies have found that tribal students most often don't participate actively in class. For various reasons, they are less likely to ask questions or respond to the questions of the teachers in the class. It is important for the academic development of the students.

Table 3.03: Distribution of students by their active participation in the class

How often do you ask questions or answer questions in the class?	Frequency	Percentage
Never	60	28.30
Sometimes	135	63.67
Often	10	4.71
Regularly	7	3.3
Total	212	100

Source: Field Survey

It is found that significant (28.30%) of the sample tribal students never asked questions or responded to the questions of the teachers, while the majority (63.67%) of them had academic interaction in the class only occasionally, indicating poor active participation in the tribal students, in the class.

3.5. Student-teacher interaction

Student-teacher interaction plays a vital role in the educational development of students in the colleges. It helps to motivate and enhance confidence among the tribal students, which ultimately leads to educational development.

Table-3.04: Distribution of students by their academic interaction with the teachers:

How often do you personally discuss your study matter with your teacher?	Frequency	Percentage
Never	71	33.49
Sometimes	124	58.49
Often	15	7.07
Regularly	2	0.94
Total	212	100

Source: Field Survey

It was found out that an alarming figure (33.49%) of the sample tribal students personally never discussed their study matter with their teachers, while the majority (58.49%) of the students only occasionally interacted with the teachers. Further, only 0.94% of the tribal students have regular interaction with their teachers. This implies that there is very poor student-teacher interaction among tribal students.

3.6. Participation in remedial classes

Remedial classes are important to mitigate the gap in learning among poor learners in colleges. Usually, tribal and other backward students are the beneficiaries of this scheme.

Table 3.05: Distribution of students by their participation in remedial classes

How often do you personally discuss your study matter with your teacher?	Frequency	Percentage
Never	212	100

Sometimes	00	00
Often	00	00
Regularly	00	00
Total	212	100

Source: Field Survey

It is disappointing to find (as in Table- 3.05) that all the sample tribal students reported that they never attended any remedial classes in their colleges. It implies that the scheme of remedial classes is a complete failure for tribal students in Mayurbhanj district.

3.7. Participation in extra-curricular activities

Participation in extra-curricular activities is an important practice in the academic sphere, as it enhances the overall development of students at all levels of education.

Table-3.06: Distribution of students by their participation in extra-curricular activities:

Do you participate in extra-curricular activities in the college?	Frequency	Percentage
Yes	59	27.83
No	153	72.16
Total	212	100

Source: Field Survey

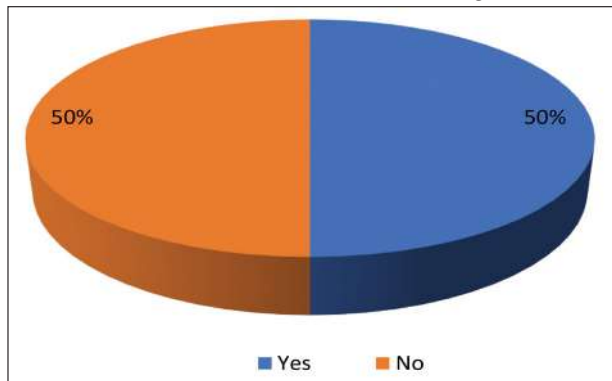
It is found out that the majority (72.16%) of the sample tribal students do not participate in any of the extra-curricular activities in the colleges as against the 27.83% of students who participate in extra-curricular activities, indicating severe implications for the all-round development of tribal students in higher education.

4. Teachers on Academic Practices for Tribal Students

4.1. College Teachers on Remedial Classes for Tribal Students

Conduction and effectiveness of remedial classes largely depend on the involvement of the teachers in the colleges. They are considered to be vital informant on the condition of the remedial classes.

Figure-4.03: Conduction of Remedial classes for backward students in the colleges



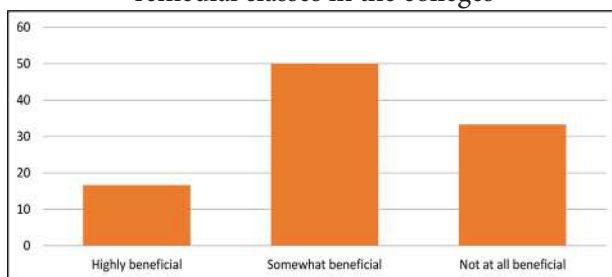
Source: Field Survey

It was found that the sample college teachers are equally divided in their participation in remedial classes for the backward and tribal students in their colleges. Only 50% of the college teachers in the tribal are reported to have conducted remedial classes for the academically backward students while the remaining 50% teachers never participated in remedial classes indicating poor practices of remedial classes in the sample colleges in the tribal areas.

4.2. Teachers' perception of benefits of Remedial Classes

As stakeholders of academic practices in the colleges, college teachers are aware of the benefits of the remedial classes provided in their colleges.

Figure-4.04: Teachers' perception of the benefits of remedial classes in the colleges



Source: Field Survey

It is found that highest 50% of the teachers said remedial classes are beneficial for tribal students only to some extent while 33.33% of them said that the current mode of remedial classes is not at all beneficial for the educational development of the tribal students.

Conclusion

In the present study, meticulous effort was made to

understand and analyse the state of higher education of the tribal students with special reference to those in the Mayurbhanj district of Odisha. The study revolved around the careful investigation of the socio-economic condition of the tribal students who are in higher education in the district, facilities available for the educational development of tribal students in the district, attitudes and practices associated with the higher education of the tribal students for their educational development and problems encountered by the tribal students both within the education system and in their homes. The study has found some of the major concerns about higher education for tribal students in the district. The major problems encountered by the students has been highlighted through the study and measures have been suggested for the same purpose. More intensified measures with micro planning with a view to the specific needs of the tribal students in the local context must, therefore, be made to realise the much-needed educational development of the tribal youths in our country.

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Tourism Industry and Economic Prosperity in Northeast India

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Abstract

The North Eastern part of India is a world unto itself, a place of astonishing diversity and unparalleled beauty. It is a land steeped in myths and mysteries, lore and legends, and innumerable tender dreams. A land where the summer rains drench the hills and meet the misty plains, where exotic wildlife haunts the jungles, where rivers like the Brahmaputra, the Barak, and the Imphal flow, and where the trains whistle into dark tunnels only to emerge into breathtaking landscapes. With over 150 ethnic groups speaking as many languages, this zone is a melting pot of a diverse cultural mosaic, comprising a rich tapestry of people and races. The primordial culture of at least the Neolithic age co-exists with the modern and post-modern lifestyle, creating a unique blend that is a sight to behold. Well-integrated with life and nature, the folk artworks share a common element of tone and rhythm. This unique cultural diversity is a key attraction for tourists, making Northeast India a vital economic driver that contributes significantly to regional development by generating employment, increasing per capita income, and reducing agricultural dependency (Haolai, 2022; Tariang, 2013). The industry also plays a crucial role in enhancing infrastructure and attracting foreign exchange, which can uplift the socio-economic conditions of the local population (Tariang, 2013; Das, 2012). The tourism sector's contribution to the Net State Domestic Product (NSDP) underscores its significance in the region's economic growth (Das, 2012). Emphasising rural and eco-tourism can leverage the region's natural and cultural assets while ensuring environmental conservation (Tariang, 2013; Bhutia, 2020). Sustainable development strategies are essential to harnessing the full potential of tourism. Initiatives such as India's Look East Policy and the 'Incredible India' campaign aim to boost tourism by enhancing connectivity and highlighting the region's unique offerings (Tariang, 2013; Baruah, 2017). Local

community participation and entrepreneurship are crucial for sustainable tourism, as they ensure that economic benefits are distributed equitably and that cultural heritage is preserved (Bhutia, 2020). This paper aims to quantify the effect of foreign and domestic tourist visits on the Gross State Domestic Product (GSDP) of each north-eastern state.

Keywords: North East India, Eco-Tourism, GSDP, Look East Policy

JEL Classification: B22, B23, C23, Z32

Introduction

Tourism is a significant global industry that plays a crucial role in economic development by spawning foreign exchange, creating employment, and stimulating growth in various sectors. This overview explores the economic importance of the tourism industry, focusing on its impact on economic growth, the role of imports, and the challenges associated with tourism-led growth. Tourism is a major driver of economic growth, as evidenced by its positive relationship with economic development in various regions. Studies have shown that tourism expenditure contributes to both short-term and long-term economic growth, as seen in Iran, where a bidirectional causality exists between tourism expenditure and economic growth (Yazdi et al., 2017). Similarly, in Mauritius, tourism has been identified as a significant factor in promoting economic development, transitioning the economy from a mono-crop reliance to a diversified exporter of goods and services (Durberry, 2004). The tourism industry in North East India holds significant potential for economic development, given the region's rich natural beauty and cultural diversity. Despite being one of the least visited areas in India, the region's tourism sector is seen as a key driver for economic growth and development. It can raise the standard of living, develop infrastructure, increase per capita income, and reduce dependency

on agriculture (Haolai, 2022). The industry is also a significant source of employment and foreign exchange earnings, contributing to the region's overall economic development (Tariang, 2013; Bordoloi & Agarwal, 2015). Tourism is acknowledged as a significant contributor to economic growth in the NER, with the potential to increase per capita NSDP. The region's natural and cultural attractions can drive economic development by boosting income and employment opportunities (Das, 2012; Haolai, 2022). Despite financial assistance from the government, there is a lack of effective coordination among tourism stakeholders, which affects the overall performance and development of the tourism sector (Rizal & Asokan, 2013; Borthakur, 2024).

This paper endeavours to quantify the impact of domestic and foreign tourist visitors on the per capita Net State Domestic Product of the north-eastern states of India.

Literature Review

The association between per capita Net State Domestic Product (NSDP) and the tourism industry is a topic of significant interest in economic research. Various studies have explored the correlation between economic growth, often measured by GDP per capita, and tourism activities, revealing complex interactions that vary by region and economic context. Correlation Between Economic Growth and Tourism can be described as: -

Tourism-Led Growth Hypothesis: Several studies support the tourism-led growth hypothesis, suggesting that tourism can drive economic growth. For instance, research on the MERCOSUR countries indicates a cointegrated relationship between real per capita GDP and tourism expenditure, causality from tourism to economic growth in the long run (Brida et al., 2015). Similarly, a study on the Caribbean countries found bidirectional causality between tourism and economic growth, indicating that both influence each other in the short and long run (Apergis & Payne, 2012).

Bidirectional Relationships: The worldwide study of 179 countries supports a bidirectional causality between tourism and economic growth, suggesting that increased tourism activities can lead to higher per capita GDP and vice versa (Risso, 2018). This

feedback loop is also observed in South Asian economies, where a bidirectional causal relationship exists between GDP per capita and tourism (Paudel et al., 2023).

Regional Variations: Tourism's impact on economic growth can vary significantly across regions. For example, a short-run unidirectional causal relationship between international tourism receipts and GDP is observed in Romania. In contrast, a bidirectional relationship exists between GDP and international tourist arrivals (Badulescu et al., 2020). Economic growth has a significant influence on the tourism sector in Algeria, supporting the economic-driven tourism growth hypothesis (Hassoun et al., 2021).

Macroeconomic Determinants: The influence of macroeconomic variables on tourism demand is also notable. An empirical analysis reveals that an increase in the world's GDP per capita stimulates tourism demand, suggesting a strong correlation between economic prosperity and tourism activities (Martins et al., 2017).

The findings from these studies suggest that the relationship between per capita NSDP and the tourism industry is complex and influenced by various factors, including regional economic conditions and macroeconomic variables. Policymakers can leverage these insights to devise strategies that harness tourism as a catalyst for economic growth while also considering the unique economic contexts of their regions. The bidirectional nature of the relationship often implies that investments in tourism infrastructure and marketing can yield significant returns in terms of economic development, and vice versa. In summary, the literature indicates a generally positive correlation between per capita economic measures and tourism, with the nature of this relationship varying by region and economic context. This underscores the significance of tailored policy approaches to maximise tourism's economic benefits.

Objectives of the Study

To quantify the impact of the number of domestic and foreign tourist visitors on the per capita net State Domestic Product of the north-eastern states of India.

Data collection

The whole analysis has been carried out based on secondary data. Two sources have been utilised to collect the secondary data: Indian Tourism Statistics, published by the Ministry of Tourism, Government of India, and the Databank of North Eastern Development Finance Corporation Ltd (NEDFi). The number of domestic and foreign tourists has been obtained from Indian tourism statistics. The details on per capita net State Domestic Product at Current Prices have been collected from the NEDFi database. All the data were collected from eight states in northeastern India from 2013 to 2022.

Research Methodology

The analysis depends on a panel data regression model. First, an ordinary least squares model was constructed, and then, based on relevant hypothesis testing, a correct panel data regression model was selected.

- 1) **OLS model:** A simple linear regression aims to forecast the value of a dependent variable based on an independent variable. The more substantial the linear relationship between the independent and dependent variables, the more precise the prediction. This goes along with the fact that the more significant the proportion of the dependent variable's variance that the independent variable can explain, the more accurate the prediction. Undisguisedly, the relationship between the variables can be exhibited in a scatter plot. The more prominent the linear relationship between the dependent and independent variables, the better the data points represent a straight line.

The following equation can describe the regression line:

$$\hat{y} = bx + a + \epsilon$$

Here, $\hat{y}$ is the estimated dependent variable

b is the gradient of the straight line

x is the independent variable

a is the point of intersection with the y-axis

ϵ is the residual or error parameter

The regression coefficient can have different signs, which can be elucidated as follows

- $b > 0$: positive correlation between x and y (the greater x , the greater y)
- $b < 0$: negative correlation between x and y (the greater x , the smaller y)
- $b = 0$: There is no correlation between x and y

- 2) **F test for individual effects:** Here, we have compared the fixed-effect panel regression model with the OLS model to decide which is better under the null hypothesis, i.e., OLS is better than the fixed-effect model. The F-test has been applied to test individual and/or time effects by comparing the within and pooling models.

The test statistic can be estimated as:

$$F = \frac{RSS_R - RSS_{UR}/(I - 1)}{RSS_{UR}/(N - I - K)}$$

Where RSS_R is the Residual Sum of Squares of the Restricted Model (Pooled OLS), RSS_{UR} is the Residual Sum of Squares of the Unrestricted Model (Fixed Effects), K is a number of parameters in Fixed Effects, excluding the constant, N is the total number of observations, and I is the total number of cross-sections or cross-sectional units.

- 3) **Hausman test:** The Hausman test establishes whether a fixed or random effects model is more appropriate in a panel data analysis. The null hypothesis articulates that the random effects model is appropriate, meaning the individual effects (or intercepts) are not correlated with the explanatory variables. The alternative hypothesis argues that the fixed effects model is more appropriate, meaning the individual effects are correlated with the explanatory variables, leading to a biased random effects estimator.

The statistic can be estimated as:

$$H = (\tilde{\beta}_1 - \tilde{\beta}_0)' [\text{var}(\tilde{\beta}_0) - \text{var}(\tilde{\beta}_1)]^+ (\tilde{\beta}_1 - \tilde{\beta}_0)$$

Where $^+$ stands for pseudo-inverse, $\tilde{\beta}_0$ refers to the fixed effects estimates, and $\tilde{\beta}_1$ is the random effects estimates

The H statistic is distributed as χ^2 as follows:

$$H \sim \chi^2_\nu$$

where ν = degrees of freedom = $\rho[\text{var}(\tilde{\beta}_0) - \text{var}(\tilde{\beta}_1)]$ and ρ is the rank of the matrix

4) **Testing time-fixed effects:** Testing for time-fixed effects involves evaluating whether including dummy variables for each time period significantly improves the model's fit.

Controlling for constant variables across entities that vary over time can be done by including time-fixed effects. If there are only time-fixed effects, the fixed effects regression model becomes

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \delta_2 B_{2t} + \dots + \delta_T B_{Tt} + u_{it},$$

where only $T-1$ dummies are included (B_1 is omitted) since the model includes an intercept. This model eliminates omitted variable bias caused by excluding unobserved variables that evolve over time but are constant across entities.

In some applications, including entity and time-fixed effects, is meaningful. The entity and time-fixed effects model is

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \gamma_2 D_{2i} + \dots + \gamma_n D_{Ti} + \delta_2 B_{2t} + \dots + \delta_T B_{Tt} + u_{it}$$

5) **Breusch-Pagan Lagrange Multiplier for random effects.:** Breusch-Pagan Lagrange Multiplier for random effects helps to choose between a random effects' regression and a simple OLS regression. The null hypothesis in the LM test tells those variances across entities is zero. This is, no significant difference across units (i.e., no panel effect).

The null hypothesis can be stated as:

$$H_0: \sigma_\varepsilon^2 = 0, \text{ (i.e. random effects are insignificant)}$$

The test statistics can be estimated as:

$$LM = \frac{IT}{2(T-1)} \cdot \left[\frac{\sum_{i=1}^I (\sum_{t=1}^T \hat{\mu}_{it})^2}{\sum_{i=1}^I \sum_{t=1}^T \hat{\mu}_{it}^2} - 1 \right]$$

where, T is the number of time periods, and I is the number of cross-sectional units.

Analysis and interpretation

As stated in the research methodology, the analysis begins with constructing an OLS model. Here, the names of the variables have been renamed as: -

- 1) Domestic Tourist Visits (V1)
- 2) Foreign Tourist Visits (V2)
- 3) Per Capita Net State Domestic Product at Current Prices (V3)

Residuals:					
Min	1Q	Median	3Q	Max	
-185388	-45141	-18517	24654	294930	
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	110000.00	11480.00	9.59	0.00	***
V1	-0.01	0.01	-1.52	0.13	
V2	1.24	0.32	3.87	0.00	***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Residual standard error: 80800 on 77 degrees of freedom					
Multiple R-squared: 0.1713, Adjusted R-squared: 0.1497					
F-statistic: 7.956 on 2 and 77 DF, p-value: 0.0007231					

Table 1

Table 1 is the output of the OLS model, where Per Capita Net State Domestic Product at Current Prices is the dependent variable, and Domestic Tourist Visits and Foreign Tourist Visits are the independent variables. Along with the OLS model, several other panel data regression models have been constructed: the fixed effect model (Table 2), the random effect model (Table 3), the Time-fixed effect model (Table 4), and the pooling model (Table 5).

Oneway (individual) effect Within the Model				
Call:				
plm (formula = V3 ~ V1 + V2, data = data, model = "within", index = c("State", "Year"))				
Balanced Panel: n = 8, T = 10, N = 80				
Residuals:				
Min.	1st Qu.	Median	3rd Qu.	Max.
-135220.9	-21553.8	-2962.6	25917.6	150321.8
Coefficients:				
	Estimate	Std. Error	t-value	Pr(> t)
V1	0.002178	0.007081	0.3075	0.7594
V2	0.122169	0.257998	0.4735	0.6373
Total Sum of Squares: 1.498e+11				
Residual Sum of Squares: 1.4895e+11				
R-Squared: 0.0056685				
Adj. R-Squared: -0.12217				
F-statistic: 0.199528 on 2 and 70 DF, p-value: 0.81958				

Table 2

Oneway (individual) effect Random Effect Model					
(Swamy Arora's transformation)					
Call:					
plm(formula = V3 ~ V1 + V2, data = data, model = "random", index = c ("State", "Year"))					
Balanced Panel: n = 8, T = 10, N = 80					
Effects:					
	var	std.dev	Share		
idiosyncratic	2128000000.00	46130.00	0.29		
individual	5236000000.00	72360.00	0.71		
theta: 0.8024					
Residuals:					
Min.	1st Qu.	Median	3rd Qu.	Max.	
-98172	-23802	-10699	20133	185972	
Coefficients:					
	Estimate	Std. Error	z-value	Pr(> z)	
(Intercept)	120490.00000000	27153.00000000	4.43740000	0.00000911	***
V1	0.00038035	0.00660090	0.05760000	0.95400000	
V2	0.21115000	0.25458000	0.82940000	0.40690000	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Total Sum of Squares: 1.6764e+11					
Residual Sum of Squares: 1.6604e+11					
R-Squared: 0.0095333					
Adj. R-Squared: -0.016193					
Chisq: 0.741132 on 2 DF, p-value: 0.69034					

Table 3

Oneway (individual) effect Within the Model				
Call:				
plm (formula = V3 ~ V1 + V2 + factor (Year), data = data, model = "within", index = c ("State", "Year"))				
Balanced Panel: n = 8, T = 10, N = 80				
Residuals:				
Min.	1st Qu.	Median	3rd Qu.	Max.
-83713.39	-10742.97	-349.13	11676.04	96844.78

Coefficients:					
	Estimate	Std. Error	t-value	Pr(> t)	
V1	0.00527	0.00521	1.01070	0.31615	
V2	0.15168	0.20242	0.74930	0.45654	
factor (Year) 2014	8914.70000	15012.00000	0.59380	0.55481	
factor (Year) 2015	19324.00000	15032.00000	1.28560	0.20345	
factor (Year) 2016	28986.00000	15061.00000	1.92460	0.05894	.
factor (Year) 2017	38049.00000	15238.00000	2.49690	0.01524	*
factor (Year) 2018	55963.00000	15653.00000	3.57510	0.00069	***
factor (Year) 2019	64653.00000	16694.00000	3.87280	0.00027	***
factor (Year) 2020	92588.00000	15313.00000	6.04640	0.00000	***
factor (Year) 2021	88568.00000	15319.00000	5.78140	0.00000	***
factor (Year) 2022	100650.00000	15365.00000	6.55090	0.00000	***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Total Sum of Squares: 1.498e+11					
Residual Sum of Squares: 5.4806e+10					
R-Squared: 0.63413					
Adj. R-Squared: 0.52617					
F-statistic: 9.61139 on 11 and 61 DF, p-value: 9.0289e-10					

Table 4

Pooling Model					
plm(formula = V3 ~ V1 + V2, data = data, model = "pooling", index = c("State", "Year"))					
Balanced Panel: n = 8, T = 10, N = 80					
Residuals:					
Min.	1st Qu.	Median	3rd Qu.	Max.	
-185388	-45141	-18517	24654	294930	
Coefficients:					
	Estimate	Std. Error	t-value	Pr(> t)	
(Intercept)	110040.0000000	11477.0000000	9.5876000	0.0000000	***
V1	-0.0082462	0.0054105	-1.5241000	0.1315745	
V2	1.2433000	0.3215200	3.8670000	0.0002288	***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Total Sum of Squares: 6.0661e+11					
Residual Sum of Squares: 5.0273e+11					
R-Squared: 0.17126					
Adj. R-Squared: 0.14973					
F-statistic: 7.9558 on 2 and 77 DF, p-value: 0.0007231					

Table 5

Several relevant hypothesis tests have been carried out along with the constructed models to pick the correct model. The following hypothesis tests have been executed:

pFtest(fixed, fit_OLS)
F test for individual effects
data: V3 ~ V1 + V2
F = 23.752, df1 = 7, df2 = 70, p-value = 3.405e-16
alternative hypothesis: Significant effects

Table 6

Table 6 shows the F-test for individual effects between the fixed effect and OLS model.

Hausman Test
data: V3 ~ V1 + V2
chisq = 4.6014, df = 2, p-value = 0.1002
Alternative hypothesis: One model is inconsistent

Table 9

Table 9 shows the Breusch-Pagan Lagrange Multiplier test between the pooling and OLS models.

Considering hypothesis testing from Table 6 to Table 9 and the adjusted R2 of the random effect model, the time-fixed effect model can be chosen.

Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
85998	-6975	14414	25962	86246	45870	250050	36319

Table 10

Table 10 is constant for each state from the time-fixed model (Table 4), reflecting that each state has a unique starting point in the modelled relationship.

Findings and Conclusions of the Study

So, the time-fixed effect model has been chosen over other models, as explained in the analysis and interpretation section of the paper. Considering Tables 4 and 10, it can be concluded that: -

- From 2013 to 2022, domestic and foreign visitors positively impacted the Per Capita Net State Domestic Product at the Current Prices of the north-eastern Indian states.
- Compared to domestic and foreign visitors,

Table 7

Table 7 shows the Hausman test for determining whether a random-effects or fixed-effects model is more suitable in a panel data analysis.

pFtest(fixed.time, fixed)
F test for individual effects
data: V3 ~ V1 + V2 + factor(Year)
F = 11.642, df1 = 9, df2 = 61, p-value = 2.112e-10
alternative hypothesis: Significant effects

Table 8

Table 8 shows the F-test for individual effects between the time-fixed and fixed-effect models.

plmtest(pool, type=c("bp"))
Lagrange Multiplier Test - (Breusch-Pagan)
data: V3 ~ V1 + V2
chisq = 121.33, df = 1, p-value < 2.2e-16
alternative hypothesis: Significant effects

foreign visitors have a more positive impact on per capita NSDP than domestic visitors from 2013 to 2022 for the north-eastern Indian states.

- In estimating the visitors-driven per capita NSDP upliftment, Sikkim, Mizoram, and Arunachal Pradesh are better positioned. However, in this context, Assam will be considered the most vulnerable of all north-eastern states from 2023 to 2022.
- In quantifying the visitors-driven per capita NSDP upliftment, the time impact has increased gradually from 2014 to 2022 in all north-eastern states.

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Green Tourism in the Make in India Initiative

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Abstract

Sustainability is a matter of significant concern both globally and locally. The Ministry of Tourism envisions making India a preferred destination for tourism worldwide by promoting sustainable tourism, thereby enhancing the competitiveness of the Indian Tourism Industry. As tourism is increasingly recognized as a source of job creation, infrastructure development, market expansion for traders and manufacturers, and the promotion of transportation, it fosters harmonious relationships among various countries. This underscores the necessity to examine the key aspects of tourism that contribute to a nation's growth and economic development. Sustainable tourism has been characterized by numerous scholars and experts in various terms such as Responsible Tourism, Eco-Tourism, and Geo-Tourism. Achieving sustainable tourism involves the protection of the environment, conservation of wildlife, and preservation of cultural heritage and traditional values. India possesses immense potential for tourism development, boasting a rich history that includes ancient monuments, temples, churches, art and culture, mountains, beaches, wildlife, medical tourism, and much more. The history and background of destinations, infrastructure development, hospitality, ease of access, and financial considerations are among the factors that tourists take into account when planning their visits. The growth and advancement of tourism in India are contingent upon sustainability.

Keywords: Make in India, Tourism, Sustainable, Environment, Stakeholders.

Introduction

Tourism is not only the largest but also the fastest-

growing industry globally. In India, tourism contributes 6.8% to the GDP and ranks as the third largest source of foreign exchange for the nation. This sector is labor-intensive, offering employment opportunities primarily to low and semi-skilled workers; according to the UNCTAD and FICCI Report of 2010, women make up 70% of the workforce, with 50% being under the age of 25. Tourism is an inclusive and sustainable sector that fosters the growth of Micro, Small, and Medium Enterprises. It plays a vital role in revitalizing and preserving cultural heritage and ethnic art forms. Protecting and conserving the biodiversity of tourist destinations is crucial for a country's development. To address this challenge, it is imperative to promote sustainable tourism practices. The UN World Commission on Environment and Development introduced the concept of sustainability in the "Brundtland report" in 1987, defining "sustainable development" as development that fulfills present needs without compromising the ability of future generations to meet their own needs (UNEP, 1987). The World Tourism Organization (UNWTO) describes sustainable tourism as tourism that fully considers its current and future economic, social, and environmental impacts, while addressing the needs of visitors, the industry, the environment, and host communities. Ensuring sustainability is vital across all forms of tourism to establish India as an ideal tourist destination worldwide. It is essential to maintain environmental sustainability as a fundamental requirement for tourism development.

Objectives of Study

- To examine the significance of tourism within the Make in India initiative through the lens of sustainability.

- To identify the challenges and strategic measures necessary for effective implementation of initiatives.
- To emphasize the new initiatives launched by the Ministry of Tourism, Government of India.
- To offer recommendations and suggestions for policymakers and institutional leaders.

Types of Tourism



- **Cultural Tourism:** Cultural tourism encompasses the exploration of art and architecture, local customs, fairs and festivals, forts and monuments, as well as theatre and museums, which draw tourists from around the globe seeking knowledge and information about the destination.
- **Adventure Tourism:** As stated by the Adventure Travel Trade Association, which is based in the United States, adventure travel can encompass any tourist activity that includes at least two of the following three elements: a physical activity, a cultural exchange or interaction, and engagement with nature.
- **Rural Tourism:** Rural tourism emphasizes the rural way of life. Numerous rural villages are promoting this form of tourism as many international visitors are eager to learn about the customs and traditions of these communities. This sector of the tourism industry has experienced significant growth over the past ten years, making rural tourism an ideal vacation

spot for travellers.

- **Religious Tourism:** Religious tourism, often known as faith tourism, represents a category of travel in which individuals or groups embark on journeys for pilgrimage, missionary activities, or recreational purposes.
- **Medical Tourism:** Medical tourism, also known as health tourism, refers to the act of individuals traveling to a foreign country to receive medical care in that location.
- **Business Tourism:** Business tourism refers to the act of traveling from one country to another for the purpose of attending business meetings, incentive trips, conferences, seminars, and exhibitions.

The Importance of Sustainable Tourism in the Make in India Initiative

It offers numerous investment opportunities for tour operators and travel agencies to meet the diverse interests and purposes of tourists. It creates a ready market for rural tourism, benefiting rural villagers and households; women and other semi-skilled workers can market their handmade products, including rural art and crafts, textiles and handlooms, jewellery, and nature-made items that reflect local culture and traditions to tourists. Additionally, it presents opportunities for investment in hotels, restaurants, resorts, villas, heritage hotels, convention centres, gardens, cinema halls, healthcare centres and hospitals, beauty clinics, motels, and similar establishments. Moreover, it promotes the preservation of the environment, particularly our Himalayas, which serve as a revenue-generating hub due to their breathtaking scenery of towering mountains, lush green forests, and wildlife that attracts millions of tourists from around the globe each year. India's extensive and stunning coastline, along with its unspoiled islands, makes it an ideal destination for cruise tourists. The availability of world-class medical facilities also fosters and enhances medical tourism in India. Sustainable tourism is crucial to accommodate the influx of foreign tourists to India, which saw 6.97 million foreign tourist arrivals in 2013, reflecting an annual growth rate of 5.9% compared to the previous year, according to the Ministry of Tourism, Government of India.

Steps to Achieve Sustainability

- **Responsible Tourism:** To maintain the long-term attractiveness of a destination, a responsible tourism strategy is essential. It is crucial for the preservation of natural resources, heritage sites, temples, and, most importantly, human beings.
- **Restore and Preserve Culture and Ethnic Art Forms:** The restoration of culture enhances the cultural values of society and offers significant opportunities for research and innovation.
- **Checks Migration to Urban Areas:** Analyzing the movement of populations across various regions of the country for social, economic, or political reasons aids in a better understanding of societal dynamics.
- **Development of Tourism Infrastructure:** Infrastructure is vital for the advancement of tourism. Developing infrastructure in tourist destinations is necessary for sustainable tourism.
- **Promotion and Marketing of Tourist Destinations Around the World:** Marketing serves as a crucial tool for promoting tourism destinations. Effective marketing of these destinations attracts potential travelers and increases visitor numbers year after year.
- **Skill Development:** Skill development and training programs organized by central and state governments, as well as international organizations, provide substantial support for tourism development.
- **International Cooperation:** To foster sustainable and responsible tourism development models and to share best practices.

New Initiatives Launched by the Ministry of Tourism during the Observance of Good Governance Day on December 26, 2014:

- **Swachh Bharat Swachh Smarak E-Posters** - Inspired by the "Swachh Bharat" movement, this initiative aims to promote a cleaner India while safeguarding the integrity of our national heritage monuments. To support this effort, the Ministry of Tourism has introduced a special poster featuring a message from the Prime Minister, urging both tourists and citizens to actively participate in maintaining cleanliness in

their surroundings and contribute to the vision of a Swachh Bharat, Swachh Smarak.

- **Welcome Cards** - India is globally known for its warm hospitality. To enhance this experience, the Ministry of Tourism has introduced special welcome cards that will be distributed to all tourists arriving at our nine international airports where the Tourist Visa on Arrival with Electronic Travel Authorization is available. These cards will provide information about the local India Tourism office, including both online and offline contact details, which tourists can utilize for any inquiries. The primary objective of this initiative is to ensure a seamless exploration of the country.
- **Incredible India Calendar 2015** - The highly praised and anticipated "Incredible India" Calendar 2015 revisits historical moments and highlights some of the nation's most remarkable architectural achievements as they appeared in the past. The striking images narrate the story of our rich heritage and serve as a reminder of our duty to preserve it for future generations.
- **Launch of Booklet on "Badhte Kadam" A Hunar Se Rozgar Tak (HSRT) Initiative** - To facilitate greater involvement of the private sector in the HSRT initiative, thereby expanding the program's outreach and effectiveness, it has been decided to permit the following agencies/organizations to implement the program: (i) Industrial units, industry associations, and professional/skill development agencies with established credentials; and (ii) Hospitality Institutes recognized by the AICTE/National Skill Development Authority/State Governments/Union Territory Administrations.
- **Mega Project – Destination Development of Gwalior.** Gwalior is rich in natural resources and forests; however, it lacks the necessary tourism facilities to unlock new opportunities for tourism in the state and to support local artisans in the sustainable enhancement of their skills for their livelihoods. Consequently, the State Government has proposed a Mega Destination Development Plan aimed at promoting tourism in the least developed areas. The project, with an estimated budget of Rs. 24.93 crore, has been approved by the Ministry of Tourism.

Initiatives of Ministry of Culture

- **Launching of Web-based E-Ticketing:** To enhance visitor access to monuments, the E-ticketing facility has been introduced. This service will be available at select monuments that attract a significant number of tourists. Initially, E-ticketing for the Taj Mahal in Agra and Humayun's Tomb in New Delhi has been operational since 25.12.2014. These monuments will be equipped with essential tourist amenities, including wi-fi, security, signage, encroachment-free zones, interpretation centers featuring short films about the significance of the monuments, & signboards promoting the Swachh Bharat Abhiyan with the slogan 'Swachh Smarak: Swachh Bharat'.
- **Braille Book on Delhi Monuments:** The Archaeological Survey of India has created a Braille Book detailing the monuments of Delhi. This publication will greatly aid visually impaired individuals in learning about the monuments in Delhi.

Concluding Remarks

Sustainable tourism can be realized through responsible tourism practices. The sustainability of tourism relies on the actions of tourists and local communities in safeguarding the environment, forests, wildlife, beaches, temples, and archaeological sites. The primary goal of sustainability is to fulfill the expectations of future travelers and communities through sustainable initiatives such as effective management of natural resources, conducting workshops in both rural and urban settings on the advantages of sustainable tourism, and training tourism officials and professionals in their implementation, alongside gathering data and information regarding the environmental, economic, and social impacts at tourist destinations.

The Road Map Ahead

- Sustainable tourism is not merely a specific type of tourism; instead, all varieties of tourism should strive to become more sustainable.
- The tourism industry offers economic and social benefits to society, fostering the development of social capital and community growth through environmental conservation. Consequently, it aids in maintaining strong and amicable relations with other nations.

- Tourism must be made easily accessible for travelers to fully realize its potential.
- Regular training should be offered to accommodation providers to enhance service quality in line with tourist expectations.
- Effective promotion and marketing of regional products, such as agricultural and artisan goods, are essential for creating local value.
- Climate change is accredited as a vital global challenge, with considerable effects on tourism.
- Addressing poverty within the context of Indian tourism is crucial for uplifting marginalized communities and integrating them into the mainstream.
- Quality management is a critical issue that requires attention.
- Enhancements in transportation conditions are vital for both domestic and international tourists.
- The success of the tourism industry should be encouraged, but not at the expense of quality of life.
- The interests of various stakeholder groups must be safeguarded when formulating policies and programs for sustainable tourism.
- Sustainability is a collective responsibility for all individuals involved in tourism, necessitating an understanding of the environmental impact of their actions.
- There is an obligation on the government to create an environment conducive to achieving sustainability effectively.

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Digital Transformation of Odisha's Government and Government Aided Secondary Schools

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Abstract

In the era of digitalization, the literacy rate is rapidly improving in Odisha. The Government of Odisha and the Government of India are actively participating in digital transformation in schools. There are different initiatives like: PM e-VIDYA, 5T High School Transformation Programme, Mo School Campaign and many other creative educational programmes are introduced to strengthen the educational foundation of students. These programmes are converting our schools into e-schools which consists of developed curriculum, smart class rooms, digital libraries, advanced sports facilities etc. in the partnership with different organizations like: University of California, Intel and Berkeley University. In Puri Zila, Odisha, 8,800 high schools are the part of 5T and are utilizing modern facilities like: e-class rooms, smart libraries, automated lab facilities, increased sports facilities and well-maintained campuses. Similarly, in Kendrapada, the Government-aided secondary schools are equipped with smart classrooms. The main objective of the study is to focus on digital transformation of schools by the Odisha Government. The study also highlights the challenges faced by digitalized schools and suggests strategies to curb the challenges. This is a complete review paper and data is collected from secondary sources. The methodology of the study is qualitative. The study concludes with some practical suggestions and enhances the scope of future research.

Keywords: Digital Transformation, Smart Classrooms, Challenges and Opportunities.

Introduction

The Government has taken different initiatives to transform the traditional schools to 5T High Schools. The blackboard system is converted in

to digital system and classrooms are regarded as Smart Classrooms. This study attracts the readers towards the temple town schools "Puri Zila School" which is a very old government undertaking school and acts as a part of transformation under 5T approach. In Puri Zila many schools are being the part of 5T transformation programme which consists of Teamwork, Technology, Transparency, Transformation and Time. They are taking advantage of e-libraries, smart classrooms, modern lab facilities, sports facilities etc. The school constitutes 44 teachers, 1650 students, 18 smart classrooms, 2 science labs and 12 sports training facilities. Similarly, "Kushavadra Government High School" founded in 1973 and situated in district of Khordha has been benefited by 5T initiatives like: smart classrooms, collaborative learning with digital education. This school is taking initiatives to build young leaders from less privilege students and teachers encourage them to participate in different activities to enhance their skills and knowledge (Balakrishnan, 2024).

Review of Literature

According to Mohanty (2023), there are 8,679 Government aided high schools and total 67,961 Government schools in Odisha. The Secretary of Odisha School and Mass Education, Aswathy S, has stated that 1.07 million students are benefited by 5T initiatives. It has changed the scenario of classrooms and the pedagogy of teaching. The traditional method of blackboard-chalk system is converted into smartboard education system. The students are benefited with smart class rooms, digital library, well-equipped laboratory and platform of digital games and sports along with adequate drinking water, electricity and sanitation facilities. Mishra and Panda (2022) have studied on impact of e-Education on society.

5T has brought improved infrastructure, extracurricular activities and advanced teaching methodology. The implementation of 5T has enhanced scope for equal pattern of education for all students irrespective of gender, race, religion and appearance. 5T aims towards inclusiveness of all sections and provide them scope of teaching which builds a path for growth and development in society. Mishra (2025), has focused on importance of 5T for education sector which has brought unique revolution in schools. The author has also discussed on challenges like: motivating students, trained teachers, adaptability of technology, teamwork and provision of conducive environment. The author has collected data from fifty 5T schools from five blocks of Cuttack to test the implementation of these programs with certain challenges and concluded with about twenty schools have e-library, 30 schools have proper sanitary facilities etc.

According to Singha (2024), the transformation of the Government schools through 5T has changed the scenario of education sectors. By introducing this scheme there is significant increase in the rate of admission of students along with increase in shifting of students from private schools to the Government schools. The improved infrastructural facilities provided by 5T to 8,800 high schools have attracted large number of students towards the Government schools. According to the author there is an increase in 24% students in “Kushabhadra Government High School” at Khudra, due to implementation of 5T. Dammala (2023), has studied on Odisha’s 5T approach which consists of teamwork, technology, transparency, transformation and time. As a result, there is a shift of students from private schools to Government schools. The author has taken example of the Government school “Lady Lewis Girls High School” in Sambalpur has witnessed 50% increase in admission in last two years. According to Prusty (2023), after pandemic, the state of Odisha has introduced different initiatives under 5T approach by enhancing study atmosphere, infrastructural development and use of modern technology in Government schools.

The high school transformation programme has followed teamwork, transparency, technology, transformation and time under 5T approach. It aims to reshape traditional schools and transfer those into

smart schools. It seeks to make teachers as leaders or mentors and enhance academic progress along with infrastructural development. Majhi et al. (2023), have studied on objectives of 5T which is transformation of education system in Odisha. It will bring excellence in academics, enhance quality of teaching and focus on transparency and accountability. Behera & Malik (2024) have focused on five core principles “5T”: Transparency, Teamwork, Technology and Time. They have discussed on inclusive education which enhance socio-economic growth of Odisha.

Objectives

- To focus on importance of 5T approach in Government and Government aided schools in Odisha.
- To suggest measures to curb the challenges in the path of implementation of 5T.

Methodology

This small piece of study is completely a review one. Data is collected from secondary sources like: journals, internet, newspaper etc. It is qualitative research.

Importance of 5T with Examples

The 5T High School Program has launched in 2021 to transform the Government and Government aided high schools. It basically focuses on inclusive education, digital learning in smart classrooms with other infrastructural facilities. The transformation effort of the Government towards Government aided schools which are funded by the Government and managed privately are now upgrading their learning facilities with digital technologies. We can take the example of transformation of Government schools of Cuttack, Puri, Kendrapada and across Odisha are enjoying smart classroom, digital lab, e-library and other learning resources. In various blocks including Cuttack Sadar, Salipur, Kantapada and Nischitakoili are gaining advantages of revolutionary teaching in education sector. Similarly, Puri Zilla School has also gained digital learning facilities.

The 5T initiatives in Odisha is designed to foster conducive learning environment to both Government & Government-aided secondary schools. 5T consists of Teamwork with Transparency, Transformation with Technology and Timed decision-making.

Under “Mo school Abhiyan” in Transformation programme schools focus on better ambience, smart classroom, e-library and proper sanitation (Mishra & Panda, 2022). The 5T education system in Odisha for Government and Government aided schools aims to enhance learning outcomes, improve infrastructural facilities and accountability of education system. This modern education system creates a culture of learning environment and fosters education system of Odisha. Different initiatives taken by 5T in Odisha for the Government and Government aided schools are very helpful and innovative. By focusing on the enhancement of quality of education, the learning outcomes will be developed.

The digital learning platform creates inclusiveness of students’ regardless gender, colour, ability, religion etc. Teachers use innovative methods of teaching which improves teachers teaching capacity. Similarly, students access digital learning resources and their ability will also be enhanced. The collaborative learning techniques are helpful for both teachers and students and makes the classroom interesting. As a result, there is an increase in the participation of students in academic as well as extra-curricular and co-curricular activities like: arts, sports and cultural programs. The 5T approach has changed the face of education system of Odisha. In one-way 5T helps in implementation of digital tools and creates smart classrooms for education and in other way it reduces dropout rates of students (Balakrishnan, 2024).

Challenges in the Path of 5T Implementation

There are several challenges in the path of implementation of 5T in the Government and Government aided schools of Odisha. In spite of robust infrastructure and smart classrooms several school face acute shortages of teachers which leads to poor learning of students in Odisha. Similarly, after retirement of teachers no further appointment is created for a long period of time which is a big hindrance in the path of 5T initiative. For example: a school in Balasore has transformed under 5T initiative s consists of 228 students and lack of trained teachers. We can take another example: in Kalahandi the “Indravati Project High School” has faced the high shortage of trained teachers (Karim, 2024). Another challenge is provision of infrastructural facilities and digital divide.

Some of the smart classrooms in the Government and Government aided schools have lack of infrastructural facilities like: adequate computers in lab, problem of power operation, connectivity of internet, proper sanitation etc. along with trained personnel to run the devices. In rural areas digital divide is not accessible always and they deprive up online resources and study materials. The computers, smart boards and other electronic devices remain unused in rural schools. For example, many schools of Keonjhar District computers and smart boards remain unused due to frequent power cut problems (Baliarsingh, 2024). Another concern is data privacy and security in digital platform. Ensuring uniformity in application of principles of 5T across all schools, basically rural areas remain a big challenge. A vital issue is implementation of 5T initiatives properly due to constraint of funds, corruption and negligence. Sometimes lack of transparency creates irregularities in implementation (Prusty,2023).

Strategies to Curb Challenges

To address issues in the path of implementation of 5T there are certain strategies. First of all, addressing infrastructural problems and technical issues are very vital. Another strategy is to provide training to teachers to foster digital teaching. Promoting accountability and transparency easily dissolve issues faced by 5T implementation and regulation. At the same time, it is also important to create awareness towards education and wellbeing. Infrastructure and technical support play very vital role for the successful implementation of 5T approach. For example, in Odisha after makeover of basic infrastructural development the transformative winds increase in enrolment of 24% students in the Government schools (Singha, 2024). Adequate computers, projectors, internet facility and power support should be provided timely.

The online learning path should be user friendly and comfortable for students as they can easily access. Similarly, focus must be given to trained and knowledgeable teachers who can provide an easy platform for learners. Therefore, fostering training of teachers and enhancing digital literacy help to curb the challenges in the way of implementation of 5T initiative. The blended teaching and learning approach with digital tools in smart class rooms

demand heavy investment, but to make Odisha digitally literate is very important for the socio-economic development of the state (Nag, et al., 2023). The 5T approach will be successful by establishing accountability and transparency along with clear communication and feedback mechanism across all stakeholders like: teachers, students, parents, administrators and the overall society. The awareness regarding education and digital education should be created by both teachers and the Government.

Conclusion

This small piece of study briefly focuses on 5T approaches followed by The Government and Government aided schools. It throws light on significance of 5T, challenges while implementing the initiatives and strategies to curb those challenges. No doubt, it is quite a difficult task to create awareness in rural students, but it will be helpful for the economic growth and social stability of the state. To make the successful implementation not only the Government but also all the participants engaged in the system like: teachers, students, technical operators and others should be accountable and monitor the progress in their respective fields. Trained teachers have to focus on feedback of students and develop innovative strategies of learning. Parent's feedback and their awareness towards inclusive education act as inputs of successful implementation of 5T initiatives. Hence, it is always important to prioritise individual learning as each student is unique and well-being of students. The future scope of 5T approach is to provide quality education at all levels from nursery schools-universities. 5T approaches act as weapons of educational development and reduce illiteracy and dropout rates.

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ABSTRACTS

Adopting Technology in Education: A Deep Dive into the Technology Acceptance Model

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Abstract

The integration of technology into education has significantly transformed teaching and learning environments, making it essential to understand the factors that drive educators and students to adopt new technologies. The Technology Acceptance Model (TAM), developed by Davis in 1989, provides a framework for examining how users come to accept and use technology. This article explores the core concepts of the TAM, its contributions to understanding technology adoption in educational settings, its limitations, and its application in modern educational contexts. By using a statistical model, we analyse data from recent studies on TAM's impact on education, shedding light on current adoption trends, and concluding with suggestions for enhancing future technology integration in educational systems.

Keywords: Technology Acceptance Model (TAM), Education, Integration, Impact, Adoption.

Digital Transformation in Indian Banking Sector: A Case Study of SBI

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Abstract

Digital transformation in banking refers to the integration of technology into the financial services sector to enhance efficiency, customer experiences, and adapt to the changing market. Digital banking, a key component of this transformation, allows customers to access banking services online, offering faster and more convenient services. The State Bank of India (SBI), for example, has moved from traditional physical banking to virtual banking, embracing digital technologies to remain competitive. SBI, founded in 1806 as the Bank of Calcutta, is the oldest commercial bank in India. As the country's largest public-sector bank, it plays a crucial role in the nation's trillion-dollar economy and serves a large population. This study focuses on SBI's shift from traditional banking to digital banking, highlighting the technologies and strategies used to enhance service delivery, improve efficiency, and meet customer demands. SBI's digital transformation includes mobile banking apps, digital wallets, online banking, and the use of emerging technologies like Artificial Intelligence (AI), blockchain, and data analytics. The bank has also modernised its infrastructure, improved cybersecurity, and developed a digital ecosystem to support India's growing digital economy. The study provides insights into SBI's journey and examines the advantages and challenges of virtual banking.

Keywords: Digital Transformation, Banking Sector, State Bank of India, Mobile Banking, Artificial Intelligence, Financial Inclusion, India.

Digital Transformation of Insurance: Exploring the Role of Digital Literacy and Insurtech for Inclusive Access in India

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Abstract

Aims: This study investigates the influence of digital literacy and Insurtech adoption on insurance inclusion in India. Specifically, it explores how technological awareness, digital engagement, and perceptions toward insurance technology affect individuals' access to, and participation in formal insurance services.

Sample: The study analyzed responses from a sample of 460 individuals across India. Participants were selected using a combination of stratified and purposive sampling to ensure representation across demographic segments and varying degrees of digital exposure.

Study Design: A quantitative cross-sectional research design was employed. The research framework integrated elements from the Technology Acceptance Model (TAM) and innovation diffusion theory to examine the relationship between digital literacy, insurtech adoption, and insurance inclusion. Data were collected via structured questionnaires, and analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the proposed hypotheses.

Place and Duration of Study: The research was

conducted in India, including both urban and rural regions. Data collection and analysis occurred over a period of six months, from July 2024 to December 2024.

Results: The findings reveal that digital literacy significantly enhances both the perceived ease of use and perceived usefulness of insurtech platforms, which in turn positively influence the adoption of insurtech solutions. Furthermore, insurtech adoption emerged as a key predictor of insurance inclusion. The study also highlights that digital literacy indirectly impacts insurance inclusion through its effect on insurtech adoption, confirming a mediating relationship.

Conclusion: Digital literacy plays a critical role in promoting insurance inclusion through its influence on insurtech adoption. As such, targeted initiatives to improve digital competence and trust in technological solutions are essential to increase insurance penetration in India. These insights offer valuable implications for policymakers, insurance providers, and tech developers seeking to bridge the protection gap in emerging markets.

Keywords: Digital Literacy, Technology Adoption, Insurtech, Insurance Inclusion, Financial Inclusion

The Impact of Information Technology on Security Risk Management in the Indian Digital Ecosystem: An Exploratory Study

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Abstract

In today's interconnected and data-driven world, the role of Information Technology (IT) in security risk management is both foundational and transformative. As organisations increasingly rely on digital infrastructure, the spectrum of security threats has broadened, encompassing everything from cyberattacks and data breaches to system failures and insider threats. Consequently, effective security risk management now heavily depends on robust IT frameworks that support the identification, assessment, mitigation, and monitoring of risks.

This paper explores how IT enhances each phase of the security risk management process. IT enables continuous risk identification through advanced tools such as intrusion detection systems, automated monitoring, and threat intelligence platforms. These technologies allow organisations to recognise vulnerabilities and emerging threats in real-time. Risk assessment is bolstered by the use of vulnerability scanners, simulation tools, and risk modelling software, which help quantify potential impacts and prioritise responses. IT also plays a crucial role in risk mitigation through the deployment of firewalls, antivirus solutions, access control systems, encryption technologies, and automated patch management.

In an increasingly digital world, the role of information technology (IT) in security risk management has become indispensable. This paper explores how IT contributes to the identification, assessment, mitigation, and monitoring of security risks in both public and private sector organisations. Emphasis is placed on the tools, techniques, and strategies employed through IT to enhance the security posture of organisations, while also considering the challenges and future directions in the field.

Keywords: Information Technology, Security Risk Management, Indian Digital Ecosystem, Information Security Framework, Government Cybersecurity Initiatives.

Sustainable Livelihoods through Biofloc Aquaculture: Empowering Women SHGs in Odisha

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Abstract

The Government of Odisha, in alignment with the national vision of Viksit Bharat @ 2047 and the state's Viksit Odisha @ 2036 roadmap, has introduced several innovative programs to foster inclusive development, particularly in rural and marginalised regions. One such forward-thinking intervention is the Biofloc Aquaculture Scheme, which aims to empower Women Self-Help Groups (WSHGs) through sustainable and income-generating aquaculture practices. This scheme is uniquely positioned at the intersection of technological innovation, women's economic empowerment, and grassroots entrepreneurship, offering a viable alternative livelihood option for rural women who often face limited access to land and capital.

This study investigates the operational effectiveness, socio-economic impact, and sustainability of the Biofloc Scheme as implemented among WSHGs in selected districts of Odisha. The research is rooted in the broader goal of understanding how decentralised, women-led aquaculture initiatives can address rural unemployment, enhance food security, and improve household-level income and agency. By focusing on the experiences of WSHGs, the study highlights how targeted state interventions can translate into measurable gains for women's participation in economic activities, thus aligning with the objectives of Sustainable Development Goal 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

A mixed-methods research design was employed for this study. Quantitative data were collected through structured interviews with 60 WSHGs operating Biofloc units across six districts. Variables such as income variation before and after the adoption of the scheme, training exposure, production output, and market access were assessed. Additionally, qualitative insights were gathered through focused

group discussions and field observations to capture nuanced experiences of group dynamics, gender roles, and institutional support. The collected data were analysed using descriptive statistics and thematic coding to derive trends and patterns.

The findings are encouraging. Over 78% of the groups reported an increase in income within the first year of operation, while 65% of the members indicated they had acquired new technical skills in fish farming. Additionally, 58% of the women participants acknowledged greater involvement in household decision-making and financial planning, suggesting a positive shift in gender norms and intra-household power dynamics. Despite these gains, challenges persist. High electricity costs, limited access to formal markets, and the need for ongoing technical handholding were cited as major hurdles. The study also found that peer-learning networks and convergence with other rural development schemes (such as Mission Shakti) could significantly enhance the success rate of such initiatives.

In conclusion, the Biofloc Aquaculture Scheme demonstrates substantial promise as a replicable and scalable model for rural women's empowerment in Odisha. The scheme not only diversifies livelihood sources but also contributes to social capital formation among WSHGs. For long-term success, it is recommended that the state government should focus on cluster-based implementation, energy subsidies, market integration, and continuous skill development. The study offers critical insights for policymakers, development agencies, and practitioners aiming to design inclusive and sustainable rural livelihood programs through the active engagement of women's collectives.

Keywords: Biofloc, Women Empowerment, Self-Help Groups, Aquaculture, Rural Livelihood.

Odisha Rising: Powering Viksit Odisha 2036, Shaping Viksit Bharat 2047

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Abstract

Odisha stands at a defining crossroads, poised to contribute substantially to India's grand vision of a Viksit Bharat by 2047, even as it pursues its own ambitious goal of becoming a Viksit Odisha by 2036. The journey of transformation the state has undertaken is undeniably remarkable, marked by significant achievements across sectors, yet still challenged by persistent disparities that call for concerted action from industry stakeholders, policymakers, and civil society alike. As Odisha aims to reach a \$500 billion economy by 2036, this article reflects on the progress made, the hurdles remaining, and the collaborative strategies essential for realizing a future of inclusive prosperity.

The recent Utkarsh Odisha: Make in Odisha Conclave 2025 showcased the state's immense potential as a hub for industry, startups, and innovation. The coastlines, rich cultural heritage, and natural beauty continue to bolster tourism, contributing significantly to the Gross State Domestic Product (GSDP). According to NFHS-5 (2019-21), Odisha's population of approximately 4.5 crore faces unique health and social challenges, yet the state remains resilient in its pursuit of inclusive growth. Despite tangible progress, Odisha faces formidable hurdles that could impede

its inclusive growth trajectory. Economic disparities remain stark—rural communities, particularly tribal and coastal populations, lag behind urban centres in access to quality healthcare, education, and infrastructure.

Addressing these multifaceted challenges requires a unified effort. Industry leaders must prioritize inclusive growth by investing in skill development and supporting women-led enterprises. Collaborations with educational institutions are vital to align curricula with emerging market needs, ensuring a skilled workforce ready for future industries. Furthermore, Corporate Social Responsibility (CSR) plays a pivotal role. It fosters inclusive development, especially in rural areas, by supporting initiatives in health, education, sanitation, and livelihood. Viksit Odisha by 2036 is not merely an aspirational goal but a tangible future within reach, one that demands collective effort, strategic planning, and unwavering commitment. When the state's potential is unlocked through inclusive policies, sustainable investments, and community participation, Odisha can serve as a model for other regions striving for balanced growth.

Keywords: Viksit Odisha, Viksit Bharat, Progress, Hurdles, Collaborative Strategies.

Shaping Classrooms of the Future: LRC – Led AR / VR at World Skill Centre

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Abstract

In alignment with national and regional development visions—Viksit Bharat @2047 and Viksit Odisha @2036—the integration of immersive technologies in education is emerging as a pivotal strategy for transforming learning outcomes. This paper presents a case study on how the Learning Resource Centre (LRC) at the World Skill Centre (WSC), Bhubaneswar, is pioneering the adoption of Augmented Reality (AR) and Virtual Reality (VR) technologies to shape classrooms of the future.

Purpose: The primary aim of this study is to explore the strategic role played by the LRC in driving the implementation of AR/VR tools in vocational and skill-based education. It investigates how library-led initiatives can catalyse digital innovation in teaching-learning environments and serve as a model for other institutions pursuing educational excellence within the framework of national growth missions.

Methodology: A qualitative case study approach was employed, involving in-depth interviews with key stakeholders including LRC staff, faculty members, technical trainers, and students at WSC. Observational visits and document analysis were also conducted to map the planning, implementation, and integration process of AR/VR within the instructional ecosystem. Secondary data sources included government policy documents and strategic frameworks such as NEP 2020 and the Skill India Mission.

Major Findings: The research highlights that the LRC at WSC has successfully positioned itself as a digital innovation hub by curating AR/VR content aligned with industry-relevant skills and curricula. Key success factors included cross-functional collaboration between the LRC, academic departments, and technology vendors, as well as a strong focus on user training and content contextualisation. Students reported increased engagement, better concept retention, and improved confidence in applying skills in simulated work environments. Faculty members acknowledged the LRC's leadership in guiding pedagogical integration and providing sustained technical support. Challenges included infrastructure constraints, content localisation needs, and resistance to initial adoption—all of which were mitigated through targeted workshops and phased implementation strategies.

This case demonstrates that libraries, especially Learning Resource Centres, can evolve beyond traditional roles to become key enablers of emerging educational technologies. By leading AR/VR integration, LRCs can foster experiential learning, bridge skill gaps, and contribute directly to national development goals.

Keywords: AR/VR in Education, Learning Resource Centre, Skill Development, Immersive Learning, Viksit Bharat.

A Study on Holistic & Multidisciplinary Education, NEP 2020 (In the Context of Vikshit Odisha @ 2036)

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Abstract

The National Education Policy 2020 (NEP) outlines the vision for transforming India's education system. One of the key objectives of the NEP is to promote a more holistic and multidisciplinary approach towards education. Holistic developments include integrated development of the body, mind and soul of human beings. Holistic education is such a method of teaching which aims to develop a student wholly that includes his/ her all-round development with regard to their mental, physical, academic, social, emotional and spiritual needs and their relationship with the natural world where we live. The present study examines the rationale behind this approach, its potential benefits, and the challenges and limitations with regard to its implementation and the preparation of students for the 21st century. Education plays a significant role in shaping an individual's future. However, the traditional system of education does not adequately prepare students to face the complex challenges of life in this modern world. To overcome this problem, India's New Education Policy (NEP) 2020 lays greater emphasis towards a more holistic and multidisciplinary approach to learning. The NEP 2020 promotes multidisciplinary education to help students develop critical thinking, creativity, and problem-solving skills in order to prepare the students to become lifelong learners. The Study focuses on critical thinking, problem-solving, and experiential learning skills that will enable students to develop the skills they need to navigate the complex challenges of the modern world. A multidisciplinary education as envisaged in the NEP 2020 aims to develop social, physical, intellectual, emotional and moral capacities of individuals in an integrated manner towards the holistic development of India aligning with the national vision of Vikshit Bharat @2047 and Vikshit Odisha @2036.

Keywords: National Education Policy, Holistic Education, Multidisciplinary Education, Creativity, Intellectual Development, Critical Thinking, Morality.

Adoption of Technology in Reverse Supply Chain with Special Reference to Clothing Rental Sector

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Abstract

This research aims to investigate the technology adoption in the reverse logistics in clothing rental firms and offer numerous strategies to increase the efficiency in the operation process. A Quantitative approach was used to investigate the efficiency improvement potential in reverse logistics within the clothing rental model, and 300 valid responses were gathered with the help of the Purposive sampling method. The statistical output results revealed a strong positive relationship between the implementation of technological solutions and operational efficiency in the clothing rental sector. The Pearson correlation coefficient range from .699 to .995 indicates higher implementation of technological solutions is strongly associated with enhanced operational efficiency. It was found that the alternative hypothesis (H1) is supported, affirming that the implementation of technological solutions is positively associated with operational efficiency in the context of clothing rental reverse logistics sector ($p\text{-value} < .05$). This finding underscores the critical role of technology in improving efficiency.

Keywords: Technology Adoption, Operational Efficiency, Reverse logistics, Clothing Rental Sector.

Upshot Impact of Women Empowerment

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Abstract

Empowering women is essential with varied and far-reaching outcomes. By putting intensity on economic growth, various outlooks, and social progress are empowering young women more than just a commendable aim. It is an essential step towards a more impartial and wealthy society. The secondary data has been used for studying in work. Besides that, the review papers of this study have scope for future research work. The Objective is to explore ways to foster the empowerment of young women in professional settings and study the importance of women's empowerment. A strategy for women empowerment in business ways, like a mentorship program, skill development, and promoting inclusivity, has been studied. The study concludes that women's empowerment is vital for social advancement, promoting equality to reach their capabilities, leading to more robust economies and societies. Increased creativity and innovation should be emphasised for the youth, and women empowerment plays a central role in sustainable development.

Keywords: Empowerment, Economic Growth, Mentorship, Sustainability, Development.

Unlocking Potential: Girls' Education in Odisha – Significance, Status and Barriers

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Abstract

Girls must have access to education to promote gender equality, social advancement, and sustainable development. Girls who finish school are more likely to participate actively in decision-making, enhance their health and well-being, and end the cycle of poverty. The objectives of the study are to determine the literacy and dropout rates in Odisha, investigate the obstacles and suggestions for enhancing the state's educational system for females, and evaluate the steps the state government has taken to improve. The researcher has examined a wide range of publications, reports, research papers, textbooks, official websites, and internet sources to conduct this study. The study concludes that as the literacy rate among girls in Odisha rises, so does the dropout rate among female students. Programs such as SABALA, Odisha State Policy for Girls and Women (2014), ADVIKA, Biju Kanya, and Beti Bachao Beti Padhao issues with females' education are addressed through the Ratna Yojna and the Sudakshya for Female Child Scholarship. The primary obstacles to enhance girls' education are child marriage, unfavourable parental attitudes, a lack of female educators, poverty, menstruation, gender-based violence, and household chores. The investigator recommends the findings such as - eliminating barriers in accessibility, enhancing teacher training, developing and enforcing policies to stop gender-based violence in and around schools, data collection and monitoring, and collaborative partnerships.

Keywords: Girls' Education, Barriers, Status, Odisha.

India and New Labour Code: Facts and Fades

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Abstract

The present study analyses the current status of various provisions pertaining to Labour-Management relationships in India that revolve around the Labour Codes. Prominent issues like Universal Minimum Wage, better economic benefits, and prevention of sexual harassment at work have been critically analyzed to know the root cause behind these issues. Lacuna lies with the existing Labour Codes and has also been critically analyzed using Thematic Analysis. This article will act as a driving force towards cognitive consonance by creating an understanding of the need for the hour between employers, employees, their associations, and the appropriate government. It will reenergize the decisive capability of all those who are potential Stakeholders in empowering New India.

Keywords: Code on Industrial Relations, Code on Social Security, Code on Wages, Occupational Safety, Health & Working Condition.

AI-Enabled Classroom – Opportunities, Challenges, and the Way Forward

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Abstract

The increasing use of Artificial Intelligence (AI) in education is profoundly changing the way we think about teaching and learning. As classrooms transform into vibrant, tech-savvy environments, the idea of AI-powered classrooms is becoming more popular. This paper sets out to dive into the exciting possibilities that AI brings to the classroom, like enhancing teaching methods, personalising learning for each student, and streamlining administrative tasks. However, it also faces some serious challenges, including concerns about data privacy, unequal access to technology and the ethical questions surrounding AI in education. Using a descriptive research approach that relies on secondary data, this study looks at the latest trends, advantages, and challenges of bringing AI into the classroom. It stresses the need for creating an inclusive and balanced framework where AI serves as a helpful ally rather than a substitute for teachers. To ensure that AI improves educational outcomes, the discussion stresses the significance of specific regulations, suitable teacher preparation, and equitable access to digital resources. By considering both the potential benefits and the risks, this research provides valuable insights on how schools can responsibly embrace AI technologies, fostering a learning environment that is innovative, ethical, and inclusive.

Keywords: AI in Education, Smart Classrooms, AI-enabled Classrooms.

Role of Women and Youth Empowerment in Viksit Odisha

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Abstract

The empowerment of women and youth hold significance in building a forward-looking and all-inclusive society. In the framework of Viksit Odisha, a roadmap for a prosperous and self-reliant Odisha, the proactive involvement of women and youth is vital for ensuring progress, innovation, and societal advancement. This study discusses how strengthening the capacities of these important population segments contributes to economic upliftment, social justice, and effective governance in the state. Women's empowerment in Odisha focuses on improving access to education, medical services, financial inclusion, and leadership opportunities. Programs like Mission Shakti, Self-Help Groups (SHGs), and women-driven businesses have shown the capability of women to act as agents of social upliftment and poverty reduction. Likewise, youth empowerment is encouraged through vocational training, digital skills, start-up initiatives, and meaningful civic participation. Government initiatives such as Skilled-in-Odisha and Start-up Odisha aim to utilise the enthusiasm and innovation of the youth to foster a knowledge-based and technology-driven economy. By fully integrating women and youth into the development agenda, Odisha can unlock inclusive potential and drive holistic state development aligned with the vision of Viksit Odisha.

Keywords: Women and Youth Empowerment, Inclusive Development, Viksit Odisha Initiatives.

Impact of Self-Help Groups (SHGs) on Women Entrepreneurship: Rural Odisha Context

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Extended Abstract

Introduction

Entrepreneurship and women's empowerment are essential for rural development. Sustainable Self-Help Groups (SHGs) have become a key tool for empowering women in India by offering chances for entrepreneurship, capacity building, and financial inclusion. This study examines how SHGs affect women entrepreneurs in rural Odisha, with an emphasis on business sustainability, social empowerment, and economic advancement.

Background and Rationale

The SHG movement has grown in Odisha, a state with a large rural population and a notable gender gap in economic participation, thanks to government programs like Mission Shakti and the National Rural Livelihoods Mission (NRLM). SHGs encourage entrepreneurship among rural women by offering microcredit facilities, training for skill development, and connections to markets. Nevertheless, obstacles like limited market access, insufficient financial literacy, and patriarchal restrictions still prevent women from succeeding as entrepreneurs. The purpose of this study is to examine how SHGs help women in rural Odisha overcome these obstacles and expand their entrepreneurial endeavours.

Research Objectives

To evaluate how SHGs in rural Odisha support women entrepreneurs.

To assess the effects of SHG-led entrepreneurship on the economy, society, and psychology.

To pinpoint obstacles and make policy proposals to support women entrepreneurs who are driven by Self-Help Groups.

Methodology

By integrating quantitative and qualitative research methods, the study uses a mixed-method approach. Structured questionnaires and in-depth interviews with SHG members, representatives of non-governmental organisations, and government officials in a few districts of Odisha are used to gather primary data. Case studies, scholarly publications, and government reports are

some of the examples of secondary data sources used. The analysis uses thematic and descriptive statistics to find important trends and patterns.

Key Findings

Economic Impact: SHG-affiliated women business owners have reported better saving habits, higher household incomes, and financial independence. Access to microcredit has made it easier to invest in small enterprises, including food processing, dairy farming, and handicrafts.

Social Impact: Participation in SHGs has improved women's leadership abilities, self-esteem, and ability to make decisions in their homes and communities. Additionally, it has encouraged group efforts to address social issues, including education and health awareness.

Challenges: The main challenges continue to be limited access to formal financing outside of microfinance, poor infrastructure, and sociocultural constraints. To scale up entrepreneurial endeavours, two areas that need further research are market access and computer literacy.

Policy Implications and Recommendations

Increasing the capacity of SHG federations to offer financial advising, business training, and mentoring.

Improving e-commerce use and digital literacy to increase market potential for SHG-led businesses.

Setting up specific incubation facilities and offering financial aid to female business owners in rural regions.

Promoting public-private collaborations for the long-term growth of SHG-based entrepreneurship.

Conclusion

In rural Odisha, SHGs have been instrumental in encouraging women entrepreneurs. Even if there are clear economic advantages, maintaining the effect requires addressing systemic issues with institutional support and legislative measures. Longitudinal evaluations of SHG-led businesses and their contributions to rural economic development may be the subject of future studies.

Keywords: Self-Help Groups (SHGs), Women Entrepreneurship, Rural Development, Odisha, Microfinance, Economic Empowerment.

Commerce Students' Perception on Adoption of NEP 2020 in Colleges under Higher Education Department in Kendrapara District

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Abstract

The National Education Policy (NEP) 2020 signifies a dramatic transformation in India's educational landscape, aiming to enhance holistic, transdisciplinary, and skill-based learning. This study analyses the perspectives of commerce students regarding the adoption and implementation of NEP 2020 in colleges under the Higher Education Department in Kendrapara district, Odisha. Employing a mixed-method approach, data were obtained through structured questionnaires from undergraduate and postgraduate commerce students of several institutions in the district. The study examines major issues such as curriculum flexibility, skill development opportunities, vocational training integration, and the transition to a multidisciplinary framework. The findings of the study suggest that students are interested in placing more emphasis on practical skills based on getting and generating employment, but hindrances such as a lack of awareness, inadequate infrastructure, and faculty training hinder the effective implementation of the policy. The study concludes with suggestions for improving faculty orientation programs based on practical skills, infrastructure development and the communication of NEP objectives in order to guarantee the successful implementation of the policy at the grassroots level. In the context of rural and semi-urban higher education institutions, this study offers important new insights into institutional and students' readiness for the implementation of NEP 2020.

Keywords: NEP 2020, Commerce Students, Higher Education, Kendrapara District, Policy Implementation.

National Education Policy 2020: A Comprehensive Reform in India's Education System

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Abstract

The National Education Policy (NEP) 2020 marks a significant transformation in India's educational landscape. Approved by the Union Cabinet on July 29, 2020, it is the first education policy of the 21st century and replaces the National Policy on Education of 1986. The policy aims to overhaul the education system to make it more holistic, flexible, and aligned with the needs of the 21st century.

Purpose: Achieve universal access to quality education from preschool to higher education. Promote multilingualism and the power of language in teaching and learning. It makes education more inclusive and accessible, ensuring equity for all students. Foster critical thinking, creativity, and problem-solving skills among students.

Methodology: The formulation process was informed by research and data analysis to understand the current challenges and opportunities in the education sector. Before finalising the policy, pilot programs were conducted to test the feasibility of the proposed reforms.

Major Findings: The focus on critical thinking, creativity, and problem-solving is expected to improve learning outcomes. The policy's emphasis on inclusive education aims to increase access to quality education for marginalised and disadvantaged groups. The policy proposes reforms in teacher education and training, which are expected to enhance the quality of teaching.

Keywords: Educational landscape, critical thinking, digitalization in education.

Women First, Development Next: The SHG Model for Viksit Odisha

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Abstract

Women empowerment has emerged as a vital pillar of inclusive development, and in Odisha, Self-Help Groups (SHGs) have become powerful agents of social and economic transformation. Under the visionary leadership of initiatives like Mission Shakti, now rebranded as Subhadra Shakti, over six lakh SHGs have been formed, empowering nearly 70 lakh women across rural and urban Odisha. These groups serve not only as vehicles for financial inclusion and independence but also as platforms for leadership, capacity building, and community development. This study explores how SHGs have significantly contributed to the national vision of Viksit Bharat (2047) and Viksit Odisha (2036) by enabling women to participate in sectors such as agriculture, food processing, retail, textiles, and services enhancing rural incomes and fostering local economies. By combining low-cost financial services with a self-managed development approach, SHGs have elevated women's roles in democratic, economic, social, and cultural spheres. The synergy between public and private initiatives, along with the targeted implementation of women-centric programs, has led to tangible improvements in education, health, sanitation, and entrepreneurship. Based on secondary data, this study highlights the role of SHGs as key drivers of women's empowerment and sustainable development, contributing to a resilient, equitable, and self-reliant Odisha.

Keywords: SHGs, Viksit Odisha, Women Empowerment.

Then and Now: Tracing the Journey from NPE 1986 to NEP 2020

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Abstract

Education policy encompasses the principles, laws, and government directives that shape a nation's educational framework across all levels—primary, secondary, higher education, and vocational training. It influences key areas such as curriculum design, funding, teacher development, infrastructure, assessment, and educational equity. Recognising education as the cornerstone of national development, a robust and strategic policy is vital. India's educational policy journey began with the book of 1968, revised in 1986 and updated in 1992. After a prolonged gap of nearly three decades, the NEP 2020 was introduced as the first education policy of the twenty-first century. This policy represents a model of transformation, particularly in the sphere of higher education. While the National Policy on Education (NPE) of 1968 and the National Policy on Education (NPE) of 1986 primarily emphasised improving access and promoting equity in response to the inadequate educational standards of their time, the NEP 2020 adopts a more comprehensive approach by extending the focus to include improving educational quality and stimulating advancements in educational research. This study aims to examine and compare the higher education components outlined in the NPE 1986 and NEP 2020. It seeks to identify the key similarities and differences between the two policies and to highlight the innovative strategies introduced in NEP 2020 to meet contemporary educational challenges. It is opined that the success of the National Education Policy (NEP) 2020 will depend significantly on its efficient execution and the resolution of ongoing challenges in the education sector. This study points out that the policy has the potential to draw major changes to higher education in India by promoting overall development, flexibility, and a mix of different subjects in learning.

Keywords: NPE 1986 & NEP 2020.

Green Entrepreneurship: A Path towards Sustainable Development

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Abstract

Green entrepreneurship is gaining momentum as environmental issues and sustainability concerns become more central to public and policy discourse. Increasing consumer awareness and preference for eco-friendly products have led to a growing demand for businesses that adopt environmentally responsible practices. In response, entrepreneurs are exploring sustainable models, while governments are introducing supportive schemes, policies, and financial incentives to encourage the growth of green enterprises. Despite this progress, several challenges continue to affect the sector's growth, particularly in areas such as access to green finance and regulatory support.

The objective of this study is to explore the evolving landscape of green entrepreneurship by examining the role of consumer behaviour, availability of green finance, and government initiatives in supporting sustainable business models. The study also aims to understand how these factors collectively shape the future of green markets in India and beyond.

Building on this, the methodology involves a qualitative review of academic literature, policy reports, and case studies from various sectors such as renewable energy, sustainable agriculture, and waste management. Government schemes like Start-up India, the Perform Achieve and Trade (PAT) scheme, and subsidies for clean energy, are also analysed to understand their impact on the growth and development of green entrepreneurship.

The findings indicate that rising consumer awareness is a major catalyst for green business growth. While government initiatives and schemes have created a supportive environment, challenges remain in scaling up access to green finance and building capacity among small entrepreneurs. Public-private partnerships, better financial instruments, and awareness campaigns are essential to address these gaps.

The study concludes that green entrepreneurship, backed by active consumer participation and government support, has the potential to drive long-term sustainable development.

Keywords: Green Entrepreneurship, Sustainable Development, Green Finance.

Women's Financial Empowerment and Leadership: Bridging the Gap Through Financial Literacy and Independence

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Abstract

Financial empowerment is fundamental for women's leadership and economic independence, yet systemic barriers—gender pay disparities, financial literacy gaps, and restricted access to capital persist. While financial participation among women is rising, leadership representation remains low. Existing research often examines economic participation and leadership separately, overlooking financial decision-making as a catalyst for leadership transformation. This study addresses this gap by analysing how investment behaviour, financial education, and structural reforms influence women's leadership trajectories. Using a mixed-methods approach, the study integrates insights from the Axis Bank Women Investment Behaviour Report 2024 and The Economics of Women's Leadership (Sanni, 2025), combining quantitative investment trends with qualitative case studies to assess financial independence as a leadership enabler.

The results indicate that 71.9% of women now make independent investment decisions, with stronger financial control among younger women (ages 25-34). Women hold a 37% higher investment corpus than men but face persistent capital access barriers. The study also highlights that urban women diversify into stocks and start-ups, while smaller-city investors favour traditional assets (gold, fixed deposits). The work identifies three Core Barriers of the stated issue as Gender pay gaps, financial literacy deficits, and restricted capital access limit leadership progression.

The findings of this study underscore the critical role of financial empowerment in advancing women's leadership and economic participation. Governments must prioritise financial education policies, enforce pay equity regulations, and expand access to gender-sensitive investment products to bridge the financial and leadership gap. Without these structural interventions, women will continue to face barriers in wealth accumulation and decision-making roles. Community-driven initiatives must address deep-seated gender biases in financial decision-making, normalise women's financial autonomy, and enhance female representation in leadership positions. By aligning policy, corporate, and social efforts, this study highlights the urgent need for systemic changes that enable women to transition from economic participants to financial leaders and decision-makers.

Keywords: Financial Empowerment, Women Investors, Gender Pay Gap, Financial Literacy, Economic Inclusion, Leadership Development, Investment Trends.

A Statistical Analysis of Sub-Centre and PHC Distribution for Rural Healthcare Accessibility in India

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Abstract

Healthcare accessibility is pivotal to ensuring equitable well-being, especially in rural regions of India. This study investigates the spatial and infrastructural distribution of healthcare facilities, focusing on Sub-Centres (SCs) and Primary Health Centres (PHCs), and analyses the relationship between the number of villages served per SC and PHC across Indian states. Using statistical tools such as correlation analysis, linear regression, and multicollinearity diagnostics, the research reveals critical patterns and disparities. The correlation coefficient between villages per SC and villages per PHC is found to be 0.40, indicating a moderate positive correlation—states with a higher number of villages per SC tend to also have more villages per PHC. However, the correlation is not strong enough to suggest a deterministic relationship, implying the influence of external factors such as policy decisions, healthcare budgets, and population density. Regression analysis further establishes a predictive model where the number of villages per PHC can be estimated using the equation:

$$\text{Villages per PHC} = 1.6869 \times (\text{Villages per SC}) + 21.45$$

Additionally, the report explores the distribution of SCs by infrastructure type (government-owned, rented, and rent-free panchayat buildings), finding a near-perfect correlation ($r \approx 0.998$) between total SCs and government-owned subcentres. The regression model for infrastructure needs demonstrates a very high R^2 value of 0.99, suggesting that the requirement for new buildings is largely driven by the existing subcentre distribution. However, multicollinearity among independent variables ($|r| > 0.92$) highlights the necessity of applying dimensionality reduction or regularisation techniques for more robust modelling. Overall, the study emphasises the importance of data-driven policy planning for equitable healthcare infrastructure deployment, especially in underserved regions, and provides actionable insights to bridge the infrastructure gap through strategic resource allocation.

Keywords: Rural Healthcare, Sub-Centre (SC), Primary Health Centre (PHC), Healthcare Accessibility, Regression Analysis, Correlation, Infrastructure Distribution, Public Health Policy.

Viksit Bharat 2047: A Vision for an Inclusive and Developed India

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Abstract

India is poised on the brink of a major transformation as it envisions becoming a developed nation by 2047, coinciding with the centenary of its independence. The concept of Viksit Bharat 2047 outlines an inclusive, sustainable, and innovation-driven developmental roadmap. This vision seeks to transform India into an economic powerhouse with equitable social structures, robust infrastructure, and cutting-edge digital and industrial ecosystems. However, achieving this ambitious goal comes with a complex set of challenges, including poverty, unemployment, environmental degradation, educational disparities, and infrastructure gaps. On the other hand, the demographic dividend, advancements in technology and policy reforms offer unprecedented opportunities for growth and development. This paper aims to explore the key objectives, challenges, benefits, and strategic imperatives of Viksit Bharat 2047 by employing a comprehensive review of literature, hypothesis formulation, and primary and secondary data analysis. The paper concludes with evidence-based policy suggestions for achieving inclusive growth and ensuring that no citizen is left behind in the journey towards a developed India.

Keywords: Viksit Bharat, India 2047, inclusive growth, sustainable development, economic vision, policy transformation.

JEL Classification Codes: O10, O20, Q01, I30, H70.

Climate Change and Sustainable Ecotourism: A Case Study of Similipal Tiger Reserve Area

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Abstract

Climate change significantly challenges biodiversity and local livelihoods in the Similipal Tiger Reserve Area. Urbanization and population growth have altered land-use, with a notable increase in Sal dense forest and a decline in cropland and water bodies. These changes affect both biodiversity and traditional livelihoods, such as sericulture, while sustainable ecotourism and conservation efforts must balance environmental protection with community well-being. Climate change and human activities reshape the Similipal Tiger Reserve's environment and community livelihoods. Advanced mapping using machine learning and remote sensing helps identify high-risk zones, supporting targeted fire management and climate adaptation techniques. Sustainable ecotourism and conservation require integrated, participatory approaches that address climate risks, support alternative livelihoods, and engage local communities in decision-making to ensure long-term ecological and socio-economic resilience. The paper highlights the interplay between climate impacts, forest management, local economic activities, and the need for inclusive, sustainable development strategies.

Keywords: Climate Change, Biodiversity, Sericulture, Conservation, Risks, Ecological.

Sustainable Biodiversity, Skill Development and Long-term Economic Growth through Nature-based Tourism in the State of Odisha

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Abstract

Tourism is a dynamic concept with diverse interpretations, encompassing various tourism sectors such as livelihood, health, religion, sports, education, nature tourism, and agri-tourism. It not only entertains the public or society but also gives employment to a large number of people. Tourism is one of the biggest industries in which a large number of people work together. With strategic government support, tourism has emerged as a crucial driver of employment, rural development, and economic growth. Odisha, ranked 18th in domestic tourism and 20th in foreign tourism (India Tourism Statistics, 2024), has made significant strides in promoting ecotourism, such as adventure, cultural, wildlife, religious, beach, business, rural, wellness, and wildlife tourism. In the State of Odisha, the Forest, Environment, and Climate Change Departments have initiatives for livelihood or community-based nature tourism in and around wildlife sanctuaries and national parks.

The State's Community-Based Ecotourism (CBE) model, launched in 2011-12 and gaining momentum since 2016-17, plays a vital role in economic upliftment by generating employment and supporting local supply chains. However, challenges persist, including limited financial transparency among eco-development committees and the need for strategic management to ensure community empowerment. Bridging these gaps through structured awareness programs, training, and higher

education initiatives such as value-added courses, eco-clubs, and government internships can enhance sustainability and local participation. Above 670 local community members are now managing 51 Ecotourism destinations all over the State & earning their livelihood, the majority of them are rural women and tribals. Odisha state has rich biodiversity and vast coastal beaches. To protect, conserve, and enhance wildlife, one National Park, two Tiger Reserves, three Elephant Reserves, one Biosphere Reserve, and 19 Sanctuaries have been established in the State, which are important repositories of biodiversity. Chilika, Bhitarkanika, Hirkud, Ansupa, Satakosia, and Tampara wetlands have been declared as "Ramsar Sites" of international importance.

Further, educational tourism is a valuable tool for enhancing learning and promoting cultural understanding. These programs incorporate field studies, travel, adventure, and volunteer activities to provide participants with an unforgettable journey through Odisha, India, and the world. Also, the National Education Policy-2020 recognises the importance of educational tourism and encourages its integration into the education system. So, strengthening community involvement and integrating ecotourism into academic curricula can pave the way for long-term economic development, skill development, and conservation of biodiversity in natural processes.

Keywords: Tourism, nature, Sustainable Development, Biodiversity Conservation.

From Traditional to Transformative: AI's Impact on the Educational Ecosystem

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Abstract

This article explores the transformative potential of artificial intelligence (AI) in reshaping the future classroom ecosystem. It examines the evolving roles of students and educators within this AI-driven environment, highlighting the benefits of personalised learning, intelligent tutoring, and automated administrative tasks. The article also addresses the ethical considerations and challenges associated with AI integration in education, emphasising the need for responsible implementation, AI literacy, and clear policies to ensure equitable and effective learning experiences for all stakeholders. It explores the impact of AI on the educational ecosystem, focusing on its role in reshaping teaching, learning, and administrative processes. The findings indicate that AI-powered adaptive learning systems significantly improve student outcomes, while AI-assisted grading and feedback enhance teacher productivity and student understanding. Moreover, AI-driven analytics provide valuable insights into student behaviour, enabling data-informed decision-making. However, this study also highlights challenges, including concerns about bias, equity, and job displacement.

Keywords: Artificial Intelligence, Classroom Ecosystem, Personalized Learning, Intelligent Tutoring Systems, AI Literacy, Educational Technology, Ethical Considerations.

Viksit Bharat @2047: Issues and Challenges in Education

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Abstract

When India celebrates its 100th anniversary of independence in 2047, the “Viksit Bharat@2047” program aims to see the country fully developed. Prime Minister Narendra Modi set this aspirational objective, which embraces a number of development dimensions such as social progress, environmental sustainability, economic expansion, and effective governance. Thus, education becomes the foundation for accomplishment and progress and a vital ingredient for this transformational lifecycle moment. The National Education Policy (NEP) 2020 identifies the main hurdles to India’s education system, including a lack of infrastructure and an economic crisis, as well as other significant issues that the nation faces.

The ambitious objective of raising allocated spending on education to 6% of GDP, which can only be accomplished with concerted efforts, is also included in the proposed National Education Policy 2020. The article highlights the need to update the current educational framework while attempting to address the measures taken and the problems faced in the educational sector in Viksit Bharat@2047. India can harness the transformative power of education to further its path towards prosperity and economic growth by overcoming these issues and implementing creative solutions into practice. The article identifies strategic alternatives that are necessary to meet issues of the 21st century while fostering creativity, inclusion and competitiveness worldwide. In order to assess the current status of higher education in India, particularly in light of the National Education Policy (NEP) 2020, this study uses a descriptive and exploratory research design.

In order to provide a rigorous analytical framework, a thorough analysis of secondary data was conducted, utilising evidence from reliable sources such as academic journals and government reports. In addition to an alarming Gross Enrolment Ratio (GER) of 27.3%, the data highlight significant issues facing the sector, including financing restrictions, faculty shortages, and inadequate infrastructure. Notably, NEP 2020 calls for a 50% GER by 2035, highlighting the need for improved quality of education and inclusive access.

Regardless of the obstacles, the study uncovers significant possibilities for transformation via creative teaching strategies and collaborative efforts. Furthermore, the study provides specific recommendations for reform aimed at enhancing educational standards, promoting diversity, and establishing higher education as an essential component to national development in India for Viksit Bharat @2047. In order to promote critical thinking and modernise instructional techniques, the paper encourages teacher training programs. It also emphasises the importance of inclusivity in promoting gender equality and regional balance by guaranteeing marginalised populations fair access to high-quality education. The education system can become a catalyst for socioeconomic development by supporting industry-academia collaboration, boosting research and innovation, and fostering transdisciplinary learning. Ultimately, this paper provides a roadmap for using education as a vehicle to accomplish Viksit Bharat 2047’s objectives, opening the way for an independent, just, and competitive India on a global scale.

Keywords: Viksit Bharat @2047, National Education Policy (NEP) 2020, Encouraging Diversity.

Digital Governance and Public Service Delivery: A Study of E-Governance Initiatives in India

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Abstract

In the evolving landscape of governance, digital technologies have emerged as pivotal tools for transforming public administration and policy implementation. E-governance, defined as the application of information and communication technologies (ICTs) to deliver government services, has gained prominence as a strategy to enhance efficiency, transparency, and inclusivity in public service delivery. This paper explores the impact of digital governance initiatives in India, focusing on flagship programs such as Digital India, MyGov, and state-level portals like Odisha One and e-Seva in Andhra Pradesh. These platforms aim to bridge the gap between the government and citizens by enabling real-time communication, streamlined service access, and participatory governance.

The study adopts a mixed-methods approach, combining secondary data analysis with case studies and stakeholder interviews to assess the performance of e-governance mechanisms. It critically evaluates the outcomes of these initiatives in terms of accessibility, responsiveness, user satisfaction, and administrative efficiency. The findings suggest that e-governance has contributed significantly to reducing corruption, increasing accountability, and improving service delivery, especially in areas

like utility payments, grievance redressal, and welfare scheme access. However, challenges persist, particularly in rural and marginalised regions where digital literacy, infrastructure, and internet connectivity remain inadequate.

Moreover, concerns related to data privacy, cybersecurity, and digital exclusion raise questions about the sustainability and equity of digital governance. The paper argues that for e-governance to be truly transformative, it must be supported by strong policy frameworks, robust digital infrastructure, inclusive capacity-building efforts, and continuous evaluation mechanisms. Policy recommendations include promoting digital literacy at the grassroots level, strengthening cybersecurity laws, ensuring multilingual user interfaces, and fostering public-private partnerships to scale digital innovations. This study contributes to the broader discourse on governance and public policy by highlighting both the potential and limitations of digital transformation in public service delivery. It emphasises the need for a citizen-centric approach that prioritises accessibility, accountability, and inclusivity in shaping the future of governance in India.

Keywords: Digital Governance, Public Policy, Service Delivery, Digital Inclusion, Transparency, ICT

National Education Policy (NEP) 2020

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Abstract

The National Education Policy (NEP) 2020, introduced by the Government of India on 29 July 2020, marks a paradigm shift in the Indian education system. This policy replaces the earlier National Policy on Education (1986) and is designed to align India's education framework with the needs of a dynamic, knowledge-based global society. Rooted in the ethos of holistic and multidisciplinary learning, NEP 2020 envisions creating a robust, inclusive, and equitable education system by the year 2040, with the vision to foster critical thinking, creativity, and lifelong learning while building a solid foundation for a knowledge-based economy. The focus of NEP will be on access and equity, affordability and quality and accountability. The NEP implementation will bring changes in the restructuring of the School Education System, emphasis on Higher Education, Multidisciplinary Education, Focus on Vocational and Skill-Based Education, Use of Technology in Education, Promotion of Indian Languages and Culture, Teacher Education and Training. The implementation strategy will be based on Short-Term Goals (by 2025), Medium-Term Goals (by 2030) and Long-Term Goals (by 2040).

Keywords: NEP, Implementation, Goals, Technology.

Maternity Leave in India: Policy, Practice, and Gaps in Implementation

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Abstract

Maternity leave policies are essential in influencing women's career progression and overall retention in the workforce. The maternity leave system in India, significantly bolstered by the Maternity Benefit (Amendment) Act of 2017, seeks to safeguard the rights of employed women by providing 26 weeks of paid maternity leave and requiring workplace support for new mothers. Although the policy appears to be progressive in theory, various challenges in its implementation hinder its effectiveness. This research critically analyses the gap between maternity leave laws and their actual application within both organised and unorganised sectors. It investigates the connection between the availability, duration, and quality of maternity leave and the retention rates of female employees in different sectors. Additionally, the study identifies key issues such as insufficient employer adherence, the exclusion of workers in the informal sector, inadequate monitoring systems, and the unintended effect of hiring biases against women. The results suggest that without stronger enforcement, awareness initiatives, and inclusive strategies for informal workers, the policy may reinforce gender inequality instead of mitigating it. On the other hand, insufficient or poorly executed leave policies frequently lead to high turnover rates, diminished employee morale, and long-term interruptions in careers. The study emphasises that effective maternity leave not only benefits individual women but also aids in maintaining organisational stability and fostering gender-inclusive economic growth. The paper concludes with practical suggestions for enhancing implementation, which include collaboration between the public and private sectors, incentives for employers, and broader social security coverage.

Keywords: Women Empowerment, Employment, Maternity Benefit, Policy, Career.

Unveiling Research Trends in Sustainable Supply Chains, Production, and Consumer Behaviour: A Bibliometric Analysis

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Abstract

This study conducts a bibliometric and systematic literature review on the intersection of Green Supply Chain Management (GSCM), Green Production, Green Consumer Behaviour, and Sustainability, using Scopus and Web of Science (WOS) databases. A total of 2,717 documents were initially retrieved using a predefined search string. After applying inclusion criteria and removing 12 duplicate records, 77 relevant publications were selected for analysis using R Studio's Biblioshiny package.

The study categorises research contributions by disciplinary focus, language, geographic distribution, and access type. In Scopus, the dominant research areas included Agricultural and Biological Sciences (1,738), Social Sciences (1,670), and Environmental Sciences (1,539), whereas WOS primarily featured Environmental Science (1,618), Management (1,008), and Business (961). The final dataset included 36 Scopus and 41 WOS publications, predominantly from India and published in English.

Descriptive and bibliometric analyses highlight key authors, influential affiliations, leading journals, and prominent keywords, revealing critical research trends and gaps. Findings emphasise the strategic role of green supply chains and sustainable production in shaping consumer behaviour and advancing global sustainability goals. This study provides a comprehensive research roadmap, offering valuable insights for academics, practitioners, and policymakers in fostering sustainable business ecosystems.

Keywords: Bibliometric Analysis, Green Supply Chain Management, Green Production, Green Consumer Behaviour, Sustainability, Web of Science, Scopus, Biblioshiny.

Recent Trends in Human Resource Management in Indian Organisations

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Abstract

The human resources industry has seen significant and creative advancements in recent years. Work procedures and innovations in technology have combined to mould the human resources landscape in multiple businesses. Continuous changes in economic, social, psychological, and technological paradigms and perspectives have an impact on human resources and their management. For any business, human resource management is vital. The recruitment, development, and retention of talent inside a company depend heavily on HR management. With the right actions and plans from the business executives, HR adapts its organisational structure as needed in day-to-day operations to stay up with technological improvements. Various trends in the HRM industry have been addressed in a number of studies. The function of HRM in organisations has changed significantly in the previous three years, especially since the COVID-19 pandemic outbreak. Organisations have experienced the impact of the global coronavirus pandemic, which has brought uncertainties. Flexibility, remote work, and hybrid work models have been praised as some of the most favourable features of the workplace (Pushova Stamenkova et al., 2023). The purpose of this research is to determine the current trends in human resource management and examine the work of other researchers to identify recurring patterns in the HR industry. The hybrid work model, employee upskilling, AI-enabled HRM, employee experience, diversity, and inclusion are some of the major developments.

Keywords: Human Resource Management, Hybrid Work Model, Upskilling, AI enabled HRM, Employee Experience, Diversity and Inclusion.

Understanding the Subhadra Yojana's Contribution to Women's Economic Upliftment in Odisha

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Abstract

India, being a welfare state, holds the responsibility of uplifting its weaker and vulnerable sections. In line with this commitment, both the Central and State Governments have introduced various social welfare initiatives. One of the most recent and ambitious among them is the Subhadra Scheme, launched in Odisha on 17th September 2024, coinciding with the 74th birthday of the Hon'ble Prime Minister of India, Shri Narendra Damodar Modi. This scheme marks a historic move by the newly elected government of Odisha, aiming at the economic empowerment of rural women. It is considered one of the largest women-centric welfare programs in the state, with an estimated financial outlay of over ₹65,000 crore. Under this scheme, each eligible woman beneficiary will receive ₹5,000 every six months for a period of five years, totaling ₹50,000 per individual. The core objective of the Subhadra Yojana is to make rural women self-reliant and transform them into contributors to household income. It encourages them to become entrepreneurs by setting up small and cottage industries without depending on financial institutions or bank loans. Women are now forming groups of 4–5 members to run these small-scale businesses, promoting the 'local to vocal' initiative and contributing to the global market in their unique ways. This paper seeks to explore the concept and intended outcomes of the Subhadra Scheme, analysing its impact based on official state documents, government bulletins, and published reports from news outlets and research agencies. The study focuses on the socio-economic transformation this scheme aims to bring, particularly among the rural female population of Odisha.

Keywords: Subhadra Scheme, Female Empowerment, Economic Empowerment, Financial Intermediary.

Realizing Effective Teacher Professional Development through NPST: A Framework for Transformative Change

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Abstract

The National Professional Standards for Teachers (NPST), introduced under the National Education Policy (NEP) 2020, represents a significant policy shift aimed at redefining and professionalising the teaching workforce in India. This article explores the conceptual foundations, structural components, and implementation strategies of NPST, highlighting its deep alignment with the vision and goals of NEP 2020, particularly in the area of teacher professional development (TPD). Historically, teacher education in India has been fragmented, overly theoretical, and disconnected from classroom realities. NPST addresses these issues by establishing a structured framework that outlines clear expectations for teachers across three progressive career stages—Proficient, Advanced, and Expert—using defined standards and performance indicators. The article analyses how NPST seeks to reform pre-service and in-service teacher education, improve teacher accountability, and create merit-based pathways for career progression. It further discusses pilot study findings from 75 schools across India, revealing both readiness and challenges in the system. The role of institutions such as SCERTs, DIETs, and the proposed National Centre for Teacher Quality (NCTQ) in ensuring contextual implementation is also examined. The NPST framework emphasises continuous professional development (CPD), supported by digital tools like DIKSHA, and promotes a culture of reflective practice and lifelong learning among teachers. While the road to nationwide adoption presents challenges such as capacity constraints and resistance to change, NPST has the potential to elevate teaching quality and student learning outcomes if implemented effectively and inclusively.

Keywords: Competency-Based Framework, Continuous Professional Development (CPD), NEP 2020, NPST, Teacher Professional Development.

The Confluence of Youth and Women's Empowerment with the context in reference to Roadmap a Vision of Viksit Bharat 2047 and Viksit Odisha 2036

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Abstract

This paper examines how women's and youth empowerment link with the "Viksit Odisha 2036" and "Viksit Bharat 2047" frameworks. After COVID, Odisha's economy is expanding quickly. The Ministry of Statistics and Program Implementation has reported on the state's remarkable gross domestic product increase. The growth rate of Odisha is higher than the national average. The names of the 20 cities chosen to become smart cities were recently revealed by the Urban Development Ministry of the national government. The Indian government's pet project, the list of smart cities, was unveiled in January 2016 with Bhubaneswar, the state capital, at the top. The declaration also included the approval of Rs 508.02 billion for development over the next 5 years.

In order to determine how gender and generational empowerment might serve as important catalysts for socioeconomic change, this study examines the policies, initiatives, and possible results pertaining to women and young people in the areas of Odisha and throughout India.

By exploring these concurrent developments, this paper argues that integrated approaches to women's and youth empowerment are vital for attaining sustainable development, gender equality, and inclusivity in these ambitious developmental milestones. This study explores the intersection of women's and youth empowerment in India, focusing on their role in shaping the "Viksit Bharat 2047" vision. It examines the challenges, opportunities, and policies affecting these groups and their contribution to inclusive socioeconomic development. Prime Minister Narendra Modi aims to make India a developed nation by 2047, with the Odisha State Government aligning its goal of a developed Odisha by 2036 to support this national vision.

Keywords: Women's Empowerment, Youth Empowerment, Viksit Odisha 2036, Viksit Bharat 2047, Gender Equality, Socio-economic Development, Policy Analysis, vision challenges, opportunities, Sustainable Development.

Effectiveness of Direct Benefit Transfer in Promoting Financial Inclusion among Rural Communities – A Study in Bangalore Rural District

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Abstract

Direct Benefit Transfer is a programme launched by Govt. of India with the objective of enhancing transparency and eliminating manipulation in the distribution of funds provided by the Central Government. Under this system, incentives and benefits are directly credited to the bank accounts of beneficiaries, thereby reducing leakages and ensuring efficient fund disbursement. DBT plays a significant role in promoting financial inclusion by integrating individuals, especially from underserved communities, into the formal banking network. The primary aim of the initiative is to bring every citizen under the ambit of the country's financial system. The present study aims to assess whether rural communities in the society is benefited through this scheme and its impact on achieving the broader objective of financial inclusion. Through an exploratory study, from 124 respondents selected through convenience sampling method and data was collected by using a structured questionnaire designed in Bilingual language. The findings reveal that a significant section of the rural community has been effectively brought under the formal financial system of the country. The scheme proves to be more effective among marginalized families in rural areas.

Keywords: Direct benefit transfers, financial inclusion, rural communities, savings habit, income level etc.

Assessing the Role of Microfinance in Empowering Women through SHGs: Case Study from Selected Districts in Odisha

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Abstract

Microfinance is an economic development method designed to help women from disadvantaged groups escape poverty. For people who aren't eligible for bank loans, it ensures financial support. The two primary objectives of Microfinance are to empower women and reduce poverty. Women comprise around 48.2% of India's total population. Women have a big influence on the country's economic development, even though only a small portion of all women contribute to it. Most Indian women reside in rural regions, where they are unable to access financial services and opportunities for financial independence. All of these barriers can be eliminated with the help of microfinance, which is seen as an instrument for economic progress. The primary objective of this study is to ascertain the impact of microfinance on the empowerment of rural women SHG members who hold low-level jobs. The researchers examined their understanding of microfinance services and the difficulties they faced in accessing them. The data was supplied by 960 Women SHG members using a validated questionnaire. The PIVOT Table and chi-square analysis were used in the analysis. The collected data were analysed to ascertain how microfinance affected the components of women's empowerment. The characteristics that were looked at were higher monthly income, greater household savings, help creating assets (land, jewellery, animals, etc.), improved decision-making skills regarding family financial matters, and general empowerment. When collecting the data, the Likert scale (1–5) is taken into account. The results of the study show that women feel more empowered when they join Self-Help Groups (SHGs) and receive microfinance support.

Keywords: Banks, empowerment, Microfinance, SHG.

Analysing Changing Trends: An Analysis of the Changing Dynamics of Policyholders' Attitudes Towards Life Insurance Products in Odisha

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Abstract

The purpose of the study is to assess how company policies affect the intentions of life insurance policyholders to purchase. The impact of financial independence and agent behaviour on insurance product purchases is also evaluated. It also aims to analyse the impact on demographic factors like income and level of education. The sample taken for the study is 142 respondents, and it is limited to the Indian state of Odisha. A qualitative, structured questionnaire is used in the survey to gather data on consumer behaviour and intentions to buy life insurance products from Indian life insurance providers. The data was gathered in 2023, and the study's location was limited to Odisha. It has been found that factors such as agents' behaviour, self-sufficiency, and financial behaviour significantly influence policyholders' buying intentions, while company policy has no discernible effect. The opinions of consumers in Odisha regarding investing in insurance products are the main subject of this study. The findings suggest that factors such as agents' financial behaviour, attitude, and level of self-sufficiency significantly influence policyholders' purchasing behaviour.

Keywords: Life Insurance, Policyholder Behaviour, Financial Independence, Agent Behaviour, Socioeconomic Factors.

JEL Code: G22, D12, L87, M31, E21

Which Value Combinations Predict or Inhibit Resilient Leadership? A Configurational Analysis of Future Leaders' Traits

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Extended Abstract

In the current era of frequent global crises and uncertainty, the development of resilient leadership has become a critical component of employability and future campus culture. However, resilience is not only a function of skills or exposure, but of deeper value orientations and personality configurations. This study investigates how specific combinations of personal and professional values among students may either enable or inhibit resilient leadership potential.

Drawing from a dataset collected through a structured questionnaire administered to university students across disciplines, this research employs fuzzy set Qualitative Comparative Analysis (fsQCA) to uncover the configurations of traits such as integrity, ethical commitment, accountability, adaptability, and social responsibility that are associated with perceived leadership readiness in crisis situations. The analysis identifies both necessary and sufficient conditions, highlighting not just what is present, but which traits can be absent while still resulting in resilient profiles.

Findings suggest that no single trait guarantees resilience; rather, distinct combinations lead to resilient outcomes. Notably, some students who score high in technical competence and adaptability but low in ethical values and social orientation exhibit fragile leadership tendencies when facing uncertainty. These insights underscore the importance of holistic student development strategies on campus, beyond traditional academic metrics.

This paper contributes to the discourse on employability by providing an evidence-based, configurational understanding of how leadership potential emerges or fails to, based on students' internalized values. The findings can support the design of targeted interventions and leadership programs aimed at nurturing the next generation of resilient, ethically grounded, and innovative leaders.

Keywords: Resilient Leadership, Value Combinations, Future Leaders' Traits, Leadership Inhibition, Predictive Traits, fsQCA, Crisis Leadership, Student Leadership Readiness.

Empowering the Future: Analysing the Role of Women and Youth in Sustainable Development

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Abstract

Empowering women and youth have now become a central theme in global development agendas, and is recognised as an essential aspect of meeting sustainable growth. This paper examines and explores the diverse nature of empowerment from both a national and international perspective, examining the ways in which structural reforms, policy interventions, and grassroots initiatives are working together to promote these important demographic groups. Cross-border efforts have been sparked by global initiatives such as the Sustainable Development Goals (SDGs) of the United Nations, particularly Goals 5 (Gender Equality) and 8 (Decent Work and Economic Growth), which have set ambitious targets. However, as of 2024, none of the indicators for Goal 5 have been completely fulfilled, but the projections indicate that it might take 2063 to achieve gender parity in parliaments. The paper explores the national-level changing landscape, looking at flagship programs like 'National Youth Policy', 'Beti Bachao Beti Padhao', 'Stand Up India', 'Pradhan Mantri Ujjwala Yojana', 'Kanyashree Prakalpa', etc. These programs show that the state views empowerment as both a social justice issue and an economic imperative. Number of global platforms like the UN, World Bank and regional alliances like the but rights duty, but also as a vital investment in economic development. In the end, the paper analyses the necessity of intersectional and youth-inclusive policies to ensure meaningful empowerment by contrasting national realities with international best practices. Ultimately, the paper provides the shift from token to transformative change, where youth and women actively contribute to socioeconomic development.

Keywords: Sustainable Development Goals (SDGs), Social Inclusion, Gender Equality, Youth Development, Policy Intervention.

Techno-Cultural Synergy Leveraging AI and IoT for Safer Religious Gatherings and Climate-Resilient Agriculture in Odisha

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Abstract

Today's contemporary world needs a digital solution for every single problem, so every city, state, and country should get their resolution faster. This research paper will showcase the integration of digital transformation and AI into the field of Cultural Promotion and Agriculture. The disastrous chaos during the Mahakumbh 2025 underlined the urgent demand for smarter, safer and technologically integrated management of large-scale religious gatherings in India. With the globally revered Jagannath Puri Rath Yatra (Car Festival) taken aside in June, Odisha stands at a critical stage. Around 15-25 lakhs devotees have gathered in the Car Festival, and 1000s of people lose their lives because of sunstroke, overcrowding, slippery conditions and lack of adequate exits. Many people were injured during the pulling of the chariot at the Puri Rath Yatra. This research explores how Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), and drones can be effectively deployed not only to mitigate crowd-related risks, but also to amplify global access to this divine spectacle. This will also help in Religious Tourism Revenue, Reduction in Administrative and Disaster Management Costs, Employment and Skill Development Opportunities, Growth of Tech Start-ups and Public-Private Partnerships (PPP), Enhanced Brand Value and Investment Opportunities, Data-Driven Policy Making. This tech-enabled Jagannath Rath Yatra can set a benchmark for safe, inclusive, and futuristic religious tourism in India. Agriculture is the backbone of our country, and so it is for Odisha. On the other hand, around 70% of the population in Odisha is dependent upon agriculture. We see the struggles the farmers face with the weather or the climate of the farming region. They assume and sow the seeds without even being able to determine the suitability of the location from various domains, which then results in untimely rain or rather drought, making all their hardships go in vain. The research will not only primarily focus on structuring a mobile application but will also dive into IVRS systems, agri-based kiosks accessible to farmers, sensor-based tools and techniques, and drone field assessments. These can provide solutions; warnings can be signalled even on a multilingual basis, such as in Odia, which will be feasible for the farmers to comprehend. This can help reduce costs, stabilise yields, and reduce climate-based losses. Further setting up Agri-based climate resource centres and expanding the networks can boost the rural economy.

Keywords: Artificial Intelligence (AI), Digital Transformation, Religious Tourism, Climate-Resilient Agriculture, IoT (Internet of Things), Public-Private Partnership (PPP).

Invisible Engines of Growth: Odisha as a Lab for Algorithmic Welfare, Silent Urbanization, and the Cultural Web3 Economy in Viksit Bharat @2047

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Abstract

India's vision path toward becoming a developed nation by @2047 Viksit Bharat requires harnessing of local innovations that are scalable all around the nation. Odisha, a state popularly known for its socio-cultural diversity and undergoing rapid technological transition, advocates for representing a unique laboratory for India's futuristic developmental models. This study proposes Odisha as a living lab for Viksit Bharat @2047, focusing on three key domains: pioneering real-time adaptive subsidy mechanisms, addressing the governance gaps in silent urbanisation, and leading the way in digitising cultural heritage through NFTs. This article outlines quantitative modelling fused with policy analysis and qualitative fieldwork, providing us with a paradigm to reimagine the culturally rooted development, decentralisation and inclusivity. Odisha's algorithmic welfare, urban invisibility, and creative ecosystems not only serve its own people but also offer a replicable model for other Indian states, guiding the path to Viksit Bharat.

Keywords: Algorithmic Welfare, Silent Urbanization, Cultural NFTs, Odisha, Inclusivity, Decentralisation.

Industries and Entrepreneurship

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Abstract

Entrepreneurship is vital for the economic growth of any nation. It serves as the foundation for a country's economic success by creating jobs, boosting national income, promoting rural advancement, fostering industrial growth, enhancing technological innovation, and encouraging exports. In India, the government has implemented numerous initiatives over time aimed at promoting entrepreneurship within the country. Policymakers in India have recognised the importance of entrepreneurship. A range of significant initiatives, such as Start-up India, have been introduced to encourage the growth of the private sector. Nevertheless, the contribution of entrepreneurship to development is still unclear for many policymakers. The primary objective of this paper is to examine the state of entrepreneurship in India and its promotion through the 'STARTUP INDIA' scheme. This research was conducted using secondary data gathered from various sources, including books, journals, websites, and news articles.

This analysis emphasises the vital contributions of industries and entrepreneurship to India's economic development. Industries foster growth via manufacturing and production, whereas entrepreneurship, especially through start-ups, serves as a significant catalyst for innovation, job creation, and overall economic advancement. The Indian government has acknowledged the promise of start-ups and has launched initiatives such as "Start-up India" and "Make in India" to promote entrepreneurship. Entrepreneurship nurtures young talent, while industries demand skilled professionals.

Keywords: Start-up India, Make in India, Entrepreneurship promotion, Youth empowerment, Industrial growth, Entrepreneurship and development.

Leveraging Business Analytics in Financial Statement Audits: A Strategic Imperative for Viksit Bharat @2047 and Viksit Odisha @2036

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Abstract

The development of a resilient and transparent financial ecosystem is a critical necessity in realizing the long-term economic vision of India as outlined in “Viksit Bharat @2047” and Odisha’s regional developmental blueprint “Viksit Odisha @2036.” This research explores the transformative potential of Business Analytics in enhancing the quality and efficiency of financial statement audits in Indian banks. It emphasizes the critical role of data-driven audit methodologies in promoting transparency, strengthening public trust, and supporting sound economic governance.

This paper is rooted in the analysis of audit reports and financial statements from a diverse array of Indian banks, including State Bank of India, HDFC Bank, Punjab National Bank, Utkal Grameen Bank, and Odisha State Cooperative Bank for the financial years 2021–22 and 2022–23. The study adopts a descriptive research design that integrates both primary data from public perception surveys and secondary data from publicly available audit reports and regulatory findings.

The research focuses on key audit dimensions such as the sufficiency of audit evidence, the effectiveness of internal financial controls, and the disclosure of Key Audit Matters (KAMs). Using Business Analytics tools like trend analysis, predictive modeling, and anomaly detection, the study identifies patterns in audit outcomes across different types of banks. The analysis reveals that banks that integrate Business Analytics into their audit and financial reporting processes tend to receive more unmodified opinions,

have more effective internal control mechanisms, and face fewer regulatory discrepancies. A significant aspect of this research lies in its exploration of public trust in audit outcomes. The primary data collected indicates that transparency and analytical depth in audit reporting significantly influence the confidence of stakeholders in the banking system. The insights gained from Business Analytics not only improve auditor judgment but also promote proactive governance, thus aligning with the larger goals of sustainable and inclusive development.

By demonstrating how Business Analytics can streamline audits, reduce financial misstatements, and enhance decision-making, this study provides a blueprint for regulatory bodies, banks, and policymakers to adopt more intelligent and automated auditing systems. These improvements are foundational to achieving macroeconomic stability and good governance — essential pillars of Viksit Bharat and Viksit Odisha. In conclusion, this paper posits that leveraging Business Analytics in auditing is not merely a technological enhancement but a strategic necessity. It advocates for the institutionalization of data-driven audit practices as a national policy imperative to empower economic institutions, reduce financial fraud, and foster an ecosystem of accountability. These contributions are aligned with the seminar’s central theme and offer a pathway for academia and industry collaboration to empower India and Odisha’s developmental vision.

Keywords: Business Analytics, Financial Audit, Viksit Bharat, Viksit Odisha, Internal Financial Controls, Key Audit Matters, Data-Driven Governance.

Reimagining Education for the 21st Century: Building Future-Ready Campus Cultures to Bridge the Employability Dividend

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Abstract

The 21st century work environment is changing unlike anything else. Technological revolutions, economic globalisation, demographic changes, and the fast development of artificial intelligence and automation are changing the nature of work and the abilities necessary to thrive. In this context, higher education institutions are under growing question about their ability to equip graduates for significant, sustainable employment. Employers across various sectors frequently observe a notable discrepancy between the skills applicants acquire in academic environments and those required in the current job market, despite the increasing number of degree holders worldwide. Not only do students navigating an ambiguous work environment face significant challenges from this growing employability gap, but institutions are also striving to remain relevant, and societies are seeking economic resilience and social mobility.

This study thus situates itself at the crossroads of education and employment and offers a transforming paradigm based on a future-ready campus culture. The main argument is that employability should not be considered as a side issue dealt with via standalone career services or last-year interventions. Rather, it should be firmly interwoven throughout institutional identity, pedagogy, culture, and strategic vision. Here, a future-ready campus culture is defined as a dynamic, integrative educational environment that systematically fosters the development of core employability skills, while equipping learners with the adaptability and attitude needed to flourish in challenging, rapidly changing professional ecosystems. The study employed a robust mixed-methods research approach, combining qualitative

and quantitative aspects to examine this idea. The quantitative phase comprised the survey of 450 stakeholders from 200 students and recent graduates, 150 professors and academic leaders, and 100 companies across technology, manufacturing, services, healthcare, and education. Thirty thought leaders - senior industry executives, educational innovators, and policy specialists were interviewed in-depth as part of the qualitative phase, providing rich insights into the complex interaction between skill development, campus culture, and workforce readiness. The empirical results of the study are clear-cut and sensible. An analytical study of survey results revealed seven fundamental employability skills that companies always prioritise: problem-solving ability, communication skills, adaptability/flexibility, teamwork and collaboration, digital literacy, continuous learning orientation, and critical thinking. Notably, there were clear discrepancies between the actual abilities shown by recent graduates and the projected competence in these fields. For instance, the fields with the most apparent differences were critical thinking, communication, and problem-solving. These results confirm earlier studies while providing new material situating the Indian higher education scene within global trends. In investigating the underlying factors of these skill gaps, the study found that traditional pedagogical practices such as lecture-based instruction, rigid curricula, and limited experiential opportunities fail to foster the competencies required in rapidly changing, digitally mediated work environments.

Furthermore, the lack of continuous cooperation between industries and real-world problem-solving settings means pupils are unprepared for the complexity and uncertainty of current employment

demands. Still, the research offers a compelling framework for institutional change, while also highlighting key issues. The research identifies seven interconnected cultural dimensions that define future-ready campus ecosystems through triangulated data analysis combining survey results, interview insights, and five intensive case studies of model institutions.

These include:

- Industry Integration
- Embedding applied learning possibilities such as internships, simulations, and service-learning throughout the curriculum helps leverage sophisticated digital infrastructure and instructional tools to reflect tech-driven work environments.
- Encouraging risk-taking, innovation, and development of start-up ecosystems within campuses.
- Facilitating international collaboration, cross-cultural competence, and engagement with global difficulties.
- Flexible, modular, micro-credentialed learning pathways in Learning Agility Systems support continuous upskilling.
- Career Integration offers proactive career advice, mentoring networks, and competency portfolios from the beginning of the student journey.

Strong positive correlations with employability results were seen in each of these dimensions; industry integration and experiential learning were robust prediction of skill development. Institutions that adopted a full transformation model—redesigning governance, curriculum, and pedagogy around employability had notably 2337% greater graduate placement rates than peers with more conventional approaches. The research also explores the real enablers and obstacles for applying such change. Key enablers were institutional independence, strategic industry cooperation, visionary leadership, and staff development initiatives. Conversely, the most often cited obstacles were faculty opposition to change, lack of assessment tools aligned with employability, and resource limits. Leadership commitment, faculty involvement, and extent of industry

partnership were verified by regression analysis to be the most important predictors of effective cultural transformation. From a theoretical standpoint, this study advances a system thinking approach to skill development, therefore enhancing the evolving corpus of knowledge on employability. It stresses the need for developing an integrated ecosystem where culture, pedagogy, policy, and infrastructure merge to promote holistic student development by isolating curricular changes or employer expectations. By emphasising the centrality of human abilities such as adaptability, ethical judgement, and cross-disciplinary thinking in negotiating an age of automation, the suggested framework counters the restricted, technical definition of employability that has occasionally dominated policy discussion. This research has significant social and managerial implications. It offers a strategic plan for higher education leaders to align institutional goals with labour market realities. It provides a model for going beyond transactional campus contacts toward co-investment in talent development for industry partners. For politicians, it demands regulatory flexibility and financial incentives that promote innovation and teamwork. Most importantly for students, it reaffirms the promise of education not only as a route to employment but also as preparation for purposeful, flexible, and lifelong careers.

The study highlights an urgent need to rethink education in a world where the half-life of skills is shrinking and linear career paths are becoming increasingly rare. The future-ready campus culture model presented here offers a reasonable and evidence-based approach to closing the employability gap and preparing graduates to thrive in a dynamic, rapidly changing environment. It asserts that the issue is now not about whether institutions should prioritise employability but rather how deeply and broadly they are ready to incorporate it into their DNA. Only by such an all-encompassing makeover can education live up to its dual promise of empowering students with the curiosity, skills, and confidence needed to shape the future and not just for the employment of 2023.

Keywords: Future-ready campus culture, employability skills, higher education transformation, industry integration, skill development ecosystem.

Revitalising Education through AI-Based Classrooms and the Future of the Learning Ecosystem

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Extended Abstract

Purpose: The following study examines the revolutionary impact of Artificial Intelligence (AI) on transforming the Indian classroom environment in the direction of inclusive and adaptive schooling. As India works its way toward its ambitious national development agenda of Viksit Bharat 2047 and Viksit Odisha 2036, education is considered to be an integral pillar in socio-economic enhancement and digital empowerment. The objective of this study is to evaluate the extent to which AI-led classroom technologies can improve access, quality, and equity in education, especially in resource-scarce and marginal areas. This study aims to identify the wider consequences of AI in pedagogy, policy, and social equity in the context of India's education system.

Methodology: The study adopts a qualitative approach drawing on diverse secondary sources of evidence. The sources include peer-reviewed scholarly literature, policy reports (e.g., NEP 2020, NDEAR framework), assessments of pilot projects, and case studies in India and overseas. Additional perspectives were obtained through interviews with experts and focused feedback of educators, school administrators, and EdTech practitioners, especially in Odisha and other states of India. Comparison models like Gujarat's Project SANDHAN, CENTURY Tech in the UK, and China's Squirrel AI were scanned for scalable practices. State-level interventions and digital skilling efforts as part of the Viksit Odisha 2036 mission received particular focus.

Major Findings of the Research: The results provide valid evidence that AI technologies promote both effectiveness and accessibility of learning environments. The main findings include:

- **Personalised Learning:** Learning platforms like Byju's and Khan Academy have shown enhanced concept grasping and performance, particularly in science, technology, engineering, and mathematics subjects.
- **Predictive Analytics:** Predictive algorithms can detect at-risk students using real-time data analysis and provide early intervention to reduce dropout rates.
- **Teacher Support:** Grading and content curation automation lessen administrative burdens and enable instructors to concentrate on mentorship and pedagogical enhancements.
- **Local Solutions:** AI-based content translated to local languages bridged linguistic differences to achieve broader outreach.
- **Policy Alignment:** Alignment with national digital initiatives such as PM eVidya and NDEAR has scope for system-level implementation.

Nevertheless, challenges like infrastructural deficits, lack of proper training for instructors, and issues related to data privacy must be immediately addressed to ensure that there can be full implementation of AI in classrooms.

Conclusion: The research concludes that AI, when systemically implemented in institutions, can be an effective leveller of India's educational system. It is in consonance with national and state missions' developmental objectives by providing digital inclusion and improving outcomes of teaching and learning. AI can be perceived not as a substitute for instructors but as an amplifier of teaching and learning.

Keywords: Smart Classrooms, EdTech, AI in Education, Digital Literacy, NEP 2020

Employability Skills and Future Ready Campus Culture for Viksit Bharat

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Abstract

As the global workforce continues to evolve in the face of technological disruption, shifting economic landscapes, and changing employer expectations, the role of higher education in equipping students with employability skills has become increasingly critical. This paper explores the intersection of employability skills such as critical thinking, communication, adaptability, digital literacy, and collaboration and the emerging trends in campus culture. It examines how institutions are redefining their academic environments, extracurricular frameworks, and support services to better prepare students for future careers. Drawing on qualitative and quantitative research, the study highlights key challenges and innovations, including the integration of real-world experiences, industry partnerships, and hybrid learning models. The findings suggest that a proactive, skills-oriented campus culture not only enhances student readiness for employment but also fosters lifelong learning and personal development. This research offers insights for educators, policymakers, and employers aiming to bridge the gap between academic training and workforce demands by identifying the right skills required to be campus-ready and proposing strategic frameworks.

Keywords: Employability Skills, Campus Culture, Future-Ready Graduates, Higher Education, Skill Development.

Redefining Success: Integrating Emotional Intelligence into Mainstream Education for a Resilient Bharat

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Extended Abstract

Purpose: The research demonstrates an overhauled process of schooling in Bharat with greater focus on emotional intelligence as a core skill to be developed at the school level. The main focus is to transcend book-smart accomplishments and redefine “success” on the premise of emotional equilibrium, social flexibility, and psychosocial hardness. It assumes that the cultivation of EI in children at an early age will create a generation of individuals who will be able to solve intricate personal and societal problems with empathy, clarity, and resilience.

Methodology:

- **Mixed-Method Research:** Qualitative interviews of teachers, counsellors, and students and quantitative questionnaires from 15 Indian urban and rural schools.
- **Pilot Intervention:** A six-month EI module course taught in sampled schools involving mindfulness, conflict resolution, empathy development, and reflective practice.
- **Assessment Tools:** Systematic pre- and post-intervention testing with EI scales, stress resilience measures, and classroom observations of behaviour.

Key Findings:

- **Increased Student Engagement:** Students taking EI modules demonstrated statistically significant improvement in classroom participation, cooperative behaviour, and attentiveness.
- **Emotional Regulation Skills:** There was a statistically significant improvement in the skills of students in recognizing, controlling, and

expressing emotions in a positive way.

- **Decreased Behaviour Problems:** Teachers reported a decrease in cases of aggression, bullying, and disruption of the classroom in intervention schools.
- **Improved Academic Achievement:** Not the most significant impact, but an increased level of academic achievement at a moderate level signified a positive cognitive spillover from emotional well-being.
- **Teacher Self-Efficacy:** Piloting teachers were more assured of being able to manage student emotional needs and create a sympathetic classroom environment.
- **Cultural Sensitivity:** Combining EI with culturally responsive practice e.g., Indian mythology, yoga, and local tradition increased palatability and effectiveness in the curriculum.

Conclusion: Emotional intelligence (EI) mainstreaming can transform education and build a strong and empathetic Bharat. This new paradigm of success, based on emotional strength, ethical behaviour, and the larger good, is in line with India’s civilizational ethos of “Samanvaya” (harmony). Institutionalization of EI can make future generations intellectually capable as well as emotionally, socially, and spiritually competent, leading to national progress on all fronts. Policy-level implementation of EI models by teacher training colleges and school boards is suggested in the research.

Keywords: Emotional Intelligence, Resilient Education, Indian Education System, Holistic Development, Student Well-being, Redefining Success, Social-Emotional Learning (SEL).

Business Analytics: Driven Supply Chain Optimization for Scalable Industrial Growth in Viksit Bharat

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Abstract

India's aspiration to become a Viksit Bharat by 2047 hinges significantly on industrial scalability and competitiveness in global markets. Despite significant reforms and initiatives like the Production-Linked Incentive (PLI) Scheme, Indian industries face critical financial constraints due to high logistics costs, inefficient inventory systems, and limited access to formal credit particularly among MSMEs. One major gap is the disproportionately high logistics cost accounting for 14% of GDP compared to the 8–10% typically found in developed economies. This, coupled with suboptimal supply chain coordination, customs delays, and warehousing inefficiencies, hampers profit margins and scalability.

This study proposes a Business Analytics-driven model SMART-LOGIX: Smart Logistics Optimisation for Industrial Excellence focusing on data-backed supply chains decisions using tools like Tableau, SQL, and Python. Drawing data from the World Bank, IMF, Kaggle logistics cost datasets, and MSME reports, the study identifies critical bottlenecks in manufacturing logistics and supply chain. Key objectives include reducing logistics costs, increasing inventory efficiency, and democratising access to credit for small manufacturers through predictive analytics. The research adopts a descriptive-analytical methodology leveraging machine learning-based

forecasting models and visualisation dashboards. Major findings reveal that implementing such data-driven strategies could reduce logistics costs to 9% of GDP, optimise warehouse usage by 25%, and improve MSME access to credit through alternative data modelling. Furthermore, integrating supply chain data with government platforms like ONDC and UPI can unlock over ₹5 trillion in value by 2030, supporting over 50 million jobs especially in tier-2 and rural India.

This research fills the gap in scalable infrastructure-led profitability models tailored to India's geopolitical and economic scenario. It highlights how Business Analytics not only helps visualise and predict trends but also formulates actionable strategies to enhance competitive advantage against global supply chains. It aligns directly with the Viksit Bharat vision by bolstering industrial growth, economic decentralisation, and technological empowerment. By using business analytics to optimise supply chains, empower MSMEs, and enhance export competitiveness, this research contributes to building a resilient, inclusive, and globally competitive India by 2047.

Keyword: Business analytics, supply chain optimisation, MSME empowerment, logistics cost reduction, Viksit Bharat 2047

The Confluence of Youth and Women's Empowerment with Viksit Bharat 2047 and Viksit Odisha 2036

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Abstract

This paper examines how women's and youth empowerment link with the "Viksit Odisha 2036" and "Viksit Bharat 2047" frameworks. After COVID, Odisha's economy is expanding quickly. The Ministry of Statistics and Program Implementation has reported on the state's remarkable gross domestic product increase. The growth rate of Odisha is higher than the national average. The Urban Development Ministry of the national government recently revealed the names of the 20 cities chosen to become smart cities. The Indian government's pet project, the list of smart cities, was unveiled in January 2016 with Bhubaneswar, the state capital, at the top. The declaration also included the approval of Rs 508.02 billion for development over the next 5 years.

Within the broader framework of India's development, these programs aim to achieve social, economic, and political progress by 2036 for Odisha and by 2047 for the entire nation. In order to determine how gender and generational empowerment might serve as important catalysts for socio-economic change, this study examines the policies, initiatives, and possible results about women and young people in the areas of Odisha and throughout India. This paper explores these concurrent developments and argues that integrated approaches to women's and youth empowerment are vital for attaining sustainable development, gender equality, and inclusivity in these ambitious developmental milestones. This study examines how women's and youth empowerment intersect in India, particularly emphasising how they shaped the ambitious "Viksit Bharat 2047" vision. Achieving socio-economic development, promoting inclusivity, and raising the standard of living for the coming generation all depend on empowering women and young people. This study looks at the potential and problems facing Indian women and youth, the policies meant to empower them, and their contribution to the country's development as envisioned in the "Viksit Bharat 2047" framework. Prime Minister Narendra Modi has envisioned making India a developed country by 2047.

Keywords: Women's Empowerment, Youth Empowerment, Viksit Odisha 2036, Viksit Bharat 2047, Gender Equality, Socio-economic Development, Policy Analysis, Vision, Sustainable Development.

The Role of Sports in Breaking Gender Barriers: How Female Athletes and Youth Sports Programme Challenge Stereotypes

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Extended Abstract

Purpose: The study demonstrates the research in sports, which plays a significant role in dismantling gender barriers and promoting equality, both on and off the field. The main objective of this study is to encourage women & girls to participate in sports that challenge traditional gender roles, build confidence and develop leadership skills. Youth-oriented programs encourage young girls to participate, fostering confidence and resilience. Despite notable progress, disparities in pay, media representation, and access to opportunities continues to persist. Additionally, sports can create a platform for social change and encourage a more inclusive and equitable society. It is vital for achieving the vision of a developed India (Viksit Bharat) by 2047. By 2036, sports can help achieve a top-10 finish in the Olympics, further highlighting their significance in nation-building.

Methodology:

- **Qualitative Studies:** Narratives and first-hand experiences of athletes, coaches, and administrators were gathered to understand how sports impact gender perceptions and participations.
- **Quantitative Studies:** Data were collected on participation rates, societal attitudes toward women in sports, and perceptions of gender-based discrimination.
- **Literature Reviews & Meta-Analyses:** Synthesized existing research on gender & sports to identify key themes, gaps and future research directions.

Key Findings of the Research:

- **Stereotype Challenges:** Sports participation can help break down gender stereotypes and challenge the perception of sports as a masculine domain.
- **Empowerment:** Engaging in sports can boost self-esteem, build leadership skills, and foster a sense of agency in women and girls.
- **Media Influence:** The way sports and athletes are portrayed in the media can perpetuate or challenge gender stereotypes.
- **Barriers to Participation:** Lack of resources, facilities and support systems can further limit women's access to sports and the ability to pursue their athletic goals.
- **Gender-Based Violence:** Sports organisations are increasingly addressing gender-based violence, including written policies and training programs.
- **Gender Equality Policies:** Many sports organisations have policies and action plans for gender equality, but the gap between commitment and implementation remains.

Conclusion: The research concludes that sports play a vital role in dismantling gender stereotypes and promoting equality, empowering girls and women and fostering a more inclusive society. By engaging in sports, women can breakdown traditional gender roles, develop leadership skills, and gain confidence, leading to increased opportunities and societal change. Ultimately, sports offer a powerful platform for challenging gender equality and promoting a more equitable world.

Keywords: Gender Equality, Stereotype Challenges, Barriers to Participation, Sports Program, Women Empowerment

Impact of Mission Shakti in Empowering Women with special reference to Sambalpur and Bolangir district of Odisha

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Abstract

Women's Self-Help Groups (WSHGs), Mission Shakti, a remarkable initiative promoting women's empowerment by the Odisha government, has transformed women's financial independence. Mission Shakti has mobilised thousands of women by providing them support, access to markets, and opportunities for empowerment, with an emphasis on financial inclusion and sustainable livelihoods. Significant measures like the SHG-Bank Linkage and Interest Subvention Scheme have contributed to financial inclusion and business success, alleviating economic circumstances and empowering women on a social level. The program's outstanding accomplishments highlight its substantial contribution to community development and gender equality, establishing the benchmark for women's empowerment programs across the country.

This research empirically examines the sustainability of Indian "Mission Shakti's" business model implemented through self-help group (SHG) members, developed in tune with the UN's Sustainable Development Goals for the socio-economic empowerment of rural women, their entrepreneurial skills, and group dynamics. The scope of the research is confined to the state of Odisha. The study employs a judicious mix of qualitative and quantitative research methods with an exploratory design. We follow the purposive sampling technique to select the target respondents. The data collection and respondent selection sources are "SISIR SARASA and Adibasi Mela (tribal fair), a yearly exhibition of rural microentrepreneurs held at Bhubaneswar, Odisha's capital state, from January to February 2025. The study is entirely based on primary and secondary data gathered from Self-Help Group beneficiaries in the Odisha districts of Sambalpur and Bolangir.

According to the findings, Mission Sakti will serve as a driving force behind the growth of women's self-help groups in Odisha. The study concludes that after receiving the benefit announced by the Chief Minister of Odisha in the Make in Odisha Conclave 2. OO, the standard of living, financial status, and social status of the members of WSHGs have seen significant improvements.

Keywords: Mission Shakti, Women Empowerment, Sustainable Development.

The Role of Commerce and Management in achieving Viksit Bharat 2047 with reference to MSME Sector

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Abstract

The commerce and management sectors have played a major role in India's transformation from an agrarian to a diverse industrial and service-oriented economy. The objective of becoming a developed country, known as "Viksit Bharat," becomes increasingly significant as India approaches its 100th year of independence in 2047. The key industries propelling this shift throughout the years have been management and commerce, which have contributed to the country's accelerated economic expansion and global integration. Attainment of the ambitious objective of becoming a developed nation, known as "Viksit Bharat," has become a national priority as India approaches its 100th year of independence in 2047. This milestone symbolises global competitiveness, balanced growth, technical innovation, and economic expansion.

This paper delves into the integral role played by commerce and management in shaping India's economic trajectory, emphasizing key areas like the rise of Micro, Small, and Medium Enterprises (MSMEs), the transformative impact of digitalization, and the strategies required to address emerging challenges. MSMEs, often referred to as the backbone of the Indian economy, play a critical role in fostering innovation, creating employment, and sustaining export growth. Simultaneously, digital transformation is revolutionizing traditional business models, enabling greater efficiency, inclusivity, and access to global markets.

The economic shift from agriculture to industry and services, the export sector's resilience, and the

crucial role that good management practices play in promoting innovation and competitiveness are all clarified by this mixed-method approach followed for the study, which blends quantitative data analysis with qualitative insights. The results of the study show how agriculture gave way to industry and services, how resilient India's export industry is, and how important good management practices are to promoting innovation. The crucial role that MSMEs play as the foundation of the Indian economy and the revolutionary effects of digitalisation are also covered in the paper. The report suggests strategic measures, such as boosting MSME support, encouraging innovation, improving the ease of doing business, and developing digital infrastructure, to realise the goal of Viksit Bharat by 2047. These initiatives will be vital for sustaining India's economic expansion and achieving its objective of becoming a developed country. The results highlight how important it is to improve digital infrastructure, reinforce MSME support networks, foster an innovative culture, and make doing business easier. In order to maintain economic growth and meet the goals of its billion-plus population, strategic initiatives in management and commerce will be crucial as India moves closer to its ambition of becoming a Viksit Bharat by 2047.

In addition to enhancing India's position as a world economic leader, these initiatives will guarantee equitable and sustainable growth for the generations to come.

Keywords: Viksit Bharat, Commerce, Management, Economic Growth, Digital Transformation.

From Farm to Future: Odisha's Agricultural Journey towards a Developed India

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Abstract

The vision of Vikshit Bharat @2047 and Vikshit Odisha @2036 aims to position Odisha as a major economic force through industrial growth, digital transformation, and agricultural modernization. This abstract focuses on Odisha's agricultural journey as a key pillar in achieving these goals. From the traditional survival framework to the adoption of modern technologies, Odisha is making significant strides in improving productivity, sustainability, and rural livelihoods. Initiatives from the government like the millet mission, promotion of organic farming, and support schemes such as Kalia Jojana are transforming agriculture across the state. Furthermore, programs like Mission Shakti and the State Rural Livelihood Mission are empowering women-led self-help groups (SHGs) to become active contributors in the agricultural value chain. By integrating innovation, community empowerment, and sustainable practices, Odisha is paving the way from "Farm to Future," contributing meaningfully to a developed and self-reliant India by 2047.

Keywords: Viksit Bharat @2047, Viksit Odisha @2036, Digital transformation, Odisha agriculture, Kalia Yojana, Mission Shakti, Self-help groups (SHGs), Agricultural value chain, Self-reliant India.

From Innovation to Impact: The Transformative Power of FinTech in the Green Bond Market

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Extended Abstract

The need for financial markets to promote environmental sustainability is growing in a time when the urgency of addressing climate change is greater than before. One important component of sustainable finance is the development of green bonds, which are debt securities designated for projects with favourable environmental results. In order to make green investments more effective, transparent, and available to a wider range of people, this study explores how Financial Technology (FinTech) is changing the green bond market.

The study examines how emerging technologies like blockchain, artificial intelligence (AI), digital platforms, and smart contracts are being applied to the green bond lifecycle from issuance and monitoring to reporting and trading, with a focus on how these technologies impact Environmental, Social, and Governance (ESG) reporting, regulatory compliance, market integrity, and stakeholder engagement. The report is based on a systematic review of academic articles, industry reports, and regulatory documents published between 2014 and 2024.

According to the research, FinTech is a catalyst for the expansion of green finance rather than merely an enabler. Blockchain enhances transparency by offering unchangeable documentation of the usage of green bond proceeds, and smart contracts automate adherence to ESG standards. Big data analytics and artificial intelligence (AI) help issuers and investors make better decisions by improving the accuracy of environmental risk assessments. Digital platforms, like robo-advisors and crowdfunding, are also increasing engagement in sustainable finance by

providing customised green investment options and reducing obstacles to entry.

But these prospects come with a number of difficulties. Progress is still being hindered by cybersecurity threats, regulatory fragmentation, the lack of international standards for defining and certifying green bonds, and the threat of greenwashing. Furthermore, equitable access to green finance technology may be hampered by the digital divide between wealthy and developing nations. The study offers a number of tactical suggestions to close these gaps and fully realise FinTech's promise in green finance. Among these are the development of standardised global standards, the encouragement of innovative regulations that permit risk-free experimentation, improved cooperation between financial institutions and technology suppliers, and focused education and training to increase issuers' and investors' knowledge and confidence.

This study presents a prospective view of the intersection of sustainability, technology, and finance. It highlights that FinTech can be a potent instrument in the worldwide shift toward a greener, more equitable financial system, even though it cannot resolve the climate challenge on its own. The report also highlights key areas for further investigation, specifically the necessity of quantifying the environmental and social effects of green initiatives facilitated by FinTech and investigating the ways in which digital money might reach marginalised groups.

Keywords: Green Bonds, Financial Technology (FinTech), Sustainable Finance, ESG Reporting, Blockchain Innovation

Empowering Dreams: Unveiling Tourism as a Golden Career Path for Odisha's Youth

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Abstract

Odisha, a state rich in heritage, a culturally vibrant and geographically diverse state in eastern India, has long remained a deep secret treasure in India's tourism map. While its magnificent temples, ancient festivals, flawless beaches, and rich tribal heritage captivate sporadic tourist interest, the sector remains vastly underutilised as a catalyst for youth empowerment and long-term employment. In traditional employment sectors such as agriculture and public service, which continue to experience saturation and diminishing returns, the time is ripe to reimagine tourism not just as a recreational industry but as a transformative career ecosystem capable of nurturing dreams, building skills, and securing dignified livelihoods for Odisha's burgeoning youth population.

Odisha's demographic profile, with a significant proportion of its population falling within the age group (15-59 years), creates a window of opportunity for economic advancement. By strategically investing in infrastructure skills and sustainable tourism practices, cultural preservation tourism combines these economic activities with its unique power. It is a rare industry that is not only people-intensive but also deeply rooted in local authenticity, an advantage Odisha holds in abundance.

Despite its potential, tourism has not yet been mainstreamed as an aspirational career path among Odisha's youth. It is crucial to ensure that the factors are distributed equitably and that the potential risks of exploitation and inequality are

addressed. There is a combination of large factors that includes inadequate career guidance, limited access to specialised training, seasonal employment trends, and the misperception of tourism as a low-wage service sector. Most young people, especially in rural and tribal areas, are unaware of the vast and evolving career avenues that span beyond traditional roles like guides or hotel staff. Fields such as digital travel marketing, event management, eco-tourism entrepreneurship, and adventure sports management remain largely untapped. In this generation, the digital revolution and the shift toward experiential tourism have further expanded the scope of opportunity. A student from a remote part of Odisha can now build a career as a travel vlogger or cultural content creator, reaching worldwide and becoming a successful influencer. Similarly, Odisha's unique arts and crafts, ranging from Pattachitra paintings to Sambalpuri weaves, can be embedded into immersive tourism models that combine commerce with storytelling. These trends are now acceptable to an uncountable number of youths, who want to blend creativity with commerce and heritage with innovation towards a new beginning. Empowering local youth through tourism not only curbs migration but also fosters a sense of ownership, which brings pride in their culture and environment. Women, in particular, promoted gender equity in traditionally male-dominated sectors through homestay management, handicraft enterprises, and community tourism leadership roles.

In conclusion, Odisha uniquely deserves to be positioned in tourism as a golden career path for

its youth - one that offers stability, creativity, and cultural resonance. Tourism presents a promising career path, not only a gateway to economic growth for Odisha but also a vibrant and promising career path for its youth. By embracing tourism as a career, Odisha's youth can become cultural ambassadors, innovative entrepreneurs, and custodians of a legacy that attracts the world. The journey requires more

than just infrastructure; it demands a paradigm shift in how we promote tourism careers. It is in empowering these dreams that Odisha will truly unveil its golden future.

Keywords: Odisha Tourism Development, Youth Empowerment in Tourism, Sustainable Tourism Careers, Cultural Entrepreneurship Odisha, Rural Employment through Tourism, Women in Tourism.

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