



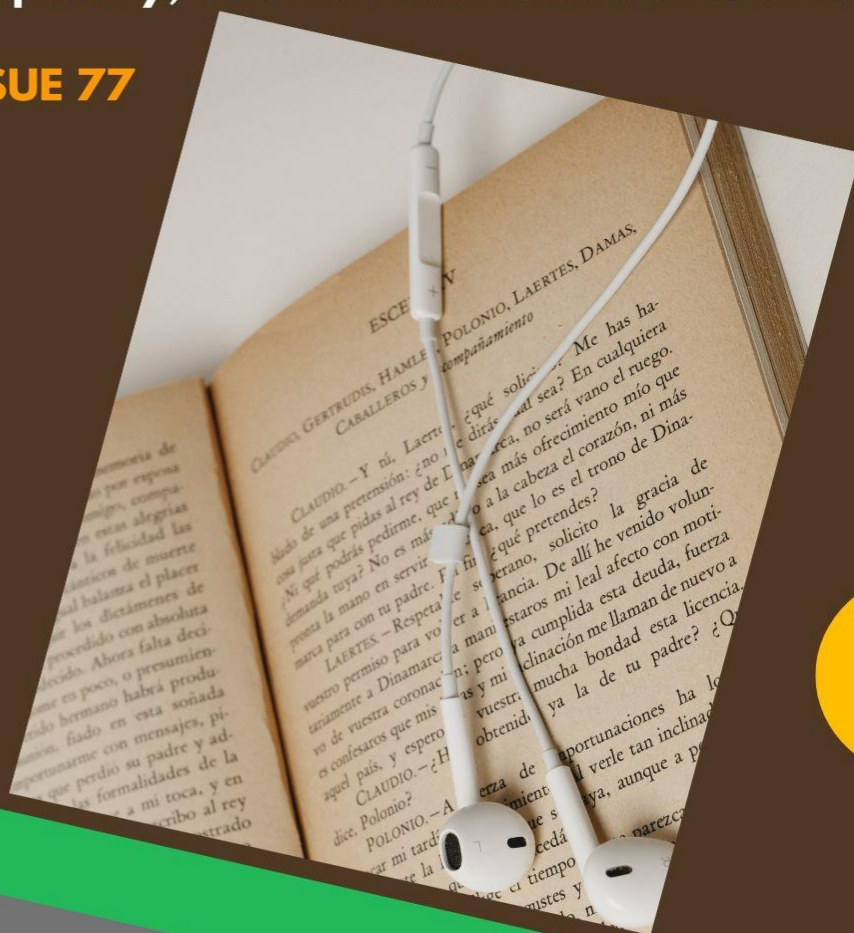
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Its 77th issues have been published without any break since its inception.

In an era driven by innovation, critical thinking, and knowledge integration, Jamshedpur Research Review (JRR) stands as a dedicated platform committed to promoting high-quality interdisciplinary research. Established with the aim of nurturing academic excellence, this peer-reviewed journal seeks to bridge diverse fields of knowledge, ranging from the humanities and social sciences to science, technology, management, and emerging disciplines.

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EDITORIAL

Jamshedpur Research Review
Year 14, Volume 2, Issue 77

The present issue of *Jamshedpur Research Review* presents a diverse and insightful collection of scholarly works reflecting the complexity of contemporary academic inquiry. The contributions span multiple disciplines, including political thought, history, education, economics, law, environment, sociology, health, and culture. In a period marked by rapid transformation driven by globalization, technological advancement, and socio-political change, the need for interdisciplinary and context-sensitive research is more critical than ever. The papers in this volume combine theoretical depth with empirical relevance, contributing meaningfully to both academic discourse and policy discussions.

The opening paper revisits the philosophical framework of cultural nationalism and Integral Humanism. By engaging with the ideas of Deendayal Upadhyaya, it highlights an alternative vision of development rooted in Indian cultural values and human-centric principles. Complementing this, the study on *Spiritual Nationalism and Civilizational Destiny: Sri Aurobindo's Idea of the Nation* deepens the philosophical discourse by examining the spiritual foundations of nationhood and civilizational continuity. Together, these works contribute to rethinking indigenous intellectual traditions as viable frameworks for contemporary governance and inclusive development.

The issue then moves to a historical exploration of knowledge systems through multiple perspectives. While one study examines the relationship between science and education in ancient Greco-Roman society, another paper on *The Evolution of Indigenous Medical System in Pre-Colonial Bengal* highlights the richness of indigenous scientific traditions in India. These studies collectively challenge Eurocentric assumptions and demonstrate how knowledge systems are shaped by cultural, ideological, and historical contexts.

Urbanization and its challenges are examined through a case study of rural–urban migration in Jamshedpur. As an industrial center, the city reflects both opportunities and pressures of rapid urban growth. Migration contributes to economic development but also intensifies issues related to infrastructure, housing, and environmental degradation. The ecological perspective is further strengthened by studies on bamboo production, livelihood diversification, and climate change impacts in regions such as Haryana and Bankura, emphasizing the need for sustainable development strategies.

Economic transformation and human development emerge as central themes in several contributions. The study on entrepreneurship and human capital development among youth is enriched by research on the *Interrelationship between Socio-Cultural Values and Entrepreneurship in India*, particularly within tribal communities of Jharkhand. This highlights how cultural contexts influence entrepreneurial behavior. Additionally, the paper on *Green Finance and its Impact on Economic Growth in India* underscores the importance of sustainable financial practices in shaping future economic trajectories.

Education, as a cornerstone of development, is explored from multiple dimensions. The discussion on the National Education Policy 2020 emphasizes multidisciplinary learning and technological integration. This is complemented by empirical research on the *Effectiveness of Skill-Based Curriculum in Enhancing Employability Skills among Senior Secondary Students in Jamshedpur*, which highlights the role of practical education in improving job readiness. Furthermore, the study on Learning Management Systems within Open and Distance Learning reflects the ongoing digital transformation in education, while also addressing challenges such as digital inequality.

Social justice and legal concerns are addressed through the study on remission of sentences and victims' rights, which calls for greater transparency and inclusivity in the justice system. The issue of crime is further examined in the *Review of Literature on Economic and Social Determinants of Crime*, providing a comprehensive understanding of structural factors influencing criminal behavior.

The volume also includes significant contributions in the domains of gender, health, and society. The study on *Socio-Demographic Transitions and Obstetric Outcomes* offers valuable insights into delayed marriage and safe motherhood, highlighting the intersection of social change and public health. In the realm of social reform and critical thought, the paper on *Radical Reason and Social Emancipation: Re-Reading E. V. Ramasamy (Periyar)* provides a powerful analysis of anti-caste movements and their role in shaping modern social consciousness.

Cultural and regional studies further enrich the issue. The exploration of the Kanwar Yatra highlights the socio-cultural and experiential dimensions of pilgrimage. Similarly, research on performing arts traditions in North-East India underscores the resilience of indigenous cultures. The historical study tracing the *Legacy of Yadavas' Family Line of Bharko-Rampur* contributes to micro-historical scholarship, preserving regional histories and identities.

Contemporary economic behavior and digital trends are examined through the study on *Awareness towards Online Selling of Beauty and Personal Care Products*, reflecting changing consumer patterns in the digital economy. Additionally, the analysis of banking services in Manipur emphasizes the importance of customer-centric approaches in promoting financial inclusion.

Regional disparities remain a critical concern, as reflected in the comparative study of Kerala and Jharkhand. Such analyses highlight how historical, social, and policy factors shape development outcomes and reinforce the need for region-specific strategies.

Collectively, the papers in this issue reflect the interconnected nature of contemporary challenges—ranging from economic inequality and environmental degradation to cultural transformation and technological disruption. They demonstrate the value of holistic and interdisciplinary approaches in understanding development, governance, and social change.

This issue of *Jamshedpur Research Review* aims to contribute to this broader intellectual endeavor by presenting diverse perspectives and encouraging critical engagement. It is hoped that the insights offered here will inspire further research and support the pursuit of a more inclusive, sustainable, and informed society.

— Editor

Date: 1 March 2026

Jamshedpur

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CULTURAL NATIONALISM AND INTEGRAL HUMANISM OF DEENDAYAL UPADHYAYA: RELEVANCE IN CONTEMPORARY INDIAN POLITICAL THOUGHT

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Abstract

This study examines the cultural nationalism and political thought of Deendayal Upadhyaya and analyzes their contemporary relevance. In the rich tradition of Indian political philosophy, Upadhyaya occupies a distinctive position for propounding the doctrine of Integral Humanism, which is rooted in Indian culture and worldview. This philosophy does not view human life merely from an economic perspective; rather, it emphasizes the integrated development of the physical, mental, intellectual, and spiritual dimensions of human existence (Upadhyaya, 1965). According to Upadhyaya, a nation is not merely a political or geographical entity but a living cultural consciousness whose foundation lies in Indian culture, traditions, and collective values. While examining Western ideologies such as capitalism and socialism, he highlighted their limitations and proposed an alternative developmental perspective suited to Indian conditions (Upadhyaya, 1965; Thengadi, 2008). This study examines the cultural nationalism and political philosophy of Deendayal Upadhyaya and evaluates their relevance in the context of contemporary India. Within the rich tradition of Indian political thought, Upadhyaya occupies a significant position for articulating the doctrine of Integral Humanism, which is rooted in Indian cultural values and philosophical traditions. Unlike modern development models that primarily emphasize economic growth, Integral Humanism advocates the holistic development of human beings through the balanced integration of physical, mental, intellectual, and spiritual dimensions (Upadhyaya, 1965). The study explores Upadhyaya's conception of the nation as a living cultural entity based on shared traditions, values, and collective consciousness. It critically analyzes his response to Western ideological frameworks, particularly capitalism and socialism, and highlights his attempt to formulate an alternative development paradigm suited to Indian socio-cultural conditions (Thengadi, 2008). The research also examines the continuing relevance of his ideas in addressing contemporary challenges such as social inequality, developmental imbalance, cultural identity, and ethical governance. Furthermore, the study analyzes the influence of his philosophy on contemporary Indian political discourse, including policy frameworks associated with inclusive development and the concept of *Antyodaya*—the upliftment of the last person. The findings suggest that Integral Humanism provides a human-centered and culturally rooted framework for balanced development. Although its complete implementation requires reinterpretation in the context of globalization and modern governance, Upadhyaya's philosophy continues to offer valuable intellectual guidance for contemporary policy debates and socio-political development in India.

Keywords: Integral Humanism, Cultural Nationalism, Indian Political Thought, Human-Centered Development, *Antyodaya*, Social Harmony, Decentralization, Contemporary Indian Politics *Swadeshi*, Inclusive Development

The concept of Integral Humanism, articulated by Upadhyaya, represents a comprehensive socio-economic and political philosophy based on the Indian intellectual tradition. Its primary aim is to establish a balanced and harmonious relationship among the individual, society, nation, and nature. The philosophy critically evaluates Western ideological frameworks—particularly capitalism and socialism—and presents an alternative developmental model grounded in Indian cultural and spiritual values (Upadhyaya, 1965).

The core principle of Integral Humanism is that human beings are not driven solely by material needs. Rather, human life requires the balanced development of four dimensions: body, mind, intellect, and soul. Similarly, society is not merely an economic structure but a living organism guided by cultural and ethical values. According to Upadhyaya, the true foundation of a nation lies in its culture, *dharma* (understood not as religion but as moral order), and social unity (Upadhyaya, 1965; Kulkarni, 2017).

This philosophy accepts the balanced concept of the four Purusharthas—Dharma, Artha, Kama, and Moksha—and argues that the goal of economic development should not merely be the expansion of production and consumption but the promotion of human welfare and social harmony. In this context, Integral Humanism emphasizes decentralized economic systems, Swadeshi, village-based development, and social justice (Thengadi, 2008).

The study reveals that Integral Humanism offers a holistic perspective for addressing several problems associated with modern development models, such as economic inequality, cultural disintegration, and moral decline. This philosophy occupies an important place in Indian political thought and continues to remain relevant in contemporary policy discourse as an alternative model of development. In conclusion, it can be stated that the philosophy of Integral Humanism proposed by Deendayal Upadhyaya represents a significant attempt to synthesize Indian philosophical traditions, cultural values, and modern social needs. It establishes a framework for human-centered, ethical, and balanced development.

Evaluation of the Social and Political Thought of Deendayal Upadhyaya in the Context of Contemporary India

The social and political ideas of Deendayal Upadhyaya are deeply rooted in the structure of Indian society, cultural traditions, and ethical values. The doctrine of Integral Humanism, propounded by him, aims to establish harmony between the individual, society, and the nation. In the context of contemporary India, where challenges such as growing economic inequality, social fragmentation, cultural crises, and the erosion of political morality are increasingly visible, his ideas appear particularly significant (Upadhyaya, 1965; Upadhyaya, 2002).

From a social perspective, Upadhyaya envisioned a society based on social harmony, cultural unity, and human values. In present-day India, issues such as caste tensions, regional imbalances, and social inequalities highlight the continued need to establish balance and coordination among various sections of society. In this context, his concept of a harmonious **society** provides an important ideological foundation for strengthening social unity (Thengadi, 2008).

Similarly, Integral Humanism emphasizes that development should not be confined solely to economic growth but should focus on the holistic development of the human being, including physical, mental, intellectual, and spiritual dimensions. In addressing contemporary challenges such as economic inequality, rural-urban disparities, and imbalanced development, this philosophy provides an important ideological foundation for an inclusive and human-centered development model. He viewed political power not merely as an instrument of governance but as a means of social service. Contemporary Indian politics faces several challenges, including corruption, excessive centralization of power, and limited public participation in policy-making. These issues further underline the relevance of his ideas. According to him, democracy can be effective only when governance operates according to the needs of society and is guided by moral values (Upadhyaya, 2002).

His ideas are equally significant in the economic sphere. Upadhyaya advocated a development policy that should not be confined solely to economic growth but should focus on human welfare, self-reliance, and the proper utilization of local resources. In the present era of globalization and market-driven economies, this perspective offers an alternative pathway toward inclusive and balanced development (Thengadi, 2008).

Thus, in the context of contemporary India's social, political, and economic challenges, Upadhyaya's ideas provide valuable ideological guidance. Although certain limitations may appear in their practical application under changing circumstances, his philosophy nevertheless presents a balanced and human-centered model of development aligned with the fundamental needs of Indian society. Consequently, his social and political ideas continue to serve as important reference points in Indian policy discourse and social reconstruction.

Influence of Deendayal Upadhyaya's Ideas in Contemporary Indian Politics, Particularly under the Narendra Modi Government

The philosophy of Integral Humanism, propounded by Deendayal Upadhyaya, has evolved into an important ideological foundation in Indian politics. In contemporary Indian politics—particularly in the context of the government led by Narendra Modi—several elements of this ideology can be observed directly or indirectly in policies and developmental approaches. A central principle of Integral Humanism is that the process of development must consider every individual in society, especially those standing at the last rung of the social hierarchy (Upadhyaya, 1965).

In the present governance framework, considerable emphasis has been placed on inclusive development, social welfare, and the concept of Antyodaya (upliftment of the poorest), which is often considered inspired by Upadhyaya's ideas. Numerous welfare schemes initiated by the government aim to deliver state services and resources to the poor, marginalized, and rural populations. This policy orientation seeks to connect development not merely with economic growth

but also with social justice and the overall improvement of living standards (Andersen & Damle, 2019).

Furthermore, emphasis has been placed on self-reliance, utilization of local resources, and **the** preservation of cultural values in governance. This perspective aligns with the idea that national progress can only be achieved by maintaining a balance between economic development and the cultural identity and social structure of the nation. In this regard, policies related to self-reliance, rural development, and social participation can be associated with the principles of Integral Humanism.

However, it must also be acknowledged that contemporary political and economic conditions differ significantly from those of Upadhyaya's time. Consequently, the practical application of his ideas often appears in modified forms. Nevertheless, at the ideological level, Integral Humanism continues to serve as an important source of inspiration in Indian political discourse, and its influence can be observed in several policy priorities of the present government.

Thus, it can be concluded that the ideas of Deendayal Upadhyaya exert a significant ideological influence on contemporary Indian politics—particularly in the developmental vision and welfare policies of the Modi government—although their practical implementation has evolved in accordance with changing circumstances.

Analysis of the Use of Upadhyaya's Ideas by Various Political Parties

The ideas of Deendayal Upadhyaya—especially Integral Humanism—have emerged as an important ideological foundation in Indian political discourse. Fundamentally, these ideas are rooted in Indian cultural values, social harmony, and a human-centered model of development. Over time, different political parties have attempted to interpret and utilize these ideas according to their respective political perspectives and policy priorities.

Some political parties have linked Upadhyaya's ideas with the concepts of inclusive development, social justice, and Antyodaya.

Within this framework, state policies are designed to ensure that the benefits of development reach the weaker and marginalized sections of society. As a result, various welfare and public-interest programs have been emphasized to reduce social inequalities and expand economic opportunities.

On the other hand, certain parties and ideological groups have placed greater emphasis on the cultural and nationalist interpretations of his thought. In this context, efforts have been made to promote a political perspective rooted in Indian tradition, cultural identity, and national unity. Consequently, Upadhyaya's ideas have become part of a broader ideological debate extending beyond economic or social policy.

However, the application of his ideas by different political parties also reveals interpretative differences and practical limitations. In some instances, the use of his principles appears more symbolic or partial, while the full implementation of his core philosophical elements—such as balanced development, ethical politics, and social harmony—remains challenging.

Overall, it can be stated that Upadhyaya's ideas have generated an important ideological discourse in Indian politics. Their diverse applications by various political parties have influenced policy directions and brought greater attention to the role of cultural values and human-centered development within Indian political thought.

Conclusion Based on the Research Problem

The central problem of this study is that although the ideas of Deendayal Upadhyaya hold an important place in Indian political thought, it remains unclear to what extent his principles are effective in addressing the complex challenges of contemporary India.

Therefore, this research attempts to examine whether cultural nationalism and Integral Humanism, as articulated by Upadhyaya, can provide relevant and useful solutions to the social, economic, and political challenges of present-day India. The study reveals that these

concepts represent ideological paradigms rooted in the Indian philosophical tradition that seek to establish balanced and harmonious relationships among the individual, society, and the nation.

In contemporary India, issues such as social inequality, economic disparity, questions of cultural identity, and concerns regarding political morality necessitate a re-evaluation of these principles. The concept of cultural nationalism is based on the belief that the true strength of a nation lies in its cultural heritage, social unity, and shared values. In an era characterized by globalization and rapid social change, this perspective can contribute to strengthening national unity and cultural self-awareness.

Similarly, Integral Humanism emphasizes that development should not be confined solely to economic growth but should focus on the holistic development of the human being, including physical, mental, intellectual, and spiritual dimensions. In addressing contemporary challenges such as economic inequality, rural-urban disparities, and imbalanced development, this philosophy provides an important ideological foundation for an inclusive and human-centered development model.

However, it must also be acknowledged that the direct application of these principles in the modern democratic and global context is not always straightforward. Their effective implementation requires reinterpretation and adaptation in accordance with changing socio-economic conditions.

Thus, it can be concluded that the principles of cultural nationalism and Integral Humanism articulated by Deendayal Upadhyaya can provide an important ideological framework for understanding and addressing the social, economic, and political challenges of contemporary India. Nevertheless, their effective implementation requires contextual interpretation and policy adaptation suited to present-day realities.

Major Principles of Integral Humanism Propounded by Deendayal Upadhyaya

The philosophy of Integral Humanism, propounded by Deendayal Upadhyaya, represents a comprehensive philosophical and socio-political framework rooted in the Indian intellectual tradition. Its primary objective is to understand human life, society, and national development in a balanced and integrated manner and to guide them in accordance with Indian cultural values (Upadhyaya, 1965). Several fundamental principles are central to this philosophy.

First, Integral Humanism is based on the concept of holistic human development. According to this view, human beings are not limited to material needs alone; rather, the balanced development of the body, mind, intellect, and soul is essential for the fulfillment of human life (Upadhyaya, 1965).

Second, this philosophy perceives society as a living and organic entity, in which individuals and society are interdependent and should exist in mutual harmony. Within this perspective, social harmony and cooperation are considered essential elements for maintaining social stability and collective progress (Thengadi, 2008).

Third, Integral Humanism advocates a dharma-based social order, where the concept of *dharma* does not refer to a particular religious sect but to an ethical and duty-oriented system that ensures justice, balance, and moral order within society (Upadhyaya, 1965).

Fourth, the doctrine emphasizes a decentralized and self-reliant economic system. According to Upadhyaya, the goal of economic development should not be confined to increasing production and consumption; rather, it should ensure the welfare of all sections of society and provide equal opportunities for development.

Finally, Integral Humanism recognizes cultural values and national unity as the foundation of national development. It envisions a model of development that is human-centered, inclusive, and balanced, while taking into account Indian traditions, ethical values, and social equilibrium.

Thus, the key principles of Integral Humanism—holistic human development, social harmony, ethical governance, and balanced economic organization—offer an important ideological framework for the long-term and integrated development of Indian society and the nation.

Comparison of Upadhyaya's Concept of Cultural Nationalism with Indian Nationalism

This study indicates that the concept of cultural nationalism articulated by Deendayal Upadhyaya represents a distinct dimension within the broader framework of Indian nationalism. While Indian nationalism is often understood in terms of historical, political, and territorial unity, Upadhyaya emphasized that the true identity of a nation lies in its culture, traditions, values, and collective consciousness (Upadhyaya, 2002).

The concept of cultural nationalism argues that the enduring unity of a nation cannot be sustained solely by political institutions or state structures. Rather, it emerges from the shared cultural heritage and social consciousness that bind people together. In this perspective, a nation is not merely a geographical territory or administrative entity but a civilizational and cultural community.

In contrast, a major dimension of modern Indian nationalism developed during the struggle against colonial rule and the freedom movement. In that context, national unity was largely defined by political independence, democratic institutions, and constitutional governance (Andersen & Damle, 2019).

Upadhyaya's concept of cultural nationalism extends beyond this political interpretation. It emphasizes that the stability and progress of a nation depend upon cultural continuity, moral values, and social harmony. According to this view, national development becomes more stable and sustainable when it remains connected to cultural identity and tradition.

Thus, while Indian nationalism historically emerged through political and historical experiences, Upadhyaya's cultural nationalism places culture and civilizational values at the center of national identity, viewing the nation

not merely as a political state but as a broader cultural and social consciousness.

Social and Political Thought of Upadhyaya: Relevance to Contemporary Problems of Indian Society

The social and political ideas of Deendayal Upadhyaya present an integrated approach grounded in the structure of Indian society, cultural traditions, and moral values. His philosophy of Integral Humanism emphasizes a balanced relationship between the individual, society, and the nation and views development not only in economic terms but also through human and social dimensions (Upadhyaya, 1965).

At the social level, Upadhyaya envisioned a society based on social harmony, mutual cooperation, and ethical values. In contemporary India, where issues such as caste divisions, social inequalities, and communal tensions persist, this perspective can contribute to fostering dialogue, cooperation, and balance among different social groups.

From a political perspective, he emphasized ethical politics, welfare-oriented governance, and decentralization. According to him, the purpose of governance should not merely be the exercise of power but the delivery of development benefits to the last individual in society. Policies inspired by this approach can encourage accountability, transparency, and public participation in governance.

Economically, his ideas stress self-reliance, the use of local resources, and balanced development. This approach can offer guidance for rural development, employment generation, and the reduction of economic disparities.

Therefore, Upadhyaya's social and political thought provides a balanced, human-centered, and value-oriented framework for understanding and addressing the complex problems of Indian society. Although changing socio-economic conditions may pose certain limitations in the practical application of these ideas, his philosophy remains an important intellectual guide for inclusive and balanced development.

Reflection and Relevance of Upadhyaya's Ideas in Contemporary Indian Politics and Policies

The ideas of Deendayal Upadhyaya, particularly Integral Humanism and cultural nationalism, continue to serve as important ideological references in contemporary Indian political discourse. An analysis of current political policies indicates that several principles associated with his philosophy are reflected—directly or indirectly—in policy formulation and development strategies, although their form has evolved over time.

A key principle of Integral Humanism is inclusive and human-centered development. Contemporary policies aimed at extending development benefits to marginalized communities, strengthening social security, and improving living standards partially reflect this perspective.

Additionally, policies emphasizing rural development, local resource utilization, and self-reliance demonstrate certain elements of Upadhyaya's economic thinking.

From a political standpoint, Upadhyaya emphasized ethical governance, social harmony, and decentralization. Current discussions surrounding good governance, transparency, and public participation show some alignment with these principles. Furthermore, debates regarding national identity and cultural values also reflect elements of his concept of cultural nationalism.

However, the contemporary policy framework is influenced by multiple ideological and practical factors. Consequently, the direct and comprehensive application of Upadhyaya's ideas is not always evident. Often, his principles function more as sources of inspiration, while their implementation in policy-making takes modified forms according to contemporary circumstances.

Practical Application of Upadhyaya's Ideas in Contemporary India: Possibilities and Effectiveness.

This study indicates that the philosophy of Integral Humanism developed by Deendayal

Upadhyaya provides a comprehensive philosophical framework for establishing balanced relationships among individuals, society, and the nation. It advocates balanced development based on the four dimensions of human life—body, mind, intellect, and soul—as well as the four Purusharthas: Dharma, Artha, Kama, and Moksha (Upadhyaya, 1965).

In the context of contemporary India—characterized by globalization, digital transformation, economic inequality, environmental challenges, social fragmentation, and technological dependency—the practical application of his ideas appears both possible and, in certain sectors, increasingly effective.

Policies emphasizing Antyodaya (upliftment of the last person), self-reliance, local production, decentralization, and social harmony reflect elements consistent with this philosophical framework. Such initiatives aim to promote inclusive development, strengthen cultural confidence, and reduce socio-economic disparities.

However, the complete and pure implementation of these principles faces several challenges. Global economic interdependence, technological transformations, environmental crises, and geopolitical conflicts create complex policy constraints. Consequently, the practical application of Integral Humanism requires adaptation and reinterpretation within contemporary socio-economic contexts.

Nevertheless, the philosophy continues to offer a human-centered alternative to dominant Western models of development, particularly in addressing issues such as inequality, environmental degradation, and moral decline in public life.

In conclusion, the ideas of Deendayal Upadhyaya—especially Integral Humanism and cultural nationalism—remain relevant in contemporary India. Their practical application is possible and, in certain policy areas, already visible. When interpreted and adapted according to modern circumstances, these ideas provide an intellectual foundation for inclusive, balanced, and value-based development.

Although their ideal and complete implementation may be difficult, even partial and contextual application can contribute significantly to the holistic welfare of Indian society. Thus, Integral Humanism continues to serve not only as a philosophical doctrine but also as a meaningful guide for future policy formulation and national development.

Practical Application of Deendayal Upadhyaya's Ideas in Contemporary India: Possibilities, Effectiveness, and Brief

- i. The social, political, and economic ideas of Deendayal Upadhyaya are rooted in the Indian cultural tradition and a human-centered development perspective. The philosophy of Integral Humanism propounded by him seeks to establish a balanced relationship among the individual, society, and the nation. In the context of contemporary India's social, economic, and political conditions, an important question arises as to whether his ideas can be practically implemented and remain effective in the present era (Upadhyaya, 1965).
- ii. From a contemporary perspective, several elements of his thought, such as inclusive development, social harmony, self-reliance, and decentralization, continue to appear relevant in policy-making and developmental debates. Policies emphasizing rural development, the utilization of local resources, and the upliftment of marginalized communities suggest that his principles can still provide meaningful guidance in contemporary circumstances.
- iii. Furthermore, the emphasis placed by Integral Humanism on the holistic development of human beings can help in understanding and addressing the limitations of modern development models. This perspective attaches importance not only to economic progress but also to social justice, moral values, and cultural balance,

which are extremely significant in today's complex socio-political environment (Thengadi, 2008).

- iv. However, due to globalization, technological transformations, and complex economic structures, the direct and complete implementation of his ideas may be challenging. Therefore, contextual reinterpretation and policy adaptation of his principles are necessary in accordance with contemporary circumstances.
- v. Thus, it can be concluded that the practical application of Upadhyaya's ideas in contemporary India is possible, provided they are reinterpreted and adapted to present socio-economic needs. Under such conditions, his philosophy can offer an effective intellectual foundation for balanced, inclusive, and human-centered development.

Integral Humanism as an Alternative Development Model

The philosophy of Integral Humanism proposed by Deendayal Upadhyaya presents an alternative development model for the holistic advancement of Indian society, while his concept of cultural nationalism provides an important basis for understanding Indian national identity.

The analysis of the study indicates that Integral Humanism is not limited to economic development alone; rather, it proposes a comprehensive framework for the balanced and coordinated development of the individual, society, and the nation. This philosophy gives equal importance to the material, moral, cultural, and spiritual dimensions of human life (Upadhyaya, 1965).

Moreover, his concept of cultural nationalism asserts that the true identity of a nation lies in its cultural traditions, value systems, and collective social consciousness. The findings of the study demonstrate that this perspective offers a significant ideological foundation for an alternative development model that takes

into account the historical and cultural characteristics of Indian society.

Thus, the hypothesis that Integral Humanism provides an alternative model for the holistic development of Indian society and that cultural nationalism offers a basis for understanding national identity is substantially supported.

Relevance of Upadhyaya's Ideas for Addressing Contemporary Problems in India

The analysis of various chapters in this study reveals that the social, political, and economic ideas of Deendayal Upadhyaya provide valuable intellectual guidance for understanding and addressing several contemporary challenges in India, such as:

- Social inequality
- Imbalanced development
- Decline of ethical values
- Issues related to cultural identity

His ideas are grounded in principles such as social harmony, inclusive development, self-reliance, and ethical politics, which continue to remain relevant in the evolving socio-political context of India. Although their practical implementation requires appropriate policy adaptations, the findings of this study suggest that his ideas provide a useful conceptual framework for addressing contemporary social challenges.

Hence, this hypothesis is also adequately supported.

Overall Conclusion of the Study

The present study examines the philosophy of Integral Humanism and the broader social, political, and cultural thought of Deendayal Upadhyaya within the context of contemporary India. The analysis demonstrates that Upadhyaya's ideas constitute a significant contribution to Indian political philosophy, as they attempt to synthesize traditional Indian cultural values with the requirements of modern socio-economic development. His doctrine of Integral Humanism provides a holistic framework that emphasizes the balanced development of the individual, society, and nation by integrating the physical, mental,

intellectual, and spiritual dimensions of human life.

A central finding of this study is that Integral Humanism offers an alternative developmental paradigm rooted in Indian philosophical traditions. Unlike Western ideological models such as capitalism and socialism, which often prioritize economic growth or class structures, Upadhyaya's philosophy stresses the importance of human welfare, ethical values, and social harmony. By incorporating the concept of the four *Purusharthas*—Dharma, Artha, Kama, and Moksha—his thought seeks to ensure that economic progress is guided by moral responsibility and cultural balance. In this sense, Integral Humanism proposes a human-centered and culturally grounded model of development.

The study also reveals that Upadhyaya's concept of cultural nationalism provides a distinctive interpretation of national identity. According to him, a nation is not merely defined by political boundaries or administrative institutions but by a shared cultural heritage, collective values, and a common social consciousness. This perspective highlights the importance of cultural continuity and social unity in strengthening national development and political stability.

Furthermore, the analysis indicates that many principles associated with Upadhyaya's philosophy such as inclusive development, social harmony, decentralization, and self-reliance continue to resonate in contemporary Indian political discourse and policy frameworks. These ideas are particularly relevant in addressing challenges such as social inequality, developmental imbalances, cultural fragmentation, and the decline of ethical values in public life. Although the direct and complete

application of his ideas may be difficult in the context of globalization, technological change, and complex economic systems, their conceptual relevance remains significant.

The study therefore concludes that Integral Humanism and cultural nationalism together provide an important intellectual framework for understanding the socio-political realities of India. While their practical implementation requires reinterpretation and adaptation in accordance with changing circumstances, the core principles of Upadhyaya's philosophy—human-centered development, ethical governance, and social harmony—continue to offer valuable guidance for policy formulation and national development.

In sum, the thought of Deendayal Upadhyaya represents a meaningful attempt to bridge traditional Indian philosophical wisdom with modern developmental needs. His philosophy remains relevant not only as an academic discourse within Indian political thought but also as a potential guide for building a balanced, inclusive, and value-based model of development in contemporary India.

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CONNECTIONS OF SCIENCE AND EDUCATION IN ANCIENT GRECO-ROMAN SOCIETY

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Abstract:

This is a pro-science and pro-education society that we live in. Both science and education are regarded as the answer to every question and the foremost ‘banking systems’ to invest in. It feels intriguing to trace the nexuses between science and education. Unfortunately, despite being intimately connected, history of science and history of education are studied separately as everything else following the modern trend of a specialised world. It should be a generalist, holistic approach towards studying history of knowledge or history of consciousness, instead. Moreover, knowledge transmission is given all attention, while, the process of knowledge formation and the ubiquitous roles of non-knowledge transmitters are neglected. An enterprise, hence, is undertaken to critically analyse the ancient society of the later Greco-Roman empire, that is, the antique society which along with its preceding counterpart, the Grecian, is considered as the cradle of the modern western culture, regarding the interconnections of contemporaneous science and education temporally ranging from 200 AD to 600 AD. The objectives of the study are to state and discuss the statures of science and education in ancient Greco-Roman society temporally ranging from 200 AD to 600 AD. And, then, it is to investigate the ancient Greco-Rome regarding the interconnections of contemporaneous science and education within a delimited timeline between 200 AD and 600 AD. Methodology-wise, this study is largely qualitative. It is historical in nature and carried out in a comparative manner. The whole research report, that is, the paper, is regimented into few sections objective-wise. It can be concluded by saying that in terms of popularity education was way ahead of science. In Greco-Rome, on the one hand, science was mercilessly persecuted by the state-religion, Christianity, to be precise. And, on the other, the imperial paramountcy supported general public secular education in various ways to its own advantage. Also, in there, practice of science had immanent marginalised streak. It was looked down upon by education by and large and curricular inclusion of science was, to the max, peripheral or ornamental, if any. Besides, in archaic Greco-Rome, science and education shared a peculiar connection of co-dependency in which education enjoyed an upperhand which scenario is the polar opposite to their modern parallel.

Keywords: Science, Education, Greco-Roman Society, Antiquity, Co-dependency

Introduction:

History has a strange habit of repeating itself - here lies the significance of historical study and history. In spite of being intimately connected, especially, now, history of science and history of education are taught separately - whence the approach should be holistic in terms of the history of consciousness or knowledge. Plus, the transmission and transcription (banking of knowledge) of knowledge get the sole attention,

whereas, the formation of knowledge is neglected. What would be better than to retrospect the formation of knowledge in a chunk sample of antiquity when knowledge just started to be consolidated? After all, the present reflects the past.

We practically live in a pro-science society where education is regarded as a panacea that promises all and fails to fulfil most often. It is extremely intriguing for me to dissect the

ancient embryos of science and education on the societal slide of ancient Greco-Rome - the progenitor of modern western culture. And, this I propose or offer as my research rationale for this paper. This study aims to analyse ancient Greco-Roman society regarding the interconnections of contemporaneous science and education. The study is significant because, firstly, history is a 3-in-1 tool - a storyteller for relaying past, interpreter of present and forecaster of future. Secondly, because of the research rationale of which I had discursively mentioned before.

Discourse of Definitions:

Here, the functional definition of science is that it is a sapiens endeavour by which natural, that is, physical, chemical, biological, geological etc., phenomena, processes, objects or effects are investigated, generalised, modelled or replicated by the method of verification and/or, its flip-side, falsification as the criterion of truth in terms of elements, factors, causes, principals, theories or laws under a blanketing consensual view known as paradigm to conformingly carry out such activities.

And, education is post-conception installation of knowledge or information by instructions through multifarious modalities, that is, the process of 'nurture'. Especially, modern conscience suggests that education has unequivocally been both a means and an end being enjoined by the ruling regime to select favourable set of ideas, beliefs, myths, concepts and knowledge from the available tangible and intangible cultural resources to infiltrate the young minds with so that the present hegemony be perpetuated advantaging the small-scale, closely-cloistered class in power.

Delimitations:

This study involves delimitations of three types of domains - time, space and attribution.

Temporal Delimitation:

The delimited temporal window has been scaled to be 200 AD to 600 AD, a span of four centuries of the antiquity. Strange, curious time it was; rapidly changing, crumbling down and

heading towards the 'slumber' of the Middle Ages. The Roman Empire was facing an economic crisis as result of draining down of expensive numismatic metals due to centuries long maritime commerce with the Far East in exchange of exotic nature derived luxurious items. Political unrest was another headache for the emperors who were frequently assassinated, forced to commit suicide or abdicate and lived under the threats of external, 'barbaric' tribal invasions or incessant animosity with archenemies like the neighbouring *Sasanians* and internal conspiracies committed by the trusted, close ones even. On the theological front, once Christianity officially received the status of state religion and imperial patronage in 380 AD, a methodical, merciless persecution of paganism and pagan culture was orchestrated. Naturally, the pagan intellectuals and their cerebral heritage perished, fled and took refuge in dormant forms, holding their heads low, in socio-political pockets inside and outside the Empire. The legendary Grecian cerebral lineage was gasping for its last breath, ready to go into hibernation only to be resurrected by the Arabic revival.

Spatial Delimitation:

Speaking of the geographical ambit or spatial premise, I took the territorial stretch (whatever heterogeneous they may be) of the Greco-Roman empire temporally spanning between 200 AD and 600 AD under consideration. The imperial Rome had an enormous territory stretching from England in the north-west to the border of Iran in the south-east and from the European lowlands in the north-east to Egypt in the south-west.

Attributional Delimitation:

The science attribution has been delimited to medicine (for its existential essentiality), chemistry (for its omnipresence) and astronomy (for its antique roots in both reverence and fear). Therefore, involving one society and four attributes (medicine, chemistry and astronomy as science delimitation and education), it is basically a 4 fold study.

Literature Survey:

Literature survey serves as an indisputably indispensable guide to detect the research richness as well as research lacuna or knowledge gap in one's micro area of research. In here, I reviewed quite a significant number books divided in 3 categories - on cultural aspects other than science and education, on science and on education. A total of 88 books have been thoroughly read, though, the survey was not limited to these.

A terribly felt limitation of the study is language barrier. Both Greece and Italy have nationally supervised Doctoral theses repository equivalent to Indian portal Shodhganga. But, all of them are in either Greek or Italian, none of which I can claim to know. Moreover, I have not come across a single Indian Doctoral thesis solely dedicated to antique Greco-Rome. So, I had to resort only to related books written in English language on which I have workable command, if I may say so. The books can be further divided into 2 classes depending on their respective writers' domiciles - written by author(s) of non-Indian descent, and of Indian descent.

Research Methodology:

The methodology of this research is largely qualitative (because the data used are mainly of qualitative type). Its nature is of a historical study (because the study is set in a temporal ambit stretching from 200 AD to 600 AD) conducted in a comparative manner (since a comparison is made between science and education to trace their nexuses in ancient Greco-Rome).

The types of sources materials or data are of 3 - primary, secondary and tertiary. I remained quite cautious about the external and internal criticisms of the collected data throughout and nothing outstanding has been held against.

Science in Ancient Greco-Roman Society:

Evidently, the first scientific streak was introduced to the west by the *Ionian* school of natural philosophy devoid of divinity. The major names of the first natural philosophers in

the history of western thought are *Thales*, *Anaximander*, *Anaximenes* and *Heraclitus*. Their life and works contributed to the first secular sense of science free from superstitions. Coming to the medical thoughts and activities, Greek cultic and secular medicine were transplanted in elaboration into Roman soil and carried on in Roman toga. The exceptionally odd dynamics of medicine and slaves or former slaves of Greek descent shows how the conquered culture medically conquered the conqueror. The most majestic example of this Greek lineage were *Galen* and *Galenic* medicine some traits of whose heritage lingered on in the modern medical mind till around 19th to 20th century AD. Again, Christianity laid its hand on medical sphere. The church built numerous medical social service houses of different kinds and made medicine individualistic or familial to indiscriminately public to a great extent through social welfare. Medicine stretched its helping hand towards militia and the famous Roman army took its full advantage in terms of local battlefield attached medical camp, medicinal resources, fortified respite for treatment and recuperation etc. Ancient Greeks like *Empedocles* and *Democritus* are considered the first atomists of western history of thought as they proposed the concept of 'atoms' and 'voidness'. *Aristotle* was to suggest the foundation of the longstanding humoral theory, that is, immanent properties of substances or materials or 'elements'. Later, *Phyrronist* *Lucretius* revived the 'atomic' theory to not much contemporaneous avail.

The Egyptian *khemeia* relayed the baton to Greek alchemy. The priests, astrologers and alchemists comprised a feared unit who were supposed to make gold, predict future and create panacea. They also tied the microcosm with macrocosm by equating known metals and skylets. With the winds changing shift, alchemists had to maintain an obscured to low-key profile. Their practices also hid behind the symbolic literary mystification. In the 4th century AD another blow was received in the form of emperor *Diocletian's* edit ordering burning of all accessible or available alchemical texts.

The Roman *khemeia* did not add anything new to alchemy apart from some individualistic effort to accumulation of alchemical knowledge and texts, and multiplication in terms of newer copies and commentaries. Alchemy then waited patiently in a dormant state for the medieval Arabic revival.

People had always been intrigued by the skylights and the endless vestibule. The Greeks are not exceptions. In fact, they had their share of sky-gazers, *Heraclides*, *Apollonius*, *Hipparchus* and others all of whom favoured a geo-centrism except for the solo propounder of helio-centrism, *Aristarchus*.

The blue-eyed boy of Roman astronomy was *Ptolemy* (of *Macedonian* descent and Greek heritage) who revamped the *Apollonian-Hipparchan* model through his famous treatise, *Almagest*, whose concepts of helio-centrism, infinity of universe and circular orbit kept perpetuated until the times of *Copernicus*, *Tycho Brahe* and *Kepler*, respectively. One of his remarkable contributions is his *Table of Chords* that is considered equivalent to the modern table of sine. Science in ancient Greco-Roman society is to be summarised as follows.

- I. Greek science was the lending ancestor of Roman science.
- II. The school of *Ionia* was the dawn of Greek rationalism, or natural philosophy, to be particular.
- III. Both the Greek sacred and secular medicines were transplanted in Roman soil from Greece as a result of both organic and institutional entrepreneurship.
- IV. *Galen of Pergamum* created a steady monolith of his medicine that remained largely unwavering until the 18th century AD.

The sixth chapter is on education in ancient Greco-Roman society. The Romans borrowed much from Greek education like everything else. Greek education could be divided into *trivium* and *quadrivium* horizontally as discussed before more than once, whereas, longitudinally it was divided into primary, secondary and tertiary. So was the Roman.

- V. Two of the major *Galenic* medical notions were the humoral theory and the blood circulation theory for sapiens.
- VI. Christianity utilised medical services as social connection with the public life and health.
- VII. The massive Roman army too was benefitted by medical advancements in anatomy, surgery and medicine.
- VIII. The Greeks produced the first 'atomist's in the history of western thought.
- IX. *Khemeia* was the immediate ancestor of Roman alchemy.
- X. Roman alchemy was concerned for three things: making gold, creating panacea and interpreting the universe by predicting future.
- XI. Roman astronomy disguised in the garb of determinism of astrology.
- XII. *Ptolemy* was synonymous to Roman astronomy whose theories of geo-centrism, infinite universe and circular orbits were debunked only in the times of *Copernicus*, *Tycho Brahe* and *Kepler*.
- XIII. The state had never been very sympathetic to science and science practitioners, in general.
- XIV. With the rise of Christianity, the new religion proved to be so intolerant towards rational thinking that some factions of science had to hide underground like alchemy etc. Medicine and astronomy somehow managed to survive overtly to an extent.

Education in Ancient Greco-Roman Society:

The Roman primary schools came into existence around the 6th century BC. Boys, and some girls, of about 4 went to *ludus litterarius* run by *magister literarii* to learn reading and writing alphabet and numerals. The Roman children were introduced to Latin first, then, Greek, through *hermeneumata pseudodositheana*. If there was familial means to afford, slave *pedagogues* were appointed to extraneously supervise the children's progress.

From about the age of 7 to 14, the prepubescent boys (mostly) went to secondary grammar schools or *Grammaticus latinus* or *Grammaticus graecus* under grammar teacher or *grammatici*. There they learned grammar, mythology, literature, local history and geography, and logic as a primer of rhetoric to be learned in the tertiary level or standard.

Around 14 to 16 years of age, it was time for the adolescent boys to go for tertiary education equivalent to rhetoric if they could afford it. There they learned the prestigious art of oratory and rhetoric under the guidance of a *rhetor latinus* or *rhetor greacus*. Precept, imitation, composition exercises, *declamatio* or *melete* and sequence - these 5 were the stages of learning a piece of oration on a particular theme. Aristotle proposed 3 desired attributes of good oration - *ethos*, *logos* and *pathos*. Rhetoric had mainly 3 types - deliberative, judicial and epideictic.

Apart from this proto-system of general public education, there were provisions of several other courses offered as higher studies few of which became populist - Roman law, shorthand, medicine, astronomy etc.

The imperial state realised that general public education would be beneficial for the smooth running of state machinery. This is why the supported and patronised education by providing fellowships to students, promulgating royal edicts ensuring teachers'

Education in ancient Greco-Roman society is to be summarised as follows.

- i. Roman education can be said as an implant of Greek education in Roman soil.
- ii. Roman education was obviously bilingual - for the Greek speakers of eastern empire learning Latin was advantageous, whereas, learning Greek was advantageous for the Latin-blooded westerners.
- iii. Roman education adopted the Greek latitudinal curricular

remuneration, rendering places for teaching-learning and kind.

After Christianity became the emperor's religion, it, in favour of theological indoctrination, thoroughly destroyed whatever progress had been there in the general public secular educational front.

The Romans were no less misogynistic than people are today. Educational participation in any form for women depended on determinants like familial resources and support, individual inquisitiveness and enterprise, situational demand, absence of leading male figure etc.

Greco-Roman educational assessment was equivalent to exhibitionism. Teachers did not have much choice than succumb to popular public demand. After all, all the government job aspirants needed to know to give orders to their subordinates.

The Romans thought of children as small-sized adults with no special psychological or pedagogical needs. Rote learning was the rule. Corporal punishment was a regular. There were some attempts to treat children as children in the educational precincts but those were much mocked by contemporaries.

Latinisation was never forced. For the Greek-speakers of the eastern empire, learning Latin was monetarily advantageous and Greek was culturally advantageous for the western empire Latin-speakers. Over all, people trusted education promising a secured and safer future, but, got disappointed much frequently.

division of *trivium* and *quadrivium*.

- iv. Longitudinally, Roman education was divided primary, secondary and tertiary stages, respectively.
- v. At primary level, reading, writing and arithmetic were taught.
- vi. At secondary level, grammar, literature, mythology and some introductory geometry and logic were taught.
- vii. At tertiary level, the mainstream was rhetoric and oratory.
- viii. If opted for, tertiary level students could instead go for medicine, astronomy, law, shorthand etc.

- ix. In the patriarchal Greco-Roman society, women's educational participation depended on individual enterprise, family support, unavailability of leading male figure, demanding situation etc.
- x. They thought of the children as small-sized adults with no special age-specific educational psychological needs. Corporal punishment was a regular.
- xi. The state knew that general public education was important for running their bureaucracy and so it backed education in terms of fellowship, fixing teacher's remuneration, rendering place for teaching-learning etc.
- xii. With relaying of baton of state religion from paganism to Christianity, the latter wrecked wanton havoc on education and abolished whatever secular there was reducing it to mere reading and rote learning of religious dogmas.

Connections of Science and Education in Ancient Greco-Roman Society (200 AD - 600 AD):

We are, right now, living in the Holocene period, characterised by its exasperating, and soon to be collapsing, warmth following a comparatively colder period, of earth's geologic chronology as officiated by the International Commission on Stratigraphy (ICS). Despite, the Commission has not yet officially validated, but, is collecting data about and sincerely considering accepting it; a word has been dragged around amidst the academic discourse very lately - Anthropocene - denoting that the current periodic geology and ecology are being regulated by the sapiens affairs as the key factor. However, there has been discontent expressed from within the academia by many academicians against the term as they do not think and believe that each and every member of the species is equally responsible for this disastrous phenomenon and, hence, disqualify the term in favour of another, Capitalocene, which has been doing the rounds since about the 1990's. The team-Capitalocene, which seems to

be more rational speaking strictly for me, rationalises that it is no more mere a natural ecology we are talking about or dealing with, but, instead, a global economic ecology created by capitalism is now dictating everything under the sun, both the bio and non-bio spheres, having had the most recent boosting up during the introduction of neo-liberalist policies under the Ronald Reagan presidential in USA that waded through the open globe-market presto. Paradoxically, the more the social constructs and sapiens endeavours have become seemingly separate and institutionalised, the more their fates have become co-dependent and tangled - so much so inescapably that the counter measures advised to tackle a catastrophic future that is becoming more and more evidently visible are also giving stress on holistic well-being to rescue and free ecology from the economic capitalist clamp. As for an example, Donna Haraway, one of the few individuals who singlehandedly pioneered the academic movement for wholesome study of history and philosophy of knowledge, instead of the regular practice of disciplinary distinction, and long-overdue and valid incorporation of historically criminally ignored history of gender, is inspired by the grand creature-ish being Cthulhu from Lovecraftian dystopia 'The Call of Cthulhu'. She is hopeful of swerving off our self-dug grave by taking the road to Chthulucene (her own optimistic interpretation of the extraterrestrially horrific world of the Cthulhu Mythos spiralled out of various stories and novellas by H. P. Lovecraft), an utopian world ecosystem consisting of all living species and non-living things bonded as a singular kin entitled to equal priority and privilege.

Now, how does this culture of co-dependence work for science and education? There indeed is a well-established, if not declaratively defined, status quo - synonymous to and omnipresent in capitalism - which is the essence of their interconnections and conscientiously maintained. These two institutions - science as in advanced study and practice of sciences mainly relating to the research realm and education as in formal system of socially shaped and promoted sets of information - fundamentally share a one-way relationship of demand and supply, not the other way round, in

the occupational sense of science and technology creating new placement prospects to meet the ends of which society arranges and sponsors a limited scope internship programmes in the name of education. It is kind of a provider-provided hierarchical relationship of epistemological exclusiveness via the essential condition of available jobs as an intervening variable as is just discussed how the androcentric philosophy of men of science to megalomaniacally subdue nature and satisfy their male ego prompted them to indifferently unveil, uncloth and dissect nature of 'her' 'mysteries', and the others, inadvertently making newer, bigger job markets which in turn catalysed bifurcation and expansion of university departments of, initially, science and technology in Europe.

The other half, and, perhaps, the more vital, of maintaining this status quo of vested interest is, of course, political. Science like almost every other institution utilises, and exploits, education for its appropriation. The 'science community' - as is often parochially called as if all the scientists or science practitioners of respective branches of science worldwide agreeably share definite and same upbringing, social background, language, ego, values, interests, sentiments and we-feelings - is the beholder of the receptacle of 'scientific' knowledge and information attached with an optionally impervious stopcock which they, along with other decision-makers as the governmental and corporate sectors - the latter with the most say as the capitalist funders, regulate the release of these information, ideas and concepts to popularise through education as they please in terms of which, how, when, to whom and how much. The scope, manner and quality of educational science training proves to be defining the career graph of a future science researcher, especially, in case of the modern lab-oriented experimental setting where a hypothesis is accepted or rejected on the basis of the interpretation of the average of the readings derived from test-replicas, as it indoctrinate the eyes that determine how one sees into things, reads and records the readings, and the mind and thoughts that determine what one thinks of things or thinks to think about or avoid or ignore and, therefore, how they interpret the recorded data and happenings. A

curious case was the discovery of oxygen. It was English chemist Joseph Priestley who first (among who got the observations of their inquests along this line published to make their claims publicly recognised, of course) chemically isolated oxygen in laboratory, but, kept stubbornly refusing to believe in that himself, because, the heavy influence of the teaching of the idiosyncratic phlogistic convention of the time outweighed first-hand experience and reasoning based on that. Ironically, his better judgement was clouded by his training itself that was supposed to give him clarity of thought instead. Nevertheless, his younger contemporary French chemist Antoine Lavoisier somehow managed to be free of perceived ideas and owned up the reasoned fact that the gaseous substance he had successfully separated was indeed an element called oxygen ('distinct species' in his words actually). And, though, he was the second to separate oxygen from air, it is only for his logical defiance that he is given credit as the discoverer of oxygen. And, also for this fallacy of the deterministic transference and assimilation of 'concepts' from science to education, the discrepancy in training has serially backfired throughout the history of science.

Apart from paying heed to this basic existential needs of training young recruits for and perpetually supplying new blood to the body of advanced study and research of science, education also plays a populist role, again as it does for numerous other institutions, to sensationalise science among wider population and, especially, impressionable school students by conditioning them with wondrous and, alas, unwarranted stories, events and anecdotes incorporated into syllabi as parcels of mythology of science or science-lore. For instance, the electrifying *eureka* moment for the Athenian era intellectual *Archimedes* of *Syracus* - however, evidence shows that the technique of measuring the density of a solid, asymmetric or amorphous object with the help of principle of buoyancy and, thus, verifying its purity had already been invented and in use way before his time. Another popular exhibitionist tale is taught how late-*Renaissance* Italian polymath *Galileo Galilei* exhibited two objects of different weights but made up of same material released from same height touch ground after

same interval of time if fall unhindered from the top of the Inclined Tower of *Pisa*. But, the matter of fact is that he never went up that famous tower his entire life, although, he, indeed, conducted a similar test using an inclined surface and documented in his writings a thought experiment analogising the real and the imagined models of the test. Yet another is the apocryphal apple associated with the discovery of gravity by British scientist *Isaac Newton*. The list is too long to continue with here. Whatsoever, the sensational exhibitionism of these easily stomachable little tales of the mythical history of science attract the attention of general public mind, they unfortunately compromise with authenticity, continuity, time and space reality, philosophy and, sometimes, even technicality of the true history of science, and often undermine the incontrovertible role of generational privilege and hard work to attain access and achieve success in the history and institution of science in favour of the myth of meritocracy.

Now comes the direct technical terms that bind science and education into yet another tie of co-dependence in which the former is once more the theoretician and sanctioner, whereas, to receive and apply whatever and however have been sanctioned, the latter joins the former's tail end. The simplest materialistic effect, which would suffice mentioning here, of technological advancement on education, is the classroom application of teaching aids and tools - corporeal and otherwise. History of education has seen a lengthy line of succession in use of props assisting teachers to elevate their lesson efficacy with the evolution in material culture - from the good old *ostrakon* and reed-*stylus* to paper-printed book and mechanical pencil and pen, from precarious wall surface to magical digital board, from experimental teaching machine to applied programmed learning to open and distance learning made possible through high-end computer-assisted instruction, from humble chart, map, 3D model to sophisticated overhead projector and niche laboratory, from stuffy library to the surreal world of internet on which the entire informational treasure of our history is waiting just one click away from us to be retrieved when and where we choose to. On the other hand, science manoeuvres to ensure its preferred

moral, gender and class colourings through selectively designed and targeted educational materials and programmes about 'safe' and 'scientific' handling of technological machineries, appliances, other innovations and the sundry intended for laboratory, factory, and even domestic, quotidian life.

Mostly, because of the nature of their interrelations and because knowledge has traditionally been equated with power in both occidental and oriental cultures; plus, information has already emerged as the 'post-modernist' new-currency that is even regarded to be potentially capable of instigating yet another world war if so is deliberated by the corporate tycoons; education is caught limping behind science. Only after a new paradigm has replaced the old one and been accepted, followed and supported by a considerable number of scientists, a toned down version of it gets funnelled to be assimilated by in the system of education in terms of textbooks, allied items and methodologies. This whole process of consolidation and internalisation demands time, gets regulated by the interplays among various different economic-politico-cultural determinants and reiterates cyclically. Henceforth, education tags along the footprints of science and gets patronised and used by the latter on its own terms. Science seems to be an elite-washed institution partly, and intentionally, aloof of the mundane society, while education happens to be its poor, neglected and half-forgotten distant xth cousin removed y times, which lives off of the thrown leftovers of the former. This is also true to the status dynamics displayed within the modern university campuses. While, the science and technology departments of the modern universities universally enjoy 'aristocratic' status and are considered of utmost priority by the authorities, the education departments (or schools, as known in some places; 'education' is considered as a discipline and not a system in this particular point of argument), that are still quite new additions to the university administrations and arenas as compared to the science faculties, suffer impoverished infrastructure and are always kept at arm's length both geographically and politically.

Of this 'consecrated' image of science as an exclusive club situated on an ivory tower and joined by a quantity of intellectually superior men who seem to respond to a higher calling of life by devoting themselves to the service of science and are kind enough to dip their fingers into their knowledge 'pensieve' (an allegory borrowed from J. K. Rowling's wizarding world wherein only the most powerful magic-folks own pensieve, a metallic or stony, shallow dish to contain complex enchantments for personal usage) and sprinkle a few droplets over the frugal folks on the occasions of social interactions time and again, the 'utopia' of *New Atlantis* authored by Francis Bacon is the manifesto of the time and is still relevant today, at least, metaphorically. This Baconian Euro-centric (as was everything else then) science fiction speaks of a mythical, recluse land of *Bensalem* of whose prosperity is the doings of the members of the *Salomon's House*, a state-funded college that matches the structure, functions and administration of modern universities and research institutes dedicated to theoretical and applied sciences. As the House Head states, the sole purpose of their life is to conquer, own and cut up the all-knowledgeable nature following 'scientific' methods, accumulate and record or document observations, analyse them and utilise the obtained wisdom for the future betterment of the greater society. The House members have to stick to strict duty-allotments and scrupulously observe a set of codes in terms of dress, behaviour, values etc. There is a certain and definite air of cultic mysticism and secrecy surrounding the House. The other regular inhabitants, who are benefitted by and indebted to the strenuous labour of the House members, have become so dignified and chaste as their overall welfare is secured that the whole land is devoid or free of immorality, dishonesty, obscenity and any other social foulness. Towards the end, the House Head altruistically permits a group of outsider 'guests' to publish the fruits of their works so that the common people of a larger population get enlightened and a new 'relationship' will be cemented between the House and the people. And, who does not know that science fictions can foresee future as well as mirror contemporary morals, or at least, the desired, if not escapist, ones for the author and the like-minded?

On the other side, it has been a totally different story for education, not as a system, but, rather, as a discipline. The traditional role of this discipline, if I may say so in a sense of backward extrapolation, had been production of future teachers who aspired to be so either by choice or compulsion of unavailability of any other choice till much later. There had been about 3 ways to become a teacher. One was the oldest model of favouritism, lineage and social connection - an experienced and influential teacher would select a handful of their favourite students to train for a term. The second was the residential schools for training theological teachers to be - these were more of authoritarian 'moral communities' than makers of teachers. And the reactionary third emerged latest as the day colleges pretty similar to the modern teacher training colleges - they were necessarily meant for people wanting a teaching career in liberal subjects. Until then the discipline remained completely isolated from the universities and, hence, research, that is, educational research as we know now. But, as a result of various forces (I will relieve myself from the unnecessary toil of discussing which as it is no appropriate place for such) these day colleges began to be slowly assumed by the direct administrative control of the existing universities. Soon after this taking over, the universities started to have their own education departments one by one. The 4 foundations of education were consolidated - philosophy, psychology, sociology and history - which are still in vogue. Increasing number of people pursued and was awarded their Doctoral degrees in education, the research in which field tended to be heavily psychologically inclined long after. But, then other educational aspects, such as, curriculum, management, technology, teacher education and, of course, the other 3 foundations, were being attempted by the research candidates. Even after, education as a discipline was perceived of inferior status and provided insufficiently; and this tradition continues to exist till now. This discipline underwent more or less same evolutionary course among the Anglophonic and other western countries outside of which it went down somewhat similar, yet, way more heterogeneous lanes.

But, this paper interests in education as a system, not a discipline. So, back to the concerning context; as just argued and as of now, the system of education is merely a spokesperson, or just a mouthpiece if and when reduced further, working under the indirect control of and echoing not more than the allowed bits of information, ideas, concepts and methods (which, sometimes, get lost in translation) by the institutionalised establishment of science that does do the gate-keeping of its own generationally enriched reservoir of knowledge and knowing. Looking back through the historical looking glass to this paper's delimited period of 200 AD - 600 AD, science and education, in the sense I concern and declared here, happened to exist even back then in Greco-Roman society, albeit, in very

different forms from now, as talked about already. Now, after laying out a few key aspects of the then science and education in Greco-Rome in lateral juxtaposition for this timeline as they are supposed to guide any comparison better, I will successively engage with deeper discussions to trace the then interconnections of science and education in Greco-Roman society, one by one. What was the working equation between science and education back then? Were they entirely aloof of each other's existence? Or, did they seldom come close and share mutualism as desperate measures in desperate times? Or, has there forever been a retro-resonance of their present conditional 'co-dependency' as for the process was in the making?

Table 1: Juxtaposing a few key aspects of science and education in ancient Greco-Roman society temporally ranging from 200 AD to 600 AD

Dimension	Science in Ancient Greco-Roman Society from 200 AD to 600 AD	Education in Ancient Greco-Roman Society from 200 AD to 600 AD
Gradation	Study and practice of advanced science was not graded as such.	Education was more or less divided into three grades: primary, secondary and tertiary.
Curricular aspect	Having learned the scientific knowledge offered by the educational courses, interested people could pursue the path of science mostly individually or under a teacher, benefactor, group or 'school'.	Science, or, better to say, rudimentary of some 'subjects' of science, was incorporated mainly in the secondary and tertiary educational curricula.
Diversification	Science had already been branched into defined, distinct disciplines of mathematics, astronomy, medicine, chemistry, botany, zoology, anatomy, mining and metallurgy, mechanics, physics, architecture etc. - merely nominally, though.	Education mainly offered the traditional Greek curriculum of 'septavium': comprised of <i>trivium</i> and <i>quadrivium</i> .
Popularity	Science, in general, continued to be entitled to ambiguous social status.	Education was becoming so popular that it laid the foundation for a structured and systemised general, public education.
	Science, for its social status of ambiguity, was 'frenemies' with the state; in times enjoying glorious phases of imperial patronisation, in	After facing administrative opposition in the nascent stage, education was generally favoured and even sometimes supported in various

Relationship with the imperial state	other times hitting rough patches of stately persecution. The varying equation in some cases had to do with the subject of pursuance.	different ways by the imperial state to its own advantage.
Incentive	Science primarily excited the grey cells of and rendered the intellectual thrill of knowing to its practitioners. However, people often turned their scientific training into their bread and butter, especially, in medicine, metallurgy, architecture etc.	Education apparently promised different job placements and better future to its clients, nonetheless, failed to keep its promise much often.
Christianity	Science, having rationalism at its core and a pagan cultural lineage as its peripheral shell, was naturally renounced and persecuted by the new state-aided religion, that is, Christianity.	The early 'Christian fathers' knew that education could be weaponised to propagate their religious doctrines and scriptural teachings, and so they did.
Exclusiveness	Science never achieved popularity among the common populace and, due to a good deal of reasons, the practice of many of its branches had to be socially hidden underground, and/or was limited to the menial and/or blue collar classes.	Education broke off of being closely guarded by the private, elite network and arrived at the public forum with the proliferation of new Roman schools. Far from vanishing overnight, social denominations, however, wielded exclusive forces over general public education in different ways.
Power of privilege	The access to science depended on several factors, such as, family resources, background and connections, personal keenness, aptitude and enterprise, availability of competent teachers and training, vocational demand etc.	In spite of the growing attempts for universalisation, faceless forces were still active to monopolise education for the elites.
Failure	Science became corrupt from within by the malignancy of religion and superstition as the mindsets of most of the science practitioners were religiously bent towards irrational prejudices.	The sole goal of education was to discipline the minds of people conforming them to the prevailing norms, and not fostering critical literacy and thinking, and rational individualism as it should have been.

Alexander II once complained against his tutor *Aristotle* publishing his lessons for a wider circulation of his teachings and feared that this would make the bunch of fellows of influence who had the privilege of affording private lessons from the celebrity teacher no better than

the common people in the question of knowledge. The royally appointed teacher *Aristotle* assured his favoured student-cum-the golden prince of *Macedonia* that no one could make out much of those publications unless they had access to the in-person instructions taught in the private morning sessions. This one anecdote is enough to set the tone of immanent

exclusiveness in ancient Greco-Roman science and education as *Aristotle* - a natural philosopher and an educator - was one of the few intellectuals who projected the lengthiest shadows over the Greco-Roman conscience.

Let us leave the palatial classes behind and arrive at *Lyceum* - the still functioning premier educational and research school of the Grecian-Roman world during the early centuries AD, established by *Aristotle* and an ancient prototype of modern universities and research institutes. Wandering around the famous garden of *Lyceum*, where *Aristotle* loved to deliberate his lectures and participate in discussions, we would see that the gents comprised most of the student and researcher strength. Plus, whatever were their new research developments (mainly through contemplative method) in terms of information were consolidated in written form and added to their in-house collection for future use of their future members - the fruits of their labours were not meant to come out for out-people. Moreover, the style of written documentation was deliberately so esoteric and condensed that only an aid of expert-explanation would make them understandable to the learners. This case of internal ensconcing in *Lyceum* was the rule for other prestigious, similar institutes, such as, *Plato's Academy* in *Athens*, *Ptolemaic* dynasty funded *Museum* in *Alexandria* etc., and not an exception. On the opposite, in the educational, external arena, basic curricular 'science' was ornamental.

Like said before, the *Varro* verified secondary schooling comprised *trivium* and *quadrivium* as two groups of seven communal (or traditional Greek) liberal arts - the second of which consisted of only arithmetic, geometry and astronomy from the so-called 'science' stream. And, medicine and architecture (which the moderns consider 'sciences') were two of the three peripheral adjuncts to the *septavium*. With the access deficiency to the advanced 'scientific' research knowledge generated by the higher studies and research institutions which along with their treasured scrolls were necessarily prerogative of monetary luxury and socio-political connection privileges, the mass had to remain satisfied with whatever nominal science knowledge was there to be provided by the

humble public grammar schools run on the backdrop of chaotic, noisy forum.

On the one hand, 'advanced' science was conglomerated but education was graded into 3 stages - primary, secondary and tertiary with more or less compartmentalised curricula. On the other hand, though, science was kind of non-diversely institutionalised and one could pursue science as a gestalt whole, science had already been bifurcated, at least, nominally, into numerous branches, such as, physics, botany, zoology, mechanics, dynamics, physiology, pneumatics and a handful more. This regimentation of science as a non-diverse institution made education much less absorptive of the former for a very long time, and even now.

With growing job creations in teaching, rhetoric, Roman law, shorthand and stately administration, education attracted more students and parents as in clientele force shaping a proto-system of public general education. On the other, science did not openly promise any professional growth of the learners as such - except for metallurgy, medicine and architecture possibly. Science mainly interested people seeking adrenaline drive of intellectual and investigative satisfactions and this particular type of people has typically been numerically much lesser. This rarer eligibility or candidacy or congenital intellect for pursuing science is in turn a culturally constructed concept. So, it created a vicious cycle that perpetuates exclusivity in science allowing much lesser number of entrants to penetrate within from without.

In the question of imperial sympathy, after facing an initial stately resistance, especially, the tertiary grade, education enjoyed state-backing in terms of various official edicts promulgating students' stipends, rendering semi-permanent to permanent architectural properties for conducting teaching-learning, ensuring a minimum professional remuneration for teachers securing their interest and protecting the vulnerable knowledge renderer from being exploited by their guardians clientele etc. All because the state understood that steady systematic education could perpetually produce shrewd-minded state

workers whose minds were conformed to state-ideology. On the contrary, science received positive response, if any, from the imperial state as the state supremo followed paganism which natural sciences had their roots in. Later, with the imperial religion baton exchange from paganism to Christianity science as an entity embodying sets of evolving knowledge and practitioners (followers) got stately persecuted as a whole. Science and education, therefore, went to opposite directions down the path of proliferation across these 400 years.

After Christianity became the in-charge, the early Christian fathers realised and knew very well how to weaponise essence of education to theologically take over the public mind - yet, they were solely interested in theological mind conditioning only, not liberal education. Contrarily, the very rational core of science bothered these clergy blokes extremely whose sole agenda was to brainwash people with irrational fear, that is, the new religion, to the formers' own advantage. The result was inevitable - science and science-folks faced the wrath of these Christian fathers and Christianity. Naturally, the environment was no more conducive of unhindered, critical cerebral exercises that science, or anything else for that matter, demands to prosper. This made science further more impervious.

As discussed before, different branches of science faced different fates. As for example, medicine, being an existential essential, somehow survived, even prospered in terms of newer medical schools. While astronomy held both feared, and hence revered, cultural status and, therefore, limped on in astrological garb, alchemy suffered the most, virtually hid underground and behind mystic obfuscation, and lost the last touch of hands-on practicality (which was the very basis of whatever chemical development achieved) and intellectual exchanges.

In a phrase, science and education were 'dramatically opposite dyad' interlinked by series of non-linear connections that will be explored more as follows. Science was never popular as such during this timeline, whereas, education was discovering newer horizons. Still, education, that seemingly broke off of the

elitist cloister and freed itself from the marble floored villa drawing rooms to appear at the city streets, yet again, got captured inside the iron-chest of privilege by newer means, such as, the poor parents' burden to pay a state promulgated package-fee to the teacher, big bilingual barrier and ethno-lingo bias, unattractive, insufficient and monolithic curricula, unavailability of competent teacher locally, textbooks and other supplies, cultural differences across the empire etc. And, science, although, went through a creative limbo until the medieval Arabic revival, it was later proved to be a necessary incubating pregnant pause for future flourish as in the parlance of music interludes are.

As just discussed, both science and education failed to get 'universalised'. When something itself is not all-accessible, inclusive and open, it cannot be very welcoming of and prone to mixing with others either - the same happened between science and education. Among multiple dissimilarities, they shared few fundamental similarities, unfortunately all bearing negative connotations, such as, Cartesian (the term was coined much later after medieval French philosopher Rene Descartes, though) mind-body dualism with head over hand, class, gender, religion, orality/literacy binary etc.

It is obvious that a slave fuelled culture would abhor manual work and menial labour - Greco-Roman empire was no exception. The *Ionian* heritage of dirty hands which was relayed by the *Athenian* age was a long gone case. Medical teachings were curtailed to lectures only. Dissection, vivisection of cadavers in anatomy classes were only done and demonstrated at the surface level, that too by slaves with workable medical knowledge. Physicians would not collect herbs by themselves anymore; those were outsourced by tribal and forest folks. Making of potions too was done the physician's apprentices and/or slaves. For astronomy and astrology, there already was not much scope using instruments. In virtual absence of modern hypothesis construction procedure, it was mostly practised through naked eye observations and more contemplation for forcefully and, hence, erroneously fitting in the observations into preset theses, not the other way around. Chemical knowledge that took centuries of practical, trial and error procedure

to gain a ground that started with primitive metallurgy of prehistoric aeon, crumbled down to the ashes of alchemy. Instead of donning an acid burn lab-coat and whiling away hours by playing with laboratory apparatuses, alchemists turned mystiques and secretly maintained journals that were practically obscured by the reverence of bombastic literary symbolism.

On the educational front, rhetoric, the blue-eyed tertiary course, became completely devoid of body enactment and, thus of the Greek *Sophistic* tradition. Law too was reduced to the rote learning of the canon - critical debates on real-time world and its dilemmas were cut off from syllabi. The Roman army officers did not need to learn battle-field skills anymore. Their only duty was to give orders properly. In contradiction though, the shorthanders, pen pushers and other blue collar workers had to give a minimal clerical manual labour, if not much.

Obviously, upper class and associated *denarii* (ancient Roman currency) socio-political connections and other cultural privileges got the stronghold of everything including education and science, except for medicine. As an estimate was provided in the 4th chapter of this thesis, the lion's share of the royal house physicians were slaves or freedmen of Greek descent. Slaves having some working medical knowledge could fetch slave-dealers higher price from the potent customers. However, because of their indignant status these people were exploited more than the freeborn Mr. Rome physicians of lesser number. Something similar of much lesser degree could be seen in the way of living of some vagabond fate-gambler who posed as alchemists with the capacity of making gold.

The more we talk about gender disparity the less it will be irrespective of time and space. While United Nations 2023 report on gender disparity index shows that among about 80% of world populace, 9 out of 10 people irrespective of gender hold at least 1 fundamental bias against women, can anything positive or progressive be thought of the ancient Greco-Romans? Nah, it cannot. And, yes, their mentality and attitude were along the expected lines only. They clubbed women along with

non-sapiens animals and slaves in their zoological rungs. The tertiary education was an all-men circle completely devoid of female participants, both as teacher and student. And, as for the institution of science very few random names of individuals and meagre information about them can be sporadically heard of.

Religious (religion roots from irrationalism) tone was another malice that plagued science and education. In spite of the glorious *Ionian* beginning devoid of divinity, it cannot be said that the pagan foundation of Greek science was ever truly atheistic. Same goes for its successor Roman science, although, Rome was famous for its utility and practicality-*philia*. It should be remembered that it was in fire-prone Rome, a Senate member, who formed and owned a fire-fighting bucket-band of slaves, was accused of having illegitimate interest and the fire-fighters were disbanded. Moreover, the maximum of the later imperial science practitioners were Christian clergies (because being a god-man and a member of the Church was the most lucrative and idle job back then and maybe even now) having prejudiced and superstitious bent of mind. As in education, the later Greco-Roman empire saw the rise of Episcopal schools replacing the toddling liberal education in Roman schools. Theology denounced and gobbled up the entirety of the liberal curricula. A common narrative is that orality perpetuates exclusiveness. Yet, the opposite can be said too - literacy is not that economic and, hence, not that inclusive. Being literate demands effort, time and resource to learn to write and the writing soft skills, practise writing to inculcate and retain muscle memories, and procure writing surfaces (if disposable or not reusable) and writing styli, respectively. Literacy too proved to be a hindrance to universalisation of education - an average student coming from a meagre means family could not always afford the writing resources, textbooks (they had to make a copy of the teacher's sample for themselves), time and effort (if they had to help their parents in household chores, farms, workshops etc.). Science shared a paradoxical relationship with literacy which made it tough to struggle for science. At the same time, literacy was expensive, yet, a science researcher had a necessary obligation to document their attained information and knowledge in written

form so that it can be validated and circulated by their fellows.

Back then, science and education shared peculiar connections. Science did not penetrate, the other. Again, at the veneer level, education seemed to supersede or surpass science in the question of popularity. But, at the kernel, science, though, persecuted under the Late Empire, had its breeding ground ready to germinate. Once the seedling sprouted in the hands of the Arabs, there was no looking back. Thereafter, education has kept lagging behind. Therefore, the nature of co-dependence between science and education as we know now

or was not allowed to permeate into education much. On the other hand, science was not very much aware of the general pedagogical reality. They both were outsiders to each other and somewhat indifferent about did not exist back then - it was sort of the opposite - but, the scientific field had already been ploughed and the seed of prosperity had been planted. The rest was just a matter of time.

Now, the nexuses between science and education in ancient Greco-Roman society are to be traced in a tabular form and analysed subsequently as the following.

Table 2: Dimension-wise connections of science and education in ancient Greco-Roman society temporally ranging from 200 AD to 600 AD

Dimension	Interconnections of Science and Education in Ancient Greco-Roman Society from 200 AD to 600 AD
Popularity	In the context of popularity, the Roman schools made way for general public education and education become way ahead of science.
Religion	While pagan religion was a nurturer for Greek science that lent to Roman science wholly and allowed a provision of straight, at least, rudimentary, curricular science, Christianity was tolerant of both science and secular education.
Regressive Commonality	Gender, class, orality-literacy binary, religion etc. contributed to the both individual and mutual exclusiveness of science and education.
Mutual Exclusiveness	Education was largely impervious of science.
Stately Involvement	The existence of an enormous empire played its own role in the nexuses of science and education.
Institution in the Making	Education was more conspicuously an in the making institution by then, whereas, science was more of fragmented virtual thought communities. Both were outsider to each other.

Regarding these dimensions science and education in ancient Greco-Roman were interconnected as discussed briefly below.

Thousands of thousands of words have already been spoken and written by academicians and others on how the ancient geographical society of Greece (conquered cultural predecessor of the Greco-Roman empire) is cultural predecessor of the modern west - philologically, philosophically, religiously, mythologically, genetically etc. Regarding its archaic nexuses between the then science and education, whether their mutual commonalities or quintessential uniqueness Greco-Rome

might have been a cultural precursor to the western modernity, in a way. The past will help to understand the present.

In imperial Greco-Rome, the Roman schools set in motion the initiation of a systematic general public education. I am in no position to confirmedly comment on the percentages of the young populace pursuing education but definitely education was in vogue, whilst, science necessarily did not receive such widespread attention, had a cultural minority status and limped behind education as an intellectual exercise as seen from a populist perspective. When a cultural entity or system becomes closed, it not only digresses from

inclusiveness, but, also becomes conservative and completely unwilling to interact and mix with others. What happened in ancient Greco-

Rome is exactly the same. Beside their own idiosyncratic characteristics, science and education were both affected by the pre-existing exclusivist, regressive forces like gender, class, caste, orality-literacy binary etc. in work as talked about in detail before.

Religion played a role reversal in ancient Greco-Rome chronologically. To be explicit, paganism had been considerably tolerant towards both science and education. With the rise of Christianity, science and liberal education both suffered apocalyptic destruction, one way or another. In the curricular aspect, Grecian pagan education had some science inclusion, however negligible that might be. But, on the flip side, the new Roman Imperial religion, Christianity, coming to power eradicated whatever secular was about education previously including the slight curricular scientific angle.

The Roman Imperial state interfered with education (positively for its own advantage) and science (somewhat sympathetic under paganism and totally intolerant under Christianity) that brought about a sort of homogeneity across the empire. In the ancient Greco-Roman cultures, the educational aspect was an institution of general public education in the process of makings, whereas, science was mainly a few widely dispersed aerosols drifting within the air of thought and these droplets were potent of forming virtual thought community through future possible wider exchanges which already had a subtle curricular connection with education through pedagogy. In a nutshell, in antiquity, Greco-Roman society perspicuously had an overall wide contentious schism existing between science and education.

Conclusion:

Like anything else, science needs pedagogy and education by and large to recruit new entrants as a survival essential; but, for any effective and efficient partnership both of the concerned parties need to be insiders. This, sadly, is not the case even among the modern institutions of globalisation and, science and education are no

exception. In antiquity too, when science and education both were in primitive shapes, this outsider status was way more prominent for one party, namely, science, as compared to populist education for various valid reasons as explained just above. Widely considered as the prototype of the modern west world, the Late Greco-Roman Empire witnessed wide science-education schism as the above inferential.

Undoubtedly, education had won the first lap; science was limping far behind in the race of popularity. But, the thing is, when you are secluded, free from perceived ideas, not missed much, do not have exterior exchanges/interactions, or expectations to fulfil, then, if you have the potential, the loneliness can fuel future flourishes. Science, being a knowledge embodiment of rationalism and logic, had that potential. Being a social cultural recluse and minority, it had to develop a special esoteric language for internal interactions which was illegible for the generic outsiders like education and others. That made the difference in the making of science as an even more elitist, influential institution than education in future when time came.

Co-dependency is a broadened term varyingly defined by various psychological concerns. On an average, co-dependency is a kind of interrelationship mutualism where the sidedness is skewed towards 'the giver'. The other partner is the compulsive 'taker' for whom the relationship often proves to be toxic, depriving and self-sacrificing. As described before, in modern times, the two cultural constructs, science and education, share co-dependency in which education is the deprived co-dependent partner. But, as shown above, in antique Greco-Rome, the relational direction was just the reverse as science was the much more socially obscured partner. So, the co-dependency was just the reverse. The skewedness of favouritism lopsided towards education since science suffered the worst brunt of the opposing exclusivist forces like religious persecution, curricular exclusion, barrier of casteism, women's social invisibility and such. Notwithstanding, since the Arabic revival, science flourished rapidly in the west leaving behind education ever after.

To conclude, it can be safely asserted the connections of science and education in ancient Greco-Roman society have been elucidated in detail. As discussed, there was a type of skewed connection, namely, a co-dependency between science and education in ancient Greco-Rome, but, still, there are scopes open for further researches on the same.

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RURAL – URBAN MIGRATION AND ITS IMPACT ON URBAN ENVIRONMENT: A CASE STUDY OF JAMSHEDPUR CITY

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Abstract

Migration is one of the main drivers of urbanization, industrialization and economic development. In recent years cities have come to be considered as engines of economic growth as urban areas. Rural and urban migration are important dimensions of migration trend. The urban population of the country shot up as such a high rate due to migration of population from rural to urban areas. Jamshedpur is one of the most important industrial and urban center in India. Tata Nagar was the sole urban node for many decades till villages within its vicinity transformed into urban agglomerations. The concentration of employment opportunities in Jamshedpur urban area attracts several migrant labourers to the city. The present paper aims to analyze the impact of migrants on the environment of Jamshedpur. Urban areas cannot provide sustainable livelihood and appropriate living conditions to all migrants. Migration has some negative impact on people and society and as well as the surrounding environment. This paper based on primary data collection and secondary various Data.

Keywords: migration, urbanization, rural, livelihood, environment

1. Introduction

Migration from rural to urban areas is a defining feature of urbanization in developing countries like India. People migrate in search of employment, education, healthcare, and improved living standards. However, rapid and unplanned migration often creates environmental stress in cities. Jamshedpur, known as the ‘Steel City of India’, attracts migrants from rural Jharkhand, Bihar, West Bengal, Odisha, and Uttar Pradesh. This inflow has significantly influenced the city’s demographic structure and urban environment.

The present study focuses on understanding the patterns of rural–urban migration in Jamshedpur and assessing its environmental consequences.

2. Study Area: Jamshedpur City

Jamshedpur is located in East Singhbhum district of Jharkhand at the confluence of the Subarnarekha and Kharkai rivers. Established in 1919 by Tata Iron and Steel Company (now Tata Steel), the city developed as a planned

industrial township surrounded by rapidly growing unplanned settlements.

Key features of the study area:

- Industrial hub dominated by steel, engineering, and allied industries
- Population growth driven mainly by in-migration
- Presence of both planned (Tata-controlled) and unplanned residential areas
- River-based ecosystem vulnerable to pollution

3. Objectives of the Study

The main objectives of this study are:

1. To analyze the trends and causes of rural–urban migration to Jamshedpur.
2. To examine the impact of migration on the urban environment.
3. To identify major environmental problems arising due to migration-induced urban growth.
4. To suggest measures for sustainable urban environmental management.

4. Data Sources and Methodology

The study is based on secondary data collected from:

- Census of India (2001, 2011)
- Jamshedpur Notified Area Committee (JNAC) and Jamshedpur Utilities and Services Company (JUSCO) reports
- Jharkhand State Urban Development reports
- Research articles, books, and government publications
- A descriptive and analytical approach has been adopted. Migration trends and environmental impacts have been analyzed using tables, maps, and thematic interpretation.

5. Migration Characteristics and Trends

5.3 Rural–Urban Migration Characteristics (Census 2011)

The composition of migrants in Jamshedpur reveals the dominance of rural–urban migration streams, reflecting the city’s role as a major industrial and employment hub.

Table 5.1: Migrant Population Composition in Jamshedpur (2011)

Migration Stream	Share (%)
Rural to Urban	62
Urban to Urban	24
Intra-district	9
Inter-state	5

Source: Census of India, Migration Tables, 2011

The data clearly indicate that rural-to-urban migration constitutes the largest share, highlighting the significance of push factors from rural areas and pull factors associated with industrial employment.

5.1 Migration Trends

Jamshedpur has witnessed consistent population growth over the decades, primarily driven by migration associated with industrial expansion, particularly around Tata Steel and related ancillary activities.

Table 5.2: Population Growth and Migration in Jamshedpur (2001–2011)

Year	Total Population	Percentage Growth	Major Source of Growth
2001	1,104,713	92.8%	Natural increase + Migration
2011	1,337,131	21.0%	Predominantly migration

Source: Census of India

The data suggest that although growth rates have moderated over time, migration continues to be the principal driver of urban expansion.

5.2 Causes of Migration

The causes of migration to Jamshedpur can be broadly categorized into economic, social, and environmental factors. Economic opportunities in industries, construction, transport, and the informal sector act as strong pull factors. Simultaneously, rural distress—manifested in poverty, unemployment, and land fragmentation—pushes populations toward urban centers. Social factors such as access to better education, healthcare, and urban

lifestyles further encourage migration. Additionally, environmental stressors such as droughts and declining agricultural productivity in rural areas intensify migration flows.

6. Impact of Rural–Urban Migration on Urban Environment

6.1 Growth of Slums and Informal Settlements

Migration-induced population pressure has significantly contributed to the expansion of slums and informal settlements, particularly in Mango, Jugsalai, Bagbera, and parts of Adityapur.

Table 6.1: Slum Population in Jamshedpur (2011)

Area	Estimated Slum Population	Share of Urban Population
Mango	120,000	High
Jugsalai	65,000	Moderate
Adityapur	70,000	Moderate
Other Areas	45,000	Low

Source: Census of India, Slum Primary Census Abstract, 2011

These settlements are often characterized by inadequate access to basic amenities, resulting in poor living conditions and environmental degradation.

6.2 Land Use Change and Urban Expansion

Rapid migration has accelerated land-use transformation in Jamshedpur. Agricultural and forest lands are increasingly being converted into residential areas. Encroachment along riverbanks and low-lying regions has become common, leading to the loss of green spaces and ecological imbalance. These changes are largely unplanned and reflect gaps in urban governance and planning frameworks.

6.3 Water Resources and Environmental Stress

The growing population has significantly increased water demand, leading to both quantitative and qualitative stress on water resources, including the Subarnarekha River and Kharkai River.

Table 6.2: Water Demand and Supply in Jamshedpur

Indicator	Estimated Value
Daily Water Demand	~350 MLD
Available Supply	~280 MLD
Water Deficit	~70 MLD

Source: JUSCO Annual Reports

Water pollution has intensified due to domestic sewage discharge, industrial effluents, and solid waste dumping along riverbanks.

6.4 Solid Waste Generation

The increase in migrant population has resulted in a substantial rise in solid waste generation, placing additional burden on municipal management systems.

Table 6.3: Solid Waste Generation in Jamshedpur

Year	Waste Generated (TPD)
2001	~350
2011	~500
2021	~650

Source: JNAC & Urban Development Reports

Inadequate waste management infrastructure has led to open dumping, clogged drainage systems, and increased environmental health risks.

6.5 Air and Noise Pollution

Air and noise pollution levels in Jamshedpur have increased significantly due to the growth in vehicular traffic, industrial emissions from steel and ancillary industries, and ongoing construction activities. These factors collectively contribute to deteriorating environmental quality and pose serious public health concerns.

6.6 Spatial Distribution of Migrant Settlements

The spatial distribution of migrants in Jamshedpur reflects uneven urban development. Areas such as Mango, Jugsalai, and Bagbera exhibit high concentrations of migrants, while Adityapur and Parsudih show moderate concentrations. In contrast, planned township areas have relatively low migrant presence, highlighting socio-spatial disparities within the city.

7. Environmental and Social Consequences

Rural–urban migration has led to multiple environmental and social challenges. These include degradation of urban environmental quality, increased vulnerability of migrants to

health risks, growing pressure on civic infrastructure, and the expansion of urban poverty and informal employment.

8. Research Methodology

8.1 Nature of the Study

The study is analytical and descriptive, focusing on long-term migration trends and their environmental impacts.

8.2 Data Sources

The analysis is based on secondary data from Census of India (1901–2011), Slum Census 2011, JNAC reports, JUSCO reports, Jharkhand State Pollution Control Board publications, and relevant academic literature.

8.3 Methods of Analysis

The study employs decadal growth rate analysis, migration stream analysis using census data, and evaluation of environmental indicators such as water demand, waste generation, and slum growth. Spatial analysis is supported through cartographic techniques.

9. Results

9.1 Migration-led Urban Growth

Jamshedpur experienced rapid population growth between 1911 and 1961, coinciding with industrial expansion led by Tata Steel. Post-1991 growth continues to be influenced by migration, especially in informal and service sectors.

9.2 Expansion of Slums

Approximately one-fourth of the city's population resides in slums and informal settlements, indicating a strong link between migration and unplanned urbanization.

9.3 Environmental Stress Indicators

The study identifies significant environmental stress, including a water deficit of about 70 MLD, doubling of solid waste generation since 2001, and increasing river pollution levels.

10. Discussion

Rural–urban migration in Jamshedpur presents a paradox. While it supports industrial growth and economic development, it simultaneously contributes to environmental degradation and infrastructural stress. The coexistence of planned and unplanned settlements highlights uneven urban development. Migrants, largely engaged in low-income occupations, often reside in environmentally vulnerable areas, increasing their exposure to risks.

11. Conclusion

Rural–urban migration has been the primary driver of urban growth in Jamshedpur since the early twentieth century. While it has facilitated economic expansion, its unregulated nature has led to serious environmental challenges such as slum proliferation, water scarcity, and pollution. Sustainable urban development requires integrated planning, improved governance, and enhanced service delivery in migrant-dominated areas.

12. Suggestions and Policy Implications

- Development of affordable housing for migrants
- Upgradation of slum infrastructure
- Strengthening of sewage and waste management systems
- Restoration of river ecosystems
- Promotion of rural development to reduce distress migration

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ENHANCING INNOVATION THROUGH ENTREPRENEURSHIP AND HUMAN CAPITAL DEVELOPMENT

(With Special Reference to Youth of Lucknow)

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Abstract

Purpose – This study explores the connection between human capital and entrepreneurship by identifying the components of human capital. Additionally, it investigates the contribution of entrepreneurship to the development of innovation among the youth in Lucknow.

Design/methodology/approach – The researcher conducted a quantitative study using a custom questionnaire and a sample of 404 individuals between the ages of 18 and 35. The study drew upon a comprehensive review of previous research and practices in the field of human capital and entrepreneurship. The gathered responses were analyzed through the use of structural equation modeling (SEM).

Findings – The study identified three crucial components of human capital development required for entrepreneurship. These factors were determined by analyzing previous literature and were further validated through exploratory factor analysis (EFA), which revealed skills, education, and competence as key elements of human capital development. Moreover, the results also show that there is a significant relationship between entrepreneurship and innovation.

Research limitations – The study was conducted using a quantitative approach and relied on data collected from a sample of 404 young individuals from Lucknow city. As the study focused on a specific social field, the findings cannot be easily generalized to other areas without further research.

Practical implications – The primary goal of the study was to identify the fundamental factors of human capital development necessary for entrepreneurship, with the purpose of promoting innovation. This, in turn, can lead to the creation of employability opportunities and generate value.

Originality/value – There is a scarcity of empirical evidence linking entrepreneurship with the growth of human capital, particularly concerning the youth population of Lucknow. As such, this study has significant relevance for enterprise assistance organizations that seek to keep up with the demands of entrepreneurs who are striving to establish and grow their businesses. The findings of this research can inform and guide the development of support services and training programs that facilitate the cultivation of essential human capital skills required for successful entrepreneurship among young individuals in Lucknow.

Keywords: Entrepreneurship, Human capital development, skills, competence, education and innovation. Introduction:

A country's potential to foster to a large extent is determined by the size and quality of its youth population. Youth have always been taken as the most fundamental component of any nation's population. Youth are necessarily the backbone of a nation who through their energy and passion brings out the dramatic alterations in a nation and the way it functions. Youth being energetic, artistic, innovative, enthusiastic and dynamic in nature constitute the most crucial part of the population. India seems to stand at an advantage because of its huge youth population which is higher than any other nation. India's population is predicted to grow and contribute 17.97% of the total world population by 2030. Not just the overall population, India is expected to record increase in the percentage of its youth population as well. Every third person in every city of India is categorized to be a 'youth' and therefore around 33% of the country's population comprises of youth. Youth, if properly guided and provided the necessary environment that enhances their abilities, skills and capability of working in an efficient environment, can bring socio-economic revolution in the country. While, on the contrary, youth if not directed properly, can bring hurdles in promoting the social, human and economic capital, increase the number of jobless people which increases the level of crime rate, increase in poverty etc. Youth may be defined as people aged between 13-35 years, by the Government of India. But in this research paper, youth is defined as people aged between 18-35 years. After all, today's youth will be the future of India, tomorrow.

Opportunities exists in the environment and wait to be discovered, and those with a superior human capital can discover these opportunities (Chitsaz, Liang, & Khoshroor, 2017). In other words, those who enjoy a high level of human capital will identify more businesses in a given period of time. Human capital is defined as a series of knowledge and skills acting as input which leads to outputs such as decisions for self-employment and developing entrepreneurial activities (Ucbasaran et al, 2008). Human capital affects the growth of societies more than any other factor and is a major motivation for people to choose careers (Estrin et al, 2016). It can be claimed that human capital shows one's acquired knowledge, created through competency,

attitudes, mental agility, and problem-solving skills, and is an important resource for firms' innovation and regeneration (Unger et al., 2011). Human capital is not a physical, neither a financial capital but the knowledge, skill, and self-efficacy of individuals (Hosseinpour and Abdollahi, 2015).

Human capital development is critical to the growth of economies in both emerging and developed countries. Human capital was traced back to the 17th century to highlight the cost of lost life in war and other forms of mortality. Contributors to Economics of Human Capital proposed techniques for investing in people in order to earn a return (Khayinga & Muathe, 2018). The concept of human capital and its relationship with success has been a subject of interest for many researchers in the field of entrepreneurship (e.g. Unger et al., 2011). As suggested by Kwon (2009) human is the economic variable charged with the responsibility of overseeing economic activities involving production, consumption and transaction. It can, therefore, be inferred that human capital is a factor of production that can be made more efficient once investments are made in it (Kwon, 2009). Shane and Venkataraman (2000) said, the phenomenon of entrepreneurship has lacked a conceptual framework and there are always attempts how to define entrepreneurship in complex way. However, defining entrepreneurship is an important question. Among many definition, we want to share the opinion of Audretsch and Thurik (2001) who stated that Entrepreneurship encompasses the inherent capability and willingness of individuals, whether independently or in teams, both within established organizations and beyond, to identify and generate fresh economic prospects. These opportunities may manifest through new products, new production methods, new organizational schemes and new product-market combinations.

The major reforms leading to the liberalisation of the Indian economy were passed in the year 1991, the country had witness various unstable governments at national level which hampered its policies and progress. It was in year 1999, when a national party with a decisive mandate came at centre and India started to adopt policies for encouraging innovation and entrepreneurship in the country. In the twenty-

first century, geography of innovations started to change as innovations from emerging nations like China, India and Brazil started to get recognition in the world (Prabhu and Jain, 2015). Innovation has been defined in many ways by authors. However, Yeoh & Mahmood defined innovation as an introduction of new products, searching out unique working methods and techniques, exploring new ideas to solve complex issues, identifying performance gaps, mobilizing support for innovative ideas and transforming innovative ideas into useful applications (Yeoh & Mahmood, 2013). This definition is adopted as it fit for the study.

Review of Literature:

Human capital seems to have a direct relationship with the skills, education, knowledge and abilities of an individual (Fairlie and Robb, 2008). As a result of this perception of human capital, entrepreneurship researchers have been concerned about the relationship between human capital and business success (Ployhart and Moliterno, 2011). The human capital theory suggests that business performance is influenced by an individual's intellectual capital. The basic human capital theory which is a refinement of the marginal-productivity theory has since been become a dominant means of understanding how wages are determined. The theory was largely shaped by Gary S. Becker, an American student of Theodore Schultz. The human capital theory, views schooling and training as an investment in skills and competences (Becker, 1964). It holds that earnings in the labour market are dependent upon the individual's information and skills set. It is further argued that, based on rational expectations of returns on investment, individuals make decisions on the education and training they receive as a way of augmenting their productivity that is, that investments in human capital depend on the costs of acquiring the skills and the returns that are expected from the investment. Thus, Human capital is a core factor that influences the entrepreneurial process since it can increase the capability to perform entrepreneurial tasks, exploit potential opportunities, acquire other resources, such as financial and physical capital, and assist in the accumulation of knowledge and skills (Brush et al., 2001).

Human capital enhances entrepreneurs' ability to take advantage of new opportunities and helps them access physical and financial resources much easier and acquire new knowledge and skills. Ucbasaran et al. (2008) examined entrepreneurial opportunities and concluded that the different dimensions of human capital are related to the identification and incorporation of entrepreneurship opportunities. Consequently, one of the factors affecting the development of entrepreneurial activities is human capital which not only prepares the conditions for identification, evaluation, and exploitation of diverse entrepreneurship opportunities, but also affects people's entrepreneurial intention and behaviors. In line with this hypothesis, Hindle et al. (2009) assert that the process of entrepreneurship development is formed by human capital. Also, Hosseinpour and Mohammadi's (2015) studies showed that human capital with knowledge, skills, and self-efficiency can lead to entrepreneurial behaviors. Consistent with the present study, Chitsaz et al. (2019) contend that human capital increases competencies for discovering and utilizing opportunities and helps people access other useful physical and financial resources easier and acquire new skills and knowledge. In general, entrepreneurs with high levels of human capital are more likely to be exploiting a business opportunity (Acs et al., 2005). Entrepreneurship expresses the individual's intention toward the search for new and better business opportunities, through the search for the resources necessary to exploit these opportunities. This process can be supported through human capital implementation and training strategies (Obisi and Anyim, 2012), which favor the exchange of notions and open up opportunities for innovation (Hormiga et al., 2011).

In a constantly changing world, innovation is no longer optional, it is an inevitability (McKeown, 2008). Entrepreneurship exists in various environments, leading to economical growth through a variety of innovations created by people in response to economic situations (Shepherd et al, 2008). The study of Zhao (2001) state that entrepreneurship and innovation are complementary, and a combination of the two is vital to success and sustainability in today's dynamic and changing environment. Makhdoom et al. (2019) study

suggests that entrepreneurial personality traits have a direct positive impact on innovative activities. So, another important implication for the entrepreneur is also generated that he/ she should be proactive, innovative and risk-taker, as these traits also encourage innovation. Research studies do indicate that entrepreneurship and innovation go hand-in-hand (Kwaku and Ko, 2001); one feeds the other. However, Landström et al. (2012) argue that there is a need for more deeply integrating innovation and entrepreneurship and thus opening the path to developing "entrepreneurship by opportunity" in this field of research.

Conclusively, Entrepreneurship can grow and be sustained only when the human capital is properly harnessed, nurtured and developed. Without a well-developed human capital, entrepreneurship would remain a distant dream (Obisi and Anyim, 2012). Individuals who have higher knowledge, skills, and self-efficacy, act with more innovation and solve problems more quickly (Alpkan et al, 2010). Innovation is part of entrepreneurship and the individual is the main driver, because through his or her knowledge and skills he/she allows companies to effectively exploit technology (Becker, 2009). In addition, Brunnsweiler (2008) stated that lack of effective and efficient human capital prevents entrepreneurship, innovation and creativity which consequently prevent diversification. Thus, this particular study fulfils the gap by helping in surveying which particular components are competent for development of human capital and establishing their correlation with entrepreneurship, which play vital role for innovation.

Research objectives:

Following are objectives of the study-

- To identify the factors affecting human capital development for youth of Lucknow district.
- To analyse the relationship between factors of human capital development and entrepreneurship for youth of Lucknow district.
- To analyse the relationship between entrepreneurship and innovation for youth of Lucknow district.

Research methodology:

This empirical study follows a positivistic-quantitative research design that is exploratory and descriptive in nature. It utilizes a deductive approach to test the hypothesis and adopts a cross-sectional study assumption to achieve its objectives. 404 eligible responses were analysed to attain the objective and testing the hypothesis. The data was collected through questionnaires, and the analysis was conducted using SPSS and AMOS software. The reliability of the data was tested using Cronbach's alpha, while structural equation modelling (SEM) was used to test the null hypothesis. The following null hypotheses were investigated in an attempt to achieve the above objective:

1. H₀ = There is a no significant relationship between skills and entrepreneurship for youth of Lucknow district.
2. H₀ = There is a no significant relationship between education and entrepreneurship for youth of Lucknow district.
3. H₀ = There is a no significant relationship between competency and entrepreneurship for youth of Lucknow district.
4. H₀ = There is a no significant relationship between entrepreneurship and innovation for youth of Lucknow district.

A self-constructed instruments (**Table 1**), based on the cited literature sources, and existing measuring instruments were used in this study to measure the variables. Statements were modified and simplified to avoid ambiguity and confusions among respondents.

Table 1: Summary of Measuring Instrument

CONCEPT	CONSTRUCT	Ref. for CONSTRUCT	Ref. of INSTRUMENT
HumanCapital Development	1.Education	Khayinga, C. M., & Muathe, S. (2018).	Mubarik,M. S. (2015).
	2. Skills	Khayinga, C. M., & Muathe, S. (2018).	Mubarik,M. S.(2015).
	3. Competency	AGU, A. O. (2021).	AGU, A. O. (2021).
Entrepreneurship			Yasin, N. A., Ridjal, S., & Jufri, M. (2019)
Innovation			Patel, K. (2010).

Source: Author

Conceptual Framework: -

a. Education and Entrepreneurship:

Davidsson and Honig, (2003) have found correlations between having more years in education, or a higher qualification achieved, and being more likely to set up a business. Similarly, Ucbasaran al., (2008) suggested that entrepreneurs having higher levels of education gave the impression of their ‘innate productivity’ to potential stakeholders in a business. Kourilsky and Walstad’s (2007) research suggested that whereas high school students perceived having higher levels of education as being an important investment for becoming an entrepreneur, actual business owners did not. The evidence from this study has shown that no participants found any of their educational experiences to have inspired them to consider an entrepreneurial career, but some young entrepreneurs recognised that school had taught them necessary knowledge and skills. A contribution is made here to the existing human capital literature, since previous studies have not identified what specific knowledge and skills learned at school may assist an entrepreneurial career. Skills and Entrepreneurship:

According to Nwanaka and Amaehule (2011), possessing skills is crucial in preventing young people from becoming social outcasts. By undergoing vocational training and acquiring skills, individuals can secure employment opportunities, which can help reduce crime rates such as armed robbery, stealing, and

youth unrest. The study's findings also support this idea that acquiring relevant skills can effectively combat social vices in society. Teece (2011) agreed that there are strong links between effective entrepreneurship and human capital development. This is seen in the light that entrepreneurs were not born but were made through skills, education and experiences acquired. Skills and knowledge can be human capital outcomes acquired through investments in formal and non-formal schooling, practical learning and work experience, which contribute to productivity and success (Unger et al. 2011). The authors who have been study how entrepreneurs manage to capture the opportunities offered by technology, focused on the development of skills (Giampaoli et al., 2017).

b. Competency and Entrepreneurship:

Mardikaningsih et al., (2022) highlight the need for MSMEs to develop and enhance their competencies, adopt innovation and technology, and access a supportive business environment to ensure their long-term survival. Huang et al. (2022) provides a comprehensive and holistic model of competencies required for success in the business environment. The study also highlights the importance of development in building and maintaining these competencies in the context of a rapidly changing business environment. The study conducted by Mizser et al. (2022) focuses on identifying the key competences required by young entrepreneurs in the era of digitalization.

c. Entrepreneurship and Innovation:

Entrepreneurship is seen as a way of promoting economic growth through innovation and job creation (Stenholm et al. 2013). According to the Global Entrepreneurship Development Institute (GEDI), there is a strong positive association between entrepreneurship, economic growth and innovation. Young

knowledge and social networks that help in the establishment of successful undertakings that decrease the level of unemployment thereby contributing to economic wellness and innovation (Chauhan & Aggarwal, 2017). **Figure 1** shows the graphic presentation of conceptual model

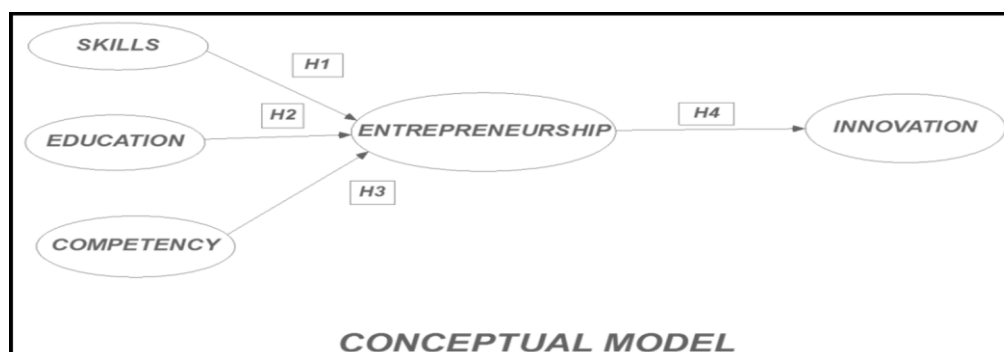


Figure 1: Conceptual Framework

Data Analysis

Demographic Profile of the Respondents:

Gender of the Respondents:

The following **Table 2** describes the age group wise gender distribution of the respondents. Gender is classified in two categories i.e. male and female. It is apparent from analysis that

57% were male and 43% were female respondents from 18-24 age group as participants. In case of 24-35 age group, 53.92% of them were male and 46.08% of respondents were female. Overall respondents from both the age group were; 55.44% of them were male and 44.56% of them were female

Table 2: Gender of the Respondents

	18-24 age group		24-35 age group		Total	
	Frequency	%	Frequency	%	Frequency	%
Male	114	57.00	110	53.92	224	55.44
Female	86	43.00	94	46.08	180	44.56
Total	200		204		404	

Academic qualification of the Respondents:

The academic qualification of the respondents is a crucial factor that deserves attention. Education plays a fundamental role in developing critical thinking skills, long-term strategic planning abilities, and the capacity to respond to situations logically. As shown in **Table 3**, 7.5% of all participants held a minimum qualification of a 12th-grade, while 46.5% were graduates, 29.0% were

postgraduates, and 17% had other qualifications in the age group of 18-24. In the 24-35 age group, 2.94% of participants had at least a 12th-grade education, while 57.35% had a graduate degree, 30.39% held a postgraduate degree, and 9.31% had other qualifications. Overall responses of both age groups, 5.20% had up to a 12th-grade education, 51.98% were graduates, 29.70% were postgraduates, and 13.12% held other qualifications.

Table 3: Academic Qualification of the Respondents

Particular	18-24 age group		24-35 age group		Total	
	Frequency	%	Frequency	%	Frequency	%
12 th Pass	15	7.50	06	2.94	21	5.20
Graduation	93	46.50	117	57.35	210	51.98
Post-Graduation	58	29.00	62	30.39	120	29.70
Others	34	17.00	19	9.31	53	13.12
Total	200		204		404	

Note: Others included: diploma and skilled ersonal.

Occupation of the Respondents: Table 4 shows that, among participants in the age range of 18 to 24, 73.0% were students, 2.0% were government employees, 8.0% were private employees, and 17% were involved in other types of employment. 10.78% of participants in the 24-35 age group were students, 18.62% worked for the government, 43.64% for the

private sector, and 26.06% held other employment, including contract work, paid internships, etc. Overall results for both age groups show that 41.58% of respondents were students, 10.40% had government occupations, 25.99% worked in the private sector, and 22.03% had jobs other than those in the public or private sectors

Table 4: Occupation of the Respondents

Particular	18-24 age group		24-35 age group		Total	
	Frequency	%	Frequency	%	Frequency	%
Students	146	73.00	22	10.78	168	41.58
Govt. employee	04	2.00	38	18.62	42	10.40
Privet employee	16	8.00	89	43.64	105	25.99
Others	34	17.00	55	26.96	89	22.03
Total	200		204		404	

Note: Others included: Trainee, Internship and Contractual or Temporary employee.

Application of Exploratory Factor Analysis:

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.88
Bartlett's Test of Sphericity	Approx. Chi-Square	5520.44
	df	190
	Sig.	.000

Table 6: Rotated Component Matrix

Items	Component				
	1	2	3	4	5
I1	.885				
I2	.869				
I3	.838				
I4	.812				
I5	.757				
E1		.881			
E2		.853			
E3		.804			
E4		.794			
E5		.730			
C1			.871		
C2			.860		
C3			.840		
C4			.801		
S1				.859	
S2				.830	
S3				.797	
ED1					.826
ED2					.817
ED3					.795
<i>Extraction Method: Principal Component Analysis.</i>					
<i>Rotation Method: Varimax with Kaiser Normalization.</i>					
<i>Rotation converged in 6 iterations.</i>					

Table 5 show the Kaiser-Meyer-Olkin measure result which ensure the sampling adequacy. The KMO = .883 which categorised under “great”. Bartlett’s test of sphericity, $\chi^2 =$ **Table 6** shows the factor loadings after rotation. The items that cluster on the same components suggests that component 1 represents - innovation, component 2 represents - entrepreneurship, component 3 represents - competency, component 4 represents – skills and component 5 represents – education.

5520.440, $p < .001$, indicated that correlations between items were sufficiently large for principal component analysis.

Evaluating Measurement Model: The first step in SEM analysis is to validate the measurement models of each construct. The process of SEM starts with the Confirmatory Factor Analysis (CFA) to ascertain the construct validity and Goodness-of-fit of model. Confirmatory Factor Analysis (CFA) was computed using AMOS to assess the measurement model (Figure 2).

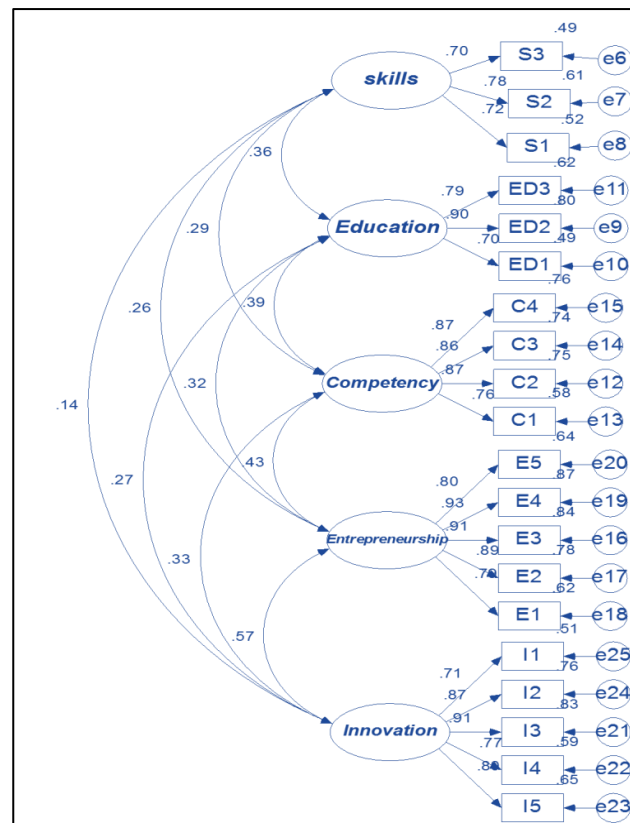


Figure 2: Measurement Model – CFA

The model-fit measures were used to assess the overall goodness of fit (CMIN/df, GFI, CFI, TLI, SRMR, and RMSEA) and all values were within their respective common acceptance levels. The five-factor model (skills, education, competency,

entrepreneurship, and innovation) yielded good fit (**Table 7**) for the data: CMIN/df = 2.568, GFI = .908, CFI = .954, TLI = .946, SRMR = .040, and RMSEA=.062. After assessing model fit, the model is utilized to establish reliability and validity.

Table 7: Assessing Model Fit

Fit Indices	Recommended Value	Source(s)	Obtained Value
P	Insignificant	Bagozzi & Yi (1988)	0.000
CMIN/df	3-5	Marsh and Hocevar (1985)	2.568
GFI	>0.90	Hair et al.(2010)	.908
CFI	>0.90	Bentler (1990)	.954
TLI	>0.90	Bentler (1990)	.946
SRMR	<0.08	Hu & Bentler (1998)	.04
RMESA	<0.08	Hu & Bentler (1998)	.062

The factor loadings in a CFA estimate the direct effects of unobservable constructs on their indicators. This make us know how much of the variance in the indicator is explained by the unobserved construct. The acceptable factor loading is if standardized factor loading that is greater than .70 or explains at least half of the variance in the indicator ($.70^2 = .50$), then your indicator is providing value in explaining the unobserved construct. If it's not explaining

Cronbach's Alpha can be calculated using SPSS whereas Composite Reliability is calculated based on factor loadings in AMOS. Both values are interpreted using the guidelines offered by Nunnally and Bernstein (1994) who suggest 0.7 as a benchmark for a modest reliability applicable. Cronbach Alpha for each construct in the study was found over the required limited of .70 (Nunnally and Bernstein, 1994). The alpha value lies between

Table 8: Loading, Reliability and Convergent Validity					
Items	Factor loading	Cronbach's Alpha		Compositereliability	AVE
SKILLS					
S1	0.720	.835		0.78	0.54
S2	0.782				
S3	0.700				
EDUCATION					
ED1	0.701	.777		0.84	0.64
ED2	0.896				
ED3	0.789				
COMPETENCY					
C1	0.761	.931		0.91	0.71
C2	0.868				
C3	0.861				
C4		0.874			
ENTREPRENEURSHIP					
E1		0.787	.906	0.94	0.75
E2		0.885			
E3		0.914			
E4		0.932			
E5		0.800			
INNOVATION					
I1		0.715	.915	0.91	0.67
I2		0.870			
I3		0.910			
I4		0.766			
I5		0.804			

at least half of the variance, that indicator is contributing little to the understanding of the unobservable construct (Awang, 2015). The standardized factor loading established range between 0.70 and 0.93, which fitted in the threshold of factor loading (**Table 8**). Hence, it can be state that every indicator is loading on its factor.

Construct reliability is usually assessed using composite reliability and Cronbach's alpha.

.77 to .913, which show good reliability. Composite reliabilities ranged from .78 to .94 above the 0.70 benchmark (Hair et al., 2010). Hence, construct reliability was established for each construct in the study. **Table 8** shows the result of reliability. Convergent validity is assessed using Average Variance Extracted (AVE). The AVE indicates how much of the indicators' variance can be explained by the latent unobserved variable. An AVE greater than 0.50 provides empirical evidence for

convergent validity (Bagozzi & Yi, 1988), as the corresponding latent variable explains more than half of the variance in the belonging indicators. AVE is calculated by taken sum of squares of the factor loadings and dividing it by the no. of items in the unobserved latent variable. According to Hair et al. (2016), if the **Discriminant validity**

Henseler et al. (2015) proposed an approach based on the multitrait-multimethod matrix, to assess discriminant validity called the Heterotrait - Monotrait ratio of correlations

average variance extracted is greater than 0.4 and composite reliability is higher than 0.6, the convergent validity of the construct is still acceptable. Hence, the scales used in the present study have the required convergent validity. The result is presented in **Table 8**.

(HTMT). If the HTMT value is below 0.90, discriminant validity has been established between two reflective constructs. All ratios were less than the required limit of .85 (Henseler et al., 2015), as shown in **Table 9**. Hence, discriminant validity was established.

Table 9: Discriminant Validity – HTMT Ratio

	I	E	C	ED	S
I					
E	0.57				
C	0.34	0.43			
ED	0.27	0.33	0.39		
S	0.14	0.26	0.29	0.37	

Note: I= Innovation, E= Entrepreneurship, C=Competency, ED=Education, S=Skills

Structural Equation Modelling (SEM):

After examining the measurement model and modification indices in AMOS, the next step to test a hypothesis would be to evaluate the structural model. This involves specifying the relationships between the latent variables in the

model. It is the second part of the two-part structural equation modeling (SEM) process. In this particular study SEM is utilized through maximum likelihood estimation (MLE). **Figure 3** (Standardised) present the AMOS graphics of structural model and **Table 10** shows the structural model fit.

Table 10: Structural Model Fit

Fit Indices	Recommended Value	Source(s)	Obtained Value	Model Fitness
CMIN/df	3-5	Marsh and Hocevar (1985)	1.919	Good Fit
GFI	>0.90	Hair et al.(2010)	0.931	Good Fit
CFI	>0.90	Bentler (1990)	0.973	Good Fit
TLI	>0.90	Bentler (1990)	0.968	Good Fit
SRMR	<0.08	Hu & Bentler (1998)	0.049	Good Fit
RMSEA	<0.08	Hu & Bentler (1998)	0.048	Good Fit

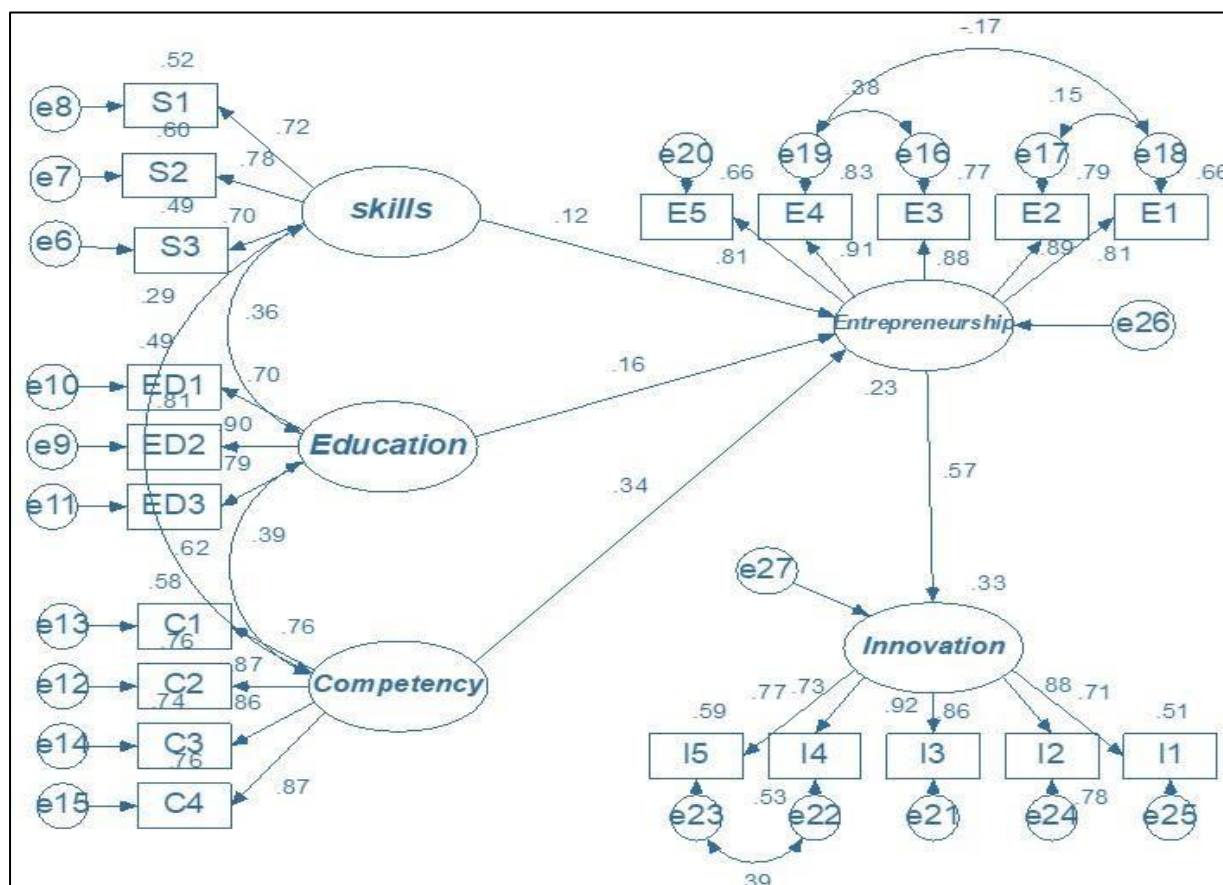


Figure 3: Model in SEM -AMOS Graphic (Standardized Regression Weights)

Testing of Hypothesis:

Table 11: Testing of Hypothesis Through Regression Weights

Construct	Path	Construct	Unstd. Estimates	Stand. Estimates	S.E.	C.R.	p	Output
Entrepreneurship	<---	Education	.118	.155	.045	2.656	.008	Sig.
Entrepreneurship	<---	Competency	.255	.337	.042	6.038		Sig.
Entrepreneurship	<---	skills	.104	.119	.052	2.020	.043	Sig.
Innovation	<---	Entrepreneurship	.664	.573	.057	11.682		Sig.

Testing of First Hypothesis:

H0: There is no significant relationship between education and entrepreneurship

The above result shows the relationship between entrepreneurship and education. The estimate value (unstandardized 0.118 and .155 standardized) indicates a positive association

between the two variables. In other words, as education increases, entrepreneurship is likely to increase as well. The S.E (Standard Error) value of 0.045 indicates the level of accuracy of the estimate. A lower S.E indicates a higher degree of accuracy in the estimate. In this case, the S. E value is relatively low, indicating a high level of precision in the estimate of the relationship between entrepreneurship and

education. The CR (Critical Ratio) value of 2.656 shows the level of significance of the estimate. A higher CR value indicates a greater level of significance. This indicates that the estimate is statistically significant at the 95% confidence level. The P label value of 0.008 shows the level of significance of the estimate in terms of probability. The P value is the probability that the estimate is due to chance. In this case, the P value is less than 0.05, which is the standard threshold for statistical significance. This means that the estimate is highly unlikely to be due to chance and is statistically significant. Taken together, the results suggest that there is a positive and significant relationship between entrepreneurship and education. Thus, the above hypothesis is not supported.

Testing of Second Hypothesis:

H0: There is no significant relationship between competency and entrepreneurship

The result depicts that there is a relationship between entrepreneurship and competency. Specifically, the estimated coefficient for the relationship is 0.255, which indicates that a one-unit increase in competency is associated with a 0.255-unit increase in entrepreneurship. The standard error (SE) for the estimate is 0.042, which is relatively small. This suggests that the estimate is likely to be precise and reliable. In addition, the critical ratio (CR) for the estimate is 6.038, which is relatively large. This suggests that the estimate is statistically significant and unlikely to be due to chance. The p-value for the estimate is denoted by "" which suggests that it is very small. In most cases, this would indicate that the estimate is statistically significant at the 0.001 level, which means that there is strong evidence to reject the null hypothesis that there is no relationship between entrepreneurship and competency.

Testing of Third Hypothesis:

H0: There is no significant relationship between skills and entrepreneurship

The estimated effect size of .104 suggests that entrepreneurship have a positive association with skills outcome. The positive effect size suggests that higher levels of entrepreneurship are associated with a better skill, which could

be anything from higher profits to increased innovation. The standard error of .052 suggests that the estimate of the effect size is relatively precise. This means that fairly confident in the estimated effect size and that it is unlikely to be due to chance or random variation. The critical ratio of 2.020 indicates that the estimated effect size is statistically significant at the .05 level, meaning that there is less than a 5% chance that the observed effect is due to chance. This suggests that the association between entrepreneurship and the skills is likely to be real and not just a fluke. The p-value of .043 provides further evidence of statistical significance. This value suggests that there is only a 4.3% chance of obtaining an effect size as large as or larger than the observed effect size, assuming that the null hypothesis (i.e., no effect) is true. This provides additional support for the alternate hypothesis that entrepreneurship is associated with a skill.

Testing of Fourth Hypothesis:

H0: There is no significant relationship between entrepreneurship and innovation

The estimate value of 0.664 suggests that there is a positive relationship between innovation and entrepreneurship. Specifically, for every one-unit increase in entrepreneurship, there is a 0.664-unit increase in innovation. The standard error value of 0.057 indicates the precision of the estimate value. It suggests that the estimate is likely to be within 0.057 units of the true value. This develop fairly confident in the estimate value of 0.664, as it is likely to be a reliable estimate of the true relationship between innovation and entrepreneurship. The critical ratio value of 11.682 is used to determine whether the estimate value is statistically significant. In this case, the critical ratio value is very high, which means that the estimate is statistically significant at a confidence level of 99%. In other words, the relationship between innovation and entrepreneurship is not due to chance. The high critical ratio value indicates a strong relationship between innovation and entrepreneurship, which suggests that entrepreneurship is an important driver of innovation. This finding is consistent with the widely held belief that entrepreneurship is a driving force for innovation, as entrepreneurs

are often motivated to create innovative products, services, or business models that meet unmet market needs. Thus, the above null

hypothesis is rejected. **Table 12** present the summary of testing of hypothesis

Table 12: Summary and Results

Hypothesis tested	Null hypothesis	Result
1. <i>H0: There is no significant relationship between education and entrepreneurship</i>	Rejected	Support Alternate Hypothesis
2. <i>H0: There is no significant relationship between competency and entrepreneurship</i>	Rejected	Support Alternate Hypothesis
3. <i>H0: There is no significant relationship between skills and entrepreneurship</i>	Rejected	Support Alternate Hypothesis
4. <i>H0: There is no significant relationship between entrepreneurship and innovation</i>	Rejected	Support Alternate Hypothesis

Discussion and Conclusion:

The prime objective of this study is to test the influence of Human Capital Development (HCD) on entrepreneurship, which further led to innovation in context of youth. To test this objective its divided into four hypotheses and SEM a statistical technique is utilized. The result of testing hypothesis states that HCD through its determined factor namely skill, education and competency had an influence on entrepreneurship in a significant and positive way. Moreover, it also found that entrepreneurship and innovation are strongly correlated to each other.

The empirical result depicts that education association with entrepreneurship. In supportive to this, the study by Estrin et al. (2013), it was found that education plays an important role in promoting entrepreneurship in transition economies. The authors concluded that education provides individuals with the necessary skills and knowledge to identify and exploit entrepreneurial opportunities, and that higher levels of education are associated with greater entrepreneurial activity. Similarly, a study by Minniti and Naudé (2010) found that education is positively correlated with entrepreneurial activity in both developed and developing countries. The authors concluded that education provides individuals with the skills and knowledge necessary to identify and

exploit entrepreneurial opportunities, and that higher levels of education are associated with greater entrepreneurial activity. Another study by Bosma et al. (2012) found that higher levels of education are associated with a greater likelihood of becoming an entrepreneur. The authors concluded that education provides individuals with the skills and knowledge necessary to identify and exploit entrepreneurial opportunities, and that higher levels of education are associated with a greater likelihood of pursuing entrepreneurial careers. The significant and positive correlation between skills and competence with entrepreneurship is found by this study. The result is supported by Rauch and Hulsink (2015) study, it was found that entrepreneurs with higher levels of competencies were more likely to be successful in their ventures. The authors concluded that competencies are an important component of human capital development for entrepreneurs, and that they play a crucial role in the identification and exploitation of entrepreneurial opportunities. Additionally, Kautonen et al. (2013) found that entrepreneurial competencies are positively correlated with entrepreneurial intention and behavior. The authors concluded that competencies are an important component of human capital development for entrepreneurs, and that they play a crucial role in the identification and exploitation of entrepreneurial opportunities.

The result also reflects a strong association between entrepreneurship and innovation. In a study by Audretsch and Keilbach (2004), it was found that entrepreneurship promotes innovation by creating new products, services, and processes. The authors concluded that entrepreneurship is an important driver of innovation, as entrepreneurs are more likely to take risks and pursue novel ideas. Similarly, Stam and van Stel (2011) found that entrepreneurship is positively correlated with innovation activity at the regional level. The authors concluded that entrepreneurship plays an important role in promoting innovation, as entrepreneurs are more likely to introduce new products, services, and processes to the market. Another study by Acs et al. (2009) found that entrepreneurship is positively correlated with innovation at the country level. The authors concluded that entrepreneurship is an important driver of innovation, as entrepreneurs are more likely to introduce new products, services, and processes to the market, and to create new industries and markets. Overall, these results provide evidence that human capital development in context of entrepreneurship is important as it has strong influence. Moreover, development of human capital through education, skills and competency provide market and economy more technical and innovative entrepreneurs.

Suggestions:

1. In order to gain from the youthful population, policymakers must develop measures aimed at integrating youth into the workforce with more alternatives and enough resource availability.
2. Develop an innovation hub or incubation centres for aspiring entrepreneurs to provide them with resources, mentoring, and networking opportunities. Such centres can provide resources such as workspace, access to funding, and training programs.
3. Establish partnerships between industry and academia to facilitate knowledge transfer and support research and development activities. This can help in fostering innovation and entrepreneurship by providing

access to research and development facilities, funding, and mentorship.

4. Provide access to finance through government schemes, venture capital, and angel investors to support start-ups and innovation. This can help in providing the necessary funding to start-ups and entrepreneurs who are just starting out.
5. Foster a culture of innovation and risk-taking by recognizing and celebrating successful entrepreneurs and their contributions to the economy. This can be done by organizing events such as start-up competitions, award ceremonies, and networking events.
6. Support entrepreneurship clusters and networks to facilitate collaboration and knowledge-sharing among entrepreneurs and start-ups. This can be done by creating networks of entrepreneurs, start-ups, and investors to share knowledge, expertise, and resources.
7. Develop policies and initiatives that support innovation in sectors such as technology, healthcare, agriculture, and manufacturing. This can be done by creating policies that promote innovation in these sectors, providing funding and incentives for start-ups in these areas, and encouraging partnerships between start-ups and established businesses in these sectors.

Limitation of The Study:

There are certain factors that limit the scope of the study. The following points elaborate on these limitations:

1. Population: The study is limited to only one district, which is Lucknow. This means that the findings of the study may not be generalizable to other districts or regions.
2. The study focuses solely on the population of Lucknow district, which restricts the generalizability of its findings to other districts or regions.
3. Samples: The study focuses on youth aged between 18-35 only, which limits the generalizability of the findings to other age groups. Sampling frame: To

collect data for the study, the university and industries situated in urban and rural areas of Lucknow district were selected as the sampling frame. This means that the findings may not be applicable to other settings.

4. Scale: The scale used to measure human capital development consists only of three factors, namely skill, education, and competency. While these factors are comprehensive, the scale's limitations limit the scope of the study.

Future Scope:

1. Expand the scope of the study: While study provides important insights into the relationship between human capital development, entrepreneurship, and innovation, future research could expand the scope of the study to explore additional factors that contribute to entrepreneurial success, such as social capital, access to funding, or industry-specific knowledge.
2. Conduct a longitudinal study: The study provides a cross-sectional analysis of the relationship between human capital development, entrepreneurship, and innovation. Conducting a longitudinal study that tracks the same group of individuals over time could provide important insights into the causal relationship between these factors.
3. Explore the impact of cultural and social factors: This study focuses on the impact of human capital development on entrepreneurship and innovation, it does not explore the potential impact of cultural and social factors. Future research could explore how cultural and social factors impact the development of human capital, as well as the relationship between human capital development, entrepreneurship, and innovation.
4. Use alternative research methods: While SEM is a powerful tool for exploring the relationship between multiple factors, alternative research methods could provide additional insights. For example, qualitative research methods could be used to explore the experiences and perspectives of entrepreneurs and how they relate to human capital development. Compare results across different contexts: This study focuses on a specific context i.e youth population. Future research could compare the results across different contexts or populations to explore whether the relationship between human capital development, entrepreneurship, and innovation is consistent across different settings.
5. Apply the findings to practical settings: While study provides important theoretical insights, applying the findings to practical settings could provide additional value. For example, the findings could be used to inform policy initiatives aimed at promoting entrepreneurship and innovation, or to guide educational programs designed to help individuals develop the skills and competencies needed to succeed as entrepreneurs.
6. Investigate the impact of different forms of education: The study identifies education as a key factor of human capital development, but does not explore the impact of different forms of education (e.g., formal education, on-the-job training, informal learning). Future research could explore how different forms of education impact entrepreneurship and innovation outcomes.
7. Compare the impact of different types of entrepreneurship: This study does not differentiate between different types of entrepreneurship (e.g., high-growth entrepreneurship, lifestyle entrepreneurship). Future research could investigate how human capital development impacts different types of entrepreneurship and their associated innovation

outcomes.

8. Explore the impact of industry-specific knowledge: The study identifies skills as a key factor of human capital development, but does not explore the impact of industry-specific knowledge. Future research could investigate how industry-specific knowledge impacts entrepreneurship and innovation outcomes, and how it interacts with broader human capital development.
9. Investigate the impact of diverse teams: This study does not explore the impact of diversity in entrepreneurship teams. Future research could investigate how diversity (e.g., gender, race, ethnicity) impacts the relationship between human capital development, entrepreneurship, and innovation.
10. Explore the impact of different levels of entrepreneurship: Particular study focuses on individual-level entrepreneurship, but does not explore the impact of firm-level or ecosystem-level entrepreneurship. Future research could investigate how different levels of entrepreneurship impact the relationship between human capital development, entrepreneurship, and innovation.
11. Investigate the impact of the gig economy: The study does not explore the impact of the gig economy on entrepreneurship and innovation outcomes. Future research could investigate how the gig economy impacts the development of human capital, as well as the relationship between human capital development, entrepreneurship, and innovation.
12. This study emphasizes the value of entrepreneurship in driving innovation. Future research could investigate how different forms of entrepreneurship (e.g., social entrepreneurship, high-growth entrepreneurship) impact innovation

outcomes, and explore the conditions under which entrepreneurship is most effective in driving innovation.

Conclusion and Final Thoughts:

The conclusion and final thoughts section of this study serves as a summary of the key findings and their implications. In this study, the relationship between human capital development and entrepreneurship is explored, specifically in the context of youth. Through analysis, it has been found that there is a significant correlation between human capital development through skill, education, and competency and entrepreneurship. By investing in these areas, young individuals can become better equipped to start and run their own businesses. Moreover, finding also discovered that human capital development is a critical factor in promoting innovation. Entrepreneurs who possess high levels of human capital are more likely to generate and implement new and innovative ideas. In this way, entrepreneurship acts as a vehicle for innovation, driving economic growth and development.

Further, study's results also have important implications for policymakers and practitioners. It emphasizes the need to prioritize and invest in human capital development to promote entrepreneurship and drive innovation, particularly for young people. Policies and initiatives should be developed that support and encourage individuals to acquire skills and knowledge necessary for entrepreneurship. By investing in education and training programs, governments can help in creating an environment that fosters entrepreneurship and innovation, ultimately leading to positive economic and social outcomes. This will not only promote economic growth and development but also help address youth unemployment, a significant challenge in nation and its states.

In addition to this, the study suggests that further research is needed to explore the complex relationship between human capital development, entrepreneurship, and innovation. Additional studies can help policymakers and practitioners better understand the mechanisms through which

human capital development influences entrepreneurship and identify best practices for promoting it. Overall, this study provides important insights into the role of human capital development in entrepreneurship and framing a way towards innovation and has practical implications for policymakers, practitioners, and future research in the field. Lastly, findings demonstrate that human capital development is a crucial component in the promotion of entrepreneurship and innovation, particularly among young people. By prioritizing these areas, individuals, communities, and societies can benefit from increased economic growth and development.

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REMISSION OF SENTENCES AND VICTIMS' RIGHTS IN THE INDIAN CRIMINAL JUSTICE SYSTEM: AN EMPIRICAL STUDY

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Abstract

The remission of sentences constitutes a significant instrument within the Indian criminal justice system, reflecting the State's commitment to reformative justice and humane punishment. However, its implementation has raised critical concerns regarding transparency, uniformity, and the marginalization of victims' rights. This study adopts a socio-legal and empirical approach to examine the constitutional, historical, and jurisprudential foundations of remission, alongside its practical functioning in India. Based on empirical data collected from 390 stakeholders, the research identifies systemic deficiencies such as executive dominance, lack of uniform policies, and inadequate victim participation. The study argues for a balanced, victim-inclusive remission framework aligned with constitutional morality, public safety, and restorative justice principles.

Key Words: Remission of Sentences; Victims' Rights; Criminal Justice System; Executive Clemency; Reformative Justice; Restorative Justice; Victim Participation; Constitutional Morality; Article 21; Article 14; Criminal Procedure Code; Bharatiya Nagarik Suraksha Sanhita; Judicial Review; Public Safety; Penal Policy; Sentencing Policy; Prison Reforms; Rehabilitation and Reintegration; Victim Impact Statements; Transparency and Accountability; Socio-Legal Research; Empirical Legal Studies; Criminal Justice Reform; India.

1. Introduction

Crime in modern societies is a socially constructed phenomenon shaped by evolving moral and legal norms. The Indian criminal justice system operates through a tripartite relationship between the State, the offender, and the victim. While the offender violates legal norms and the victim suffers harm, the State bears the responsibility of ensuring justice, fairness, and social order.

The remission of sentences represents a key mechanism through which the State balances punitive and reformative objectives. It is constitutionally recognized under Articles 72 and 161 of the Constitution of India¹ and statutorily governed by Sections 432–435 of the Code of Criminal Procedure, 1973² and corresponding provisions under the Bharatiya Nagarik Suraksha Sanhita, 2023³.

Although remission promotes rehabilitation and reintegration, its application—especially in serious offences—has raised concerns regarding arbitrariness, political misuse, and exclusion of victims. This study addresses the central research problem: the absence of a victim-centric framework in remission decisions.

2. Historical and Jurisprudential Foundations

The concept of remission in India has deep civilizational roots. Ancient Indian jurisprudence harmonized punishment (*danḍa*) with forgiveness (*kṣamā*), emphasizing moral accountability and sensitivity to victims' suffering. The Constitution institutionalized this tradition through executive clemency powers while subjecting them to the rule of law.

Judicial precedents have clarified that remission powers are not absolute and are subject to limited judicial review⁴. However, modern remission practice remains largely state-centric and offender-oriented, often excluding victims from meaningful participation.

3. Literature Review

3.1 Doctrinal Evolution

Remission originated as a colonial administrative tool and later evolved into a constitutional power governed by statutory safeguards. Judicial decisions such as *Maru Ram v. Union of India*⁵, *Kehar Singh v. Union of India*⁶, *Epuru Sudhakar v. Government of A.P.*⁷, and *Union of India v. V. Sriharan*⁸ have emphasized constitutional limitations on clemency powers.

3.2 Theoretical Perspectives

Scholars justify remission primarily through reformatory theory, viewing it as an incentive for rehabilitation⁹. However, retributive theorists critique it for undermining proportional punishment¹⁰, while restorative justice advocates emphasize victim participation¹¹.

3.3 Comparative Insights

Comparative jurisdictions such as the United Kingdom and the United States provide more structured frameworks for remission and parole, including victim participation mechanisms¹².

3.4 Research Gap

Existing literature remains largely offender-centric and lacks empirical and victim-focused analysis, particularly in the Indian context.

4. Research Methodology

The study adopts a **mixed-method socio-legal approach**:

- **Doctrinal Analysis:** Constitutional provisions, statutes, and case law
- **Empirical Study:** Survey of 390 respondents across Bihar and Jharkhand

Statistical tools:

- Chi-square tests
- Proportion analysis
- Frequency distribution

5. Empirical Findings

5.1 Respondent Profile

The empirical component of the study is based on responses collected from a diverse group of 390 participants representing key stakeholders within the criminal justice system. The composition of respondents reflects a balanced mix of professional expertise and lived experiences, thereby enhancing the credibility and depth of the findings. Legal professionals, including advocates and academicians, constituted the largest segment, accounting for nearly half of the respondents. Their substantial representation ensured a strong doctrinal and interpretative perspective within the dataset. Human rights activists, public prosecutors, victims and their families, as well as officials from police, prison, and judicial institutions, also formed significant portions of the sample, contributing varied institutional and experiential insights.

The distribution of respondents is presented below:

Category	Percentage
Legal Professionals	46.9%
Human Rights Activists	13.8%
Public Prosecutors	11.0%
Victims/Families	10.8%
Officials	12.0%

This diverse representation ensured that the study captured both normative legal perspectives and ground-level realities, particularly in relation to the functioning of remission policies and their impact on victims and society.

5.2 Key Findings

The empirical findings reveal a nuanced and somewhat paradoxical perception of the remission framework in India. On the one hand, a majority of respondents acknowledge the theoretical legitimacy and reformative potential of remission. Approximately 60.5 percent of respondents agreed that remission plays a constructive role in promoting rehabilitation and reintegration of offenders into society. This indicates continued faith in the reformative philosophy underlying modern penology.

However, this normative acceptance is accompanied by strong concerns regarding the manner in which remission is implemented in practice. An overwhelming 92.8 percent of respondents pointed to the absence of uniform remission policies across different states. This inconsistency creates disparities in the treatment of similarly situated prisoners and undermines the constitutional principle of equality before the law.

Further, 66.4 percent of respondents expressed the perception that remission decisions are susceptible to political or personal misuse. This finding raises serious concerns regarding the integrity and impartiality of the decision-making process. The perception of executive overreach or influence weakens public confidence in the fairness of criminal justice administration.

Importantly, the empirical data demonstrate a strong consensus on the need to reform the remission process to include victims' perspectives. A significant 78.2 percent of

respondents supported the introduction of mandatory victim consultation mechanisms prior to the grant of remission. This reflects an emerging shift toward recognizing victims as active stakeholders rather than passive observers in the criminal justice process.

5.3 Victim-Centric Concerns

One of the most striking findings of the study relates to the experiences and concerns of victims within the remission framework. A majority of respondents highlighted that remission decisions often fail to adequately consider the psychological and emotional impact on victims and their families. Approximately 54.9 percent of respondents reported that remission can cause psychological distress to victims, particularly in cases involving serious offences. The premature release of offenders may revive trauma, generate fear of retaliation, and create a sense of insecurity.

In addition to individual harm, the exclusion of victims from remission decisions has broader societal implications. Nearly 69.5 percent of respondents believed that ignoring victims' perspectives contributes to societal dissatisfaction and undermines public trust in the justice system. This indicates that victim marginalization is not merely a private grievance but a systemic issue affecting the legitimacy of criminal justice institutions.

These findings underscore the urgent need to incorporate victim-centric safeguards into remission policies, thereby aligning them with principles of restorative justice and constitutional dignity.

6. Hypothesis Testing

The empirical data were subjected to rigorous statistical analysis to evaluate the research hypotheses. The results are summarized below:

Hypothesis	Result
Lack of transparency & uniformity	Accepted
Victim marginalization	Accepted
Ineffective implementation	Accepted

The statistical tests yielded a high level of significance ($p < 0.001$), indicating that the observed patterns in the data are not due to chance but reflect consistent and meaningful trends.

The acceptance of the first hypothesis confirms that remission policies in India are perceived as non-uniform, lacking transparency, and vulnerable to misuse. The second hypothesis establishes that victims are systematically marginalized within the remission process. The third hypothesis highlights a critical contradiction: although remission is theoretically aligned with reformatory justice, its implementation fails to achieve its intended objectives and raises concerns regarding public safety.

7. Discussion

The findings of the study reveal a deep structural imbalance within the remission framework in India. While remission is normatively justified as a reformatory and humanitarian mechanism, its operational reality presents significant challenges. The coexistence of theoretical legitimacy and practical deficiencies creates a tension that undermines the effectiveness of the system.

A central issue identified is the marginalization of victims. Despite the evolving jurisprudence recognizing victims' rights, remission practices continue to treat victims as peripheral to the decision-making process. This exclusion not only affects victims' psychological well-being but also weakens the moral foundation of criminal justice.

Another critical concern is the lack of accountability in the exercise of executive discretion. The perception that remission decisions may be influenced by political or extraneous considerations raises serious constitutional questions. The absence of transparent procedures and reasoned decision-making further exacerbates these concerns.

Taken together, these factors contribute to a broader legitimacy crisis within the criminal justice system. When remission is perceived as arbitrary or insensitive to victims' suffering, it

risks eroding public trust and undermining the credibility of legal institutions.

8. Policy Implications

The study highlights the urgent need for comprehensive reforms to address the identified deficiencies in the remission framework. A reformed system must prioritize transparency and accountability in decision-making processes. This includes the requirement of reasoned orders, clearly defined criteria, and accessible procedural guidelines.

Equally important is the integration of victim participation into remission decisions. Recognizing victims as stakeholders would enhance procedural fairness and align the system with constitutional principles of dignity and justice.

At the same time, reforms must ensure that the rehabilitative objectives of remission are not compromised. A balanced approach is required, one that harmonizes offender rehabilitation with public safety considerations. This balance is essential for maintaining both the humanitarian and protective functions of criminal justice.

9. Key Policy Recommendations

In light of the empirical findings and normative analysis, the study proposes several key reforms aimed at strengthening the remission framework. These include the development of a national policy to ensure uniformity across states, the establishment of independent review bodies to enhance objectivity, and the introduction of structured mechanisms for victim participation.

Further recommendations emphasize the importance of transparency through reasoned decisions, the use of scientific risk assessment tools to evaluate the likelihood of reoffending, and the incorporation of judicial consultation in serious cases. The study also underscores the need to link remission with rehabilitation programs and to establish post-release monitoring systems to ensure successful reintegration and public safety.

Collectively, these measures aim to transform remission from a discretionary executive privilege into a structured, accountable, and participatory process.

10. Conclusion

The remission of sentences represents one of the most complex and nuanced aspects of criminal justice, requiring a delicate balance between compassion and accountability. While the concept of remission embodies the reformatory ideals of punishment, its current implementation reveals significant shortcomings that undermine its legitimacy.

The findings of this study demonstrate that the exclusion of victims, lack of transparency, and perceived misuse of discretion have weakened public confidence in the remission system. Addressing these challenges requires a fundamental shift toward a more inclusive and accountable framework.

A victim-inclusive, transparent, and constitutionally grounded remission system is not only desirable but necessary. Such a framework would ensure that mercy operates in harmony with justice, thereby strengthening the moral and institutional foundations of the criminal justice system.

Footnotes

1. INDIA CONST. arts. 72, 161.
2. Code of Criminal Procedure, No. 2 of 1974, §§ 432–435 (India).
3. Bharatiya Nagarik Suraksha Sanhita, 2023, §§ 473–475 (India).
4. See *Epuru Sudhakar v. Gov't of A.P.*, (2006) 8 S.C.C. 161 (India).
5. *Maru Ram v. Union of India*, (1981) 1 S.C.C. 107 (India).
6. *Kehar Singh v. Union of India*, (1989) 1 S.C.C. 204 (India).
7. *Epuru Sudhakar v. Gov't of A.P.*, (2006) 8 S.C.C. 161 (India).
8. *Union of India v. V. Sriharan*, (2016) 7 S.C.C. 1 (India).
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12. See Crime Victims' Rights Act, 18 U.S.C. § 3771 (2004).
13. *State of Haryana v. Jagdish*, (2010) 4 S.C.C. 216 (India); *Rekha Murarka v. State of Maharashtra*, (2020) 2 S.C.C. 474 (India); *Bilkis Yakub Rasool v. Union of India*, (2024) SCC OnLine SC (India).

LEARNERS' EXPERIENCES WITH THE LEARNING MANAGEMENT SYSTEM IN IGNOU'S OPEN AND DISTANCE LEARNING FRAMEWORK: A CASE STUDY OF THE ONLINE MBA PROGRAMME AT REGIONAL CENTRE DEOGHAR, JHARKHAND

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Abstract

The present study examines the functioning of the Learning Management System (LMS) within the Open and Distance Learning (ODL) framework of the Indira Gandhi National Open University (IGNOU), with specific reference to learners enrolled in the Online MBA (MBAOL) programme under IGNOU Regional Centre, Deoghar, Jharkhand. The study investigates learners' strategies, advantages of the ODL system, challenges faced by learners, and the usability of the LMS platform used for programme delivery.

Keywords: Open and Distance Learning (ODL), Learning Management System (LMS), IGNOU, MBAOL programme, digital readiness, self-directed learning strategies, learner challenges, digital divide

1. Introduction

The expansion of higher education in India has increased enrolment opportunities; however, several challenges such as limited institutional capacity, geographical disparities, financial constraints, and infrastructural limitations continue to restrict access to conventional higher education. In this context, Open and Distance Learning (ODL) has emerged as a viable alternative to expand educational opportunities for diverse groups of learners.

1.1 Development of ODL in India

Distance education in India evolved from correspondence-based instruction to a technology-enabled learner-centred system. A significant milestone in this transformation was the establishment of Indira Gandhi National

Open University (IGNOU) in 1985, which institutionalized open learning and significantly expanded higher education access across the country. IGNOU operates through an extensive network of regional and learner support centres, enabling access to higher education for geographically dispersed and socially disadvantaged populations. Over time, the university has integrated Information and Communication Technology (ICT) tools such as Learning Management Systems, digital repositories, online counselling, and virtual classrooms to enhance the effectiveness of its ODL programmes.

1.2 Emergence of Online Learning and LMS

The integration of digital technologies has transformed traditional distance education into an interactive and technology-supported

learning environment. The COVID-19 pandemic further accelerated the adoption of online education systems, prompting many institutions to introduce fully online programmes. IGNOU introduced several online programmes including the Online Master of Business Administration (MBAOL). These programmes rely primarily on a centralized Learning Management System (IOPLMS) which facilitates course delivery, communication, assessment, and learner support. In such programmes, the LMS acts as the central academic platform connecting learners, instructors, and educational resources.

1.3 Regional Context of the Study

The study focuses on learners associated with IGNOU Regional Centre, Deoghar (Jharkhand). This regional context is particularly significant because several areas served by the centre face challenges related to digital infrastructure, internet connectivity, and socio-economic disparities. These contextual factors influence learners' ability to effectively access and utilize LMS-based online learning systems.

2. Review of Literature

The review of literature indicates that distance learning systems have evolved significantly with the integration of digital technologies such as Learning Management Systems, video conferencing platforms, and virtual learning environments. Research suggests that when supported by effective instructional design and technological infrastructure, online learning can achieve learning outcomes comparable to conventional education (Rao, 2020).

The literature identifies several advantages of ODL, including flexibility, accessibility, affordability, and opportunities for lifelong learning. It has particularly benefited working professionals, women, and learners from disadvantaged backgrounds (Pesala & Hemamalini, 2025).

However, the literature also highlights several challenges, such as the digital divide, limited internet connectivity, insufficient technological skills, lack of learner motivation, and

difficulties in maintaining effective interaction in online environments. In developing countries like India, these challenges are often intensified by infrastructural and socio-economic disparities (Nayak & Alam, 2022; Ashuni, 2024). Studies also indicate significant regional variation in the effectiveness of ODL systems in India. States with better digital infrastructure show higher participation and success in ODL programmes, whereas regions with limited technological resources face difficulties in fully utilizing online education (Kant, 2021).

3. Research Gap

The review of existing literature reveals that much of the research on ODL in India focuses on institutional development and policy frameworks, while comparatively fewer studies examine learner-centred experiences in fully online programmes. In particular, limited empirical research exists on learning strategies adopted by ODL learners, challenges faced by learners in LMS-based environments, effectiveness of fully online programmes such as MBAOL, and region-specific experiences of learners in areas with limited digital infrastructure such as Jharkhand. Therefore, a detailed investigation of learners' experiences with LMS-based online learning within the IGNOU ODL system was considered necessary.

4. Objectives of the Study

The study was conducted with the following objectives:

1. To examine the learning strategies adopted by ODL learners.
2. To analyze the advantages of the IGNOU ODL system.
3. To identify the problems and challenges faced by learners in the ODL system.
4. To evaluate the structure, usability, and effectiveness of the Learning Management System used in the MBAOL programme.

5. Research Methodology

The study adopted a descriptive–analytical research design supported by a mixed-methods approach. Both quantitative and qualitative techniques were used to obtain a comprehensive understanding of learner experiences. The research was empirical, exploratory, and evaluative in nature. Primary data were collected from learners enrolled in the MBAOL programme under IGNOU Regional Centre, Deoghar.

Sample: The study population consisted of MBAOL learners registered at the Deoghar Regional Centre. A representative sample of learners was selected using non-probability sampling techniques, particularly purposive sampling and convenience sampling (N=159).

Tools for Data Collection:

- Structured Questionnaire (covering demographic characteristics, digital readiness, learning strategies, advantages of ODL, LMS usability, learner challenges, and overall satisfaction). Responses were measured using a five-point Likert scale.
- Semi-structured Interviews (focusing on learner experiences, technological difficulties, and regional constraints).

Reliability and Validity: The instruments were tested through a pilot study. Content validity was ensured through expert review, and reliability was assessed using Cronbach's Alpha.

Data Analysis: Data were analysed using SPSS software. Both descriptive and inferential statistical techniques were employed, including frequency and percentage, mean and standard deviation, one-sample t-tests, correlation analysis, and regression analysis.

6. Survey Findings

6.1 Demographic Profile of Respondents

The demographic analysis provides a foundational context for interpreting learner experiences with the Learning Management System (LMS) within the Open and Distance

Learning (ODL) framework of Indira Gandhi National Open University. The study, based on 159 MBAOL learners from the Regional Centre Deoghar, reflects a diverse, mature, and professionally heterogeneous learner population, which is characteristic of ODL systems in India.

The near-balanced gender distribution highlights the inclusive nature of the programme, suggesting that LMS-enabled ODL provides equitable access to both male and female learners. A significant proportion of respondents belong to middle-aged and senior age groups, indicating the programme's strong appeal among adult and mid-career learners seeking flexibility and career advancement.

Social category representation further reflects the institution's commitment to equity and inclusion, with notable participation from OBC and Scheduled Tribe learners. The diversity in educational backgrounds and employment status confirms that the MBAOL programme caters to both upskilling and re-skilling needs.

Importantly, the majority of learners access the LMS through smartphones. While this reflects current digital trends, it also explains certain usability constraints and technical challenges, particularly in regions with limited digital infrastructure.

6.1.1 Integrated Analysis of Digital Readiness, Learning Strategies, and Advantages of ODL

The combined analysis of digital readiness, learning strategies, and perceived advantages reveals a structural paradox at the core of the ODL experience. On one hand, the system is widely perceived as flexible, accessible, cost-effective, and academically supportive. On the other hand, learners' ability to fully utilize these benefits is constrained by infrastructural limitations, digital access disparities, and institutional support gaps, especially in semi-urban and semi-tribal contexts such as Deoghar.

Digital readiness emerges as structurally constrained rather than individually deficient. Issues such as unstable internet connectivity, limited LMS navigation skills, and delayed

technical support create an environment of digital uncertainty. These factors collectively affect learner confidence and engagement.

Despite these constraints, learners demonstrate adaptive and self-regulated learning behaviours. Strong evidence is observed in self-monitoring, content revision, and help-seeking practices. However, strategic dimensions such as goal-setting, collaborative learning, and

systematic planning remain underdeveloped, indicating limited institutional scaffolding.

At the same time, the advantages of ODL are almost universally endorsed. Flexibility in time and pace, affordability, continuity of education alongside employment, accessibility of LMS resources, and effective academic support systems strongly validate the learner-centred design of the ODL model.

Table 6.1: Perceived Advantages of ODL (Converted from Graph)

Dimension	Agree (%)	Fully Agree (%)	Interpretation
Time Flexibility	High	Very High	Strong acceptance of flexible schedules
Self-Paced Learning	High	Very High	High learner autonomy
Cost-Effectiveness	Very High	Very High	Most strongly endorsed advantage
LMS Accessibility	Very High	Very High	Easy and continuous access
Academic Support	High	Very High	Effective support mechanisms
Overall Learning Needs Fulfilled	High	Very High	Comprehensive satisfaction

6.1.2 LMS Structure, Usability, Learner Challenges, and Overall Satisfaction

LMS Structure, Functionality, and Usability

The findings indicate a high level of learner satisfaction with the LMS design and functionality. Most respondents perceived the platform as user-friendly, well-organized, and easy to navigate. The structured presentation of course content supports self-paced learning, while multimedia components such as video lectures enhance conceptual clarity.

Administrative features—including assignment submission, notifications, announcements, and feedback—are highly valued. Furthermore, the LMS facilitates effective interaction between learners and instructors, contributing positively to academic engagement and outcomes.

Learner Challenges

Despite the strengths of the LMS, learners face several significant challenges. Emotional

factors such as isolation and the absence of face-to-face interaction negatively affect motivation. Time management is a major concern, particularly for working professionals balancing multiple responsibilities.

Technical challenges, especially unstable internet connectivity and system-related issues, emerge as the most critical barriers. Additionally, interaction gaps, delayed responses, language complexity, and stress associated with online examinations further complicate the learning experience.

Overall Satisfaction

Notwithstanding these challenges, overall learner satisfaction remains exceptionally high. Nearly all respondents expressed satisfaction with the LMS-based MBAOL programme and indicated a strong willingness to recommend it to others. This reflects a high level of trust in the system and recognition of its value.

Table 6.2: LMS Usability, Challenges, and Satisfaction (Converted from Graph)

Dimension	Agree (%)	Fully Agree (%)	Interpretation
LMS Usability & Navigation	High	Very High	User-friendly and efficient
Content & Multimedia Quality	High	High	Enhances understanding
Interaction (Peer & Instructor)	Moderate	High	Effective but improvable
Technical Challenges	High	Moderate	Major barrier
Motivation & Engagement Issues	High	Moderate	Affected by isolation
Overall Satisfaction	Very High	Very High	Strong endorsement
Programme Recommendation	Very High	Very High	High perceived value

Table 6.3: Integrated Summary of Key Findings

Study Dimension	Overall Trend	Key Insight
Advantages of ODL	Very High Agreement	Confirms inclusivity and effectiveness
LMS Usability	High Agreement	Supports engagement and learning
Learner Challenges	Moderate to High	Requires targeted interventions
Overall Satisfaction	Very High	Reflects strong learner trust

6.2 Conclusion on Hypothesis Testing

The empirical findings support all four hypotheses of the study:

- **H1:** Learners employ identifiable self-directed learning strategies, indicating functional self-regulation.
- **H2:** The ODL system offers significant advantages in flexibility, accessibility, and learner support.
- **H3:** Learners face substantial challenges across technological, motivational, and interactional dimensions.
- **H4:** The LMS has a significant positive impact on learner engagement and perceived learning outcomes.

6.3 Overall Conclusion of Survey Findings

The survey findings confirm that the MBAOL programme of Indira Gandhi National Open

University effectively operationalizes the principles of ODL by providing a flexible, accessible, and learner-centred educational environment. The LMS serves as a critical enabler of learning, supporting academic engagement, continuity, and performance.

However, the effectiveness of the system is moderated by contextual challenges, particularly those related to digital infrastructure, interactional limitations, and learner support mechanisms. The findings highlight that the success of ODL is not solely dependent on system design but on the alignment between technological infrastructure, pedagogic strategies, and institutional responsiveness.

Overall, the ODL model demonstrates strong potential for inclusive higher education, provided that continuous improvements are made in digital readiness, infrastructure, and learner support systems.

Table 6.4 : Summary of Objectives, Key Findings, Implications, and Recommendations*(Adapted and synthesized from study data)*

Research Objective	Key Findings	Academic / Practical Implications	Policy / Institutional Recommendations
Digital Readiness & Access	Formal LMS access exists, but is constrained by unstable connectivity and limited digital confidence among learners	Highlights the critical distinction between mere access and functional digital readiness	Introduce mandatory digital induction programmes; design low-bandwidth compatible LMS platforms
Learning Strategies	Adaptive, self-directed learning strategies are dominant; however, structured strategic planning remains underdeveloped	Learner autonomy is contingent upon institutional scaffolding and guided support systems	Develop guided learning frameworks and strengthen mentoring mechanisms
Advantages of ODL	Strong endorsement of flexibility, affordability, and academic support systems	Reinforces the effectiveness and inclusivity of the ODL model	Expand public ODL infrastructure and integrate hybrid support mechanisms
LMS Usability & Challenges	LMS platforms receive high usability ratings, yet learners face multidimensional challenges (technical, pedagogical, and engagement-related)	Indicates that LMS effectiveness requires continuous refinement and contextual adaptation	Enhance technical helpdesks, improve platform interactivity, and ensure continuous system upgrades

Table 6.5 : Theoretical Contributions*(Based on region-specific empirical evidence from semi-urban Jharkhand contexts)*

Theoretical Framework	Core Proposition	Empirical Contribution of the Study	Theoretical Advancement
ODL Theory (Open and Distance Learning)	Education can be delivered effectively beyond traditional classrooms through flexible, learner-centered systems	Confirms that ODL is operationally viable in semi-urban contexts, despite infrastructural constraints	Extends ODL theory by integrating context-sensitive challenges such as connectivity and learner preparedness
Digital Divide Theory	Inequality in access to digital resources creates disparities in learning outcomes	Reveals that digital inequality is not limited to access but includes skills, confidence, and usage patterns	Advances the theory from “access divide” to “capability and usage divide” in semi-urban settings
Self-Directed Learning Theory	Learners take initiative in diagnosing, planning, and evaluating their learning	Shows that learners adopt adaptive strategies but lack structured planning and institutional guidance	Refines the theory by emphasizing the role of institutional scaffolding in enabling effective self-direction

Technology Acceptance Model (TAM)	User acceptance of technology depends on perceived usefulness and ease of use	High LMS usability ratings indicate acceptance, but persistent challenges affect sustained engagement	Expands TAM by incorporating contextual barriers such as connectivity and digital literacy
Inclusive Education Framework	Education systems should ensure equitable access and participation for all learners	Demonstrates that ODL enhances inclusion through affordability and flexibility, yet disparities remain	Strengthens the framework by highlighting the need for digital inclusivity alongside physical and social inclusion

8. Suggestions and Recommendations

The findings of the study underscore the urgent need for a structured and multi-dimensional reform approach within Open and Distance Learning (ODL) systems, particularly in semi-urban and resource-constrained contexts. A key recommendation emerging from the analysis is the introduction of mandatory digital orientation programmes for newly enrolled learners. Such programmes would equip students with essential digital skills, familiarize them with Learning Management Systems (LMS), and enhance their confidence in navigating online learning environments.

In addition to learner preparedness, the study highlights the importance of context-sensitive LMS design. Platforms must be optimized for low-bandwidth conditions and mobile accessibility, ensuring that technological barriers do not exclude learners from effective participation. Complementing this, the provision of offline and downloadable learning resources becomes crucial, especially in regions with intermittent internet connectivity, enabling continuity in learning.

The role of institutional support systems is equally significant. Establishing 24/7 technical helpdesks, along with region-specific support coordinators, can substantially reduce learner frustration and improve system usability. Parallely, strengthened academic mentoring mechanisms and regular interactive virtual sessions can bridge the gap between instructors and learners, fostering a more engaging and supportive academic environment.

To further enhance learner engagement, institutions should integrate multimedia content and collaborative tools into their pedagogical practices. These tools not only make learning more interactive but also encourage peer-to-peer engagement and active participation. Expanding community-based digital learning hubs can also serve as a vital intervention, particularly for learners who lack access to personal digital infrastructure.

Continuous improvement of digital platforms is another critical area. Institutions must conduct periodic LMS usability evaluations to identify challenges and implement timely upgrades. Additionally, faculty training in online pedagogy is essential to ensure that educators are well-equipped to deliver effective and engaging digital instruction.

Finally, the study strongly advocates for inclusive policy frameworks that address the needs of marginalized learners. This includes the provision of multilingual learning resources, financial assistance, and targeted support mechanisms to ensure equitable access and participation in ODL systems.

9. Practical Implications for ODL Institutions and Higher Education Policy

The study offers significant practical insights for ODL institutions and policymakers. It emphasizes the necessity of structured digital capacity building as a foundational requirement for effective online education. Without adequate digital literacy among learners and faculty, even the most advanced technological systems may fail to deliver desired outcomes.

Furthermore, the research highlights the importance of context-sensitive LMS design, tailored to the infrastructural realities of semi-urban and rural regions. Institutions must move beyond a one-size-fits-all approach and adopt flexible, adaptive systems that cater to diverse learner needs.

The study also underscores the critical role of robust technical and academic support systems in sustaining learner engagement and success. Continuous policy investment in digital infrastructure, including internet accessibility and institutional technological capacity, is essential to fully realize the inclusive potential of ODL. In this regard, the vision outlined in the National Education Policy 2020 aligns closely with the study's recommendations, particularly in promoting digital learning and equitable access to education.

10. Limitations of the Study

While the study provides valuable insights, certain limitations must be acknowledged. The geographical scope is confined to a single regional centre located in Deoghar, which may limit the generalizability of the findings to other regions with different socio-economic and infrastructural conditions. Additionally, the sample is restricted to a specific academic programme, namely MBAOL, thereby narrowing the diversity of learner experiences captured in the study.

The research adopts a cross-sectional design, which restricts the ability to analyze changes over time or establish causal relationships. Furthermore, the reliance on self-reported data introduces the possibility of response bias, as participants' perceptions may not always accurately reflect actual behaviors or outcomes. The study also has limited qualitative depth, which may have constrained a more nuanced understanding of learner experiences.

Another important limitation is the absence of a direct technical evaluation of the LMS architecture. While user perceptions of usability and challenges are examined, the study does not assess the system from a technological or engineering perspective.

11. Directions for Future Research

Building upon the present study, future research can adopt a more comprehensive and comparative approach. Studies across multiple regional centres would help in identifying contextual variations and enhancing the generalizability of findings. Longitudinal research designs could provide deeper insights into learner performance, engagement patterns, and skill development over time.

In addition, incorporating faculty perspectives would offer a more holistic understanding of the ODL ecosystem, particularly in relation to pedagogical challenges and institutional readiness. The integration of emerging technologies such as Artificial Intelligence (AI) and Virtual Reality (VR) into ODL systems presents another promising avenue for research, especially in terms of enhancing personalization and immersive learning experiences.

Finally, there is a need for systematic policy impact evaluations, particularly in the context of reforms introduced under the National Education Policy 2020. Such studies would help assess the effectiveness of policy interventions and guide future strategies for strengthening digital and inclusive education in India.

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MENTAL AND PHYSICAL EFFECTS OF PILGRIMAGE: A STUDY OF THE KANWAR YATRA TO BAIDYANATH DHAM

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Abstract

Pilgrimage occupies a profound place in the socio-religious fabric of India, serving as a bridge between ancient spiritual traditions and contemporary human experience. Among the myriad sacred journeys undertaken annually, the Kanwar Yatra stands out as one of the largest and most physically demanding pilgrimages dedicated to Lord Shiva. Devotees, known as Kanwariyas, embark on a grueling trek—spanning approximately 105 kilometers from Sultanganj in Bihar to Baidyanath Dham (Deoghar) in Jharkhand—carrying holy Ganga water in a bamboo yoke (kanwar) while observing strict vows of celibacy, vegetarianism, barefoot walking (or minimal footwear), and continuous chanting of “Bol Bam” or “Har Har Mahadev.”

This study adopts an interdisciplinary lens to examine the mental and physical effects of this pilgrimage, integrating insights from psychology, physiology, religious studies, and public health. Drawing primarily on secondary sources—including peer-reviewed literature, expert commentaries, mythological texts, and published pilgrim narratives—and supplemented by thematic insights from in-depth interviews with returning Kanwariyas, the research reveals that the Kanwar Yatra functions as a holistic intervention. Physically, the sustained endurance walking and balanced load-bearing activity appear to enhance cardiovascular fitness, muscular strength, and overall stamina, resembling structured exercise regimens while acting as a form of “compulsive physiotherapy.” Mentally, participants describe marked reductions in stress and anxiety, heightened emotional resilience, a deepened sense of purpose, and moments of inner peace attributed to rhythmic chanting, communal bonding, and detachment from daily stressors. Spiritually, the pilgrimage fosters “spiritual coping,” enabling devotees to reframe life challenges within a sacred narrative of devotion and surrender.

Yet the journey is not without challenges: dehydration, fatigue, musculoskeletal strain, swollen feet, blisters, and occasional injuries emerge as notable risks, particularly amid monsoon heat, overcrowding, and variable medical support along the route. Socially, the yatra cultivates collective identity and cultural continuity, transcending caste and regional divides through volunteer-run camps that provide food, shelter, and mutual aid. These insights position the Kanwar Yatra not merely as a ritual of faith but as a multidimensional phenomenon with therapeutic potential for mental well-being, physical vitality, and societal cohesion. The study underscores the need for integrated health support systems—expanded medical camps, hydration protocols, and awareness campaigns—to maximize benefits while mitigating harms. Ultimately, pilgrimage emerges as an alternative model of holistic health promotion, where spirituality, physical exertion, and communal experience converge to nurture human flourishing in an increasingly fragmented world.

Keywords: Kanwar Yatra; Pilgrimage; Mental Health; Physical Health; Spirituality; Religious Tourism; Baidyanath Dham; Holistic Well-Being

1. Introduction

In the tapestry of Indian spirituality, pilgrimage has endured for millennia as a sacred rite of passage, a quest for purification, and a tangible expression of bhakti (devotion). Unlike routine religious observance, pilgrimage demands embodiment—body, mind, and soul moving in unison toward the divine. The Kanwar Yatra to Baidyanath Dham exemplifies this fusion. Each Shravan month (July–August), millions of Shiva devotees transform into Kanwariyas, shouldering kanwars filled with Ganga jal sourced from the river's banks at Sultanganj. Their destination is Baidyanath Dham in Deoghar, one of the twelve Jyotirlingas, where legend holds that Lord Shiva himself resides in a self-manifested lingam.

The mythological roots of this yatra intertwine with cosmic narratives. One tale traces it to the Samudra Manthan, when Shiva consumed the deadly Halahala poison; devotees emulate this by offering Ganga water to soothe the deity's throat. Another links it to Lord Rama, who carried Ganga water in a kanwar to worship Shiva at Deoghar. A third credits Ravana with originating the practice. Regardless of origin, the yatra symbolizes the soul's journey from worldly impurity to divine purity, from burden to liberation.

For participants, the pilgrimage is no casual outing. It entails roughly 105 kilometers of walking—often barefoot or in simple footwear—under monsoon skies, balancing 10–15 kg of water vessels. Strict disciplines such as fasting (or sattvic eating), periods of silence, celibacy, and incessant chanting amplify the physical and psychological demands. Yet amid the sweat, blisters, and exhaustion lie reported moments of euphoria, communal solidarity, and profound inner peace that linger long after return. Pilgrims frequently describe the journey as a form of penance that burns away impurities and fosters spiritual rebirth.

Scholarly inquiry into the Kanwar Yatra's health impacts remains limited, with most literature framing it as religious tourism or cultural performance rather than a lived intervention for well-being. This study addresses that gap through an interdisciplinary

framework, exploring how prolonged endurance activity, spiritual immersion, and social bonding interact to shape participants' experiences. By weaving psychological theories of resilience with physiological models of exercise adaptation and socio-cultural perspectives on ritual, the research illuminates pilgrimage as a holistic process. In an era of rising lifestyle diseases and mental health challenges, understanding such indigenous practices offers timely insights for public health, tourism policy, and spiritual psychology.

Baidyanath Dham's appeal lies in its accessibility from eastern India and its status as a major Jyotirlinga, drawing millions along the Sultanganj–Deoghar route. The journey's rigor echoes ancient ascetic traditions while mirroring modern endurance activities infused with sacred meaning. This study examines lived narratives of transformation, positioning the Kanwar Yatra as a living laboratory of mind-body-spirit integration.

2. Literature Review

2.1 Psychological Effects of Pilgrimage

A growing body of research affirms that pilgrimage yields substantial mental health dividends. Spiritual practices embedded in the journey—chanting, meditation-like walking, and surrender to divine will—activate mechanisms akin to mindfulness and cognitive-behavioral reframing. Pilgrims often report lowered stress and anxiety, attributing these shifts to detachment from routine stressors and immersion in a purpose-driven collective. Commentaries highlight pilgrimage's capacity to foster emotional regulation and well-being through faith-based coping.

Broader studies on mass religious gatherings, including the Mahakumbh and international pilgrimages such as the Camino de Santiago or Hajj, document reduced perceived stress, enhanced life satisfaction, and greater resilience months after the journey. These outcomes stem from “spiritual coping,” as theorized by Pargament (1997), wherein religious beliefs help reappraise adversity. Rhythmic chanting and communal rituals appear to elevate neurotransmitters like

dopamine and serotonin, contributing to mood elevation and cognitive clarity. Neurophysiological discussions of the Kanwar Yatra similarly suggest improved mood, reduced stress, and enhanced cognitive function through sustained physical activity and devotional focus.

Pilgrimage also promotes psychological resilience by simulating controlled adversity. Enduring physical hardship while maintaining devotional focus builds self-efficacy and emotional stability. Narratives from Kanwariyas describe the yatra as a “detox for the mind,” clearing rumination and instilling inner peace. Personal accounts emphasize lessons in patience, pain tolerance, and self-control, with many returning with heightened motivation and a renewed sense of purpose.

2.2 Physical Effects of Pilgrimage

Physiologically, the Kanwar Yatra constitutes rigorous endurance training. The approximately 105 km trek with balanced load-bearing mimics moderate-to-high intensity activity, potentially improving cardiovascular endurance, muscular strength, and metabolic efficiency. Health experts have described the ritual as “compulsive physiotherapy,” noting that the 100 km barefoot (or minimally shod) walk from Sultanganj to Deoghar can rejuvenate muscles for up to two years afterward. Carrying the kanwar with equal weight on both sides provides balanced exercise, while walking in natural monsoon environments reduces sedentary behavior and offers fresh-air exposure.

Risks, however, are well-documented. Prolonged exertion without adequate hydration or rest can lead to dehydration, muscle cramps, fatigue, swollen feet, blisters, and musculoskeletal strain—particularly among first-time, older, or less-prepared pilgrims. Fasting or restricted diets may compound vulnerabilities. Expert advice consistently emphasizes the need for ample fluids, electrolyte balance, and rest to mitigate these issues, underscoring the importance of supportive infrastructure along the route.

2.3 Psycho-Spiritual Dimensions

Pilgrimage embodies psycho-spiritual integration. Disciplined vows cultivate self-control and patience, while the sacred geography of Baidyanath Dham evokes awe and transcendence. This aligns with Koenig’s (2012) exploration of religion’s health implications, where faith buffers psychological distress. For Kanwariyas, the yatra becomes a moving meditation, fostering eudaimonic well-being—meaning, purpose, and self-actualization. Many describe feeling “closer to God,” with hardships viewed as offerings that purify the soul and invite divine blessings such as good health and liberation from past karma. Stories circulate of physical ailments reportedly alleviated through the journey’s grace, reinforcing the interplay of faith and perceived healing.

2.4 Social and Cultural Dimensions

Socially, the yatra dissolves barriers. Diverse pilgrims—urban professionals, rural farmers, women, youth, and entire families—march together, sharing food, shelter, and stories at volunteer-run camps. This mirrors Turner and Turner’s (1978) concept of *communitas*, generating collective identity and cultural continuity. The shared ordeal strengthens social bonds, combats modern isolation, and transmits lessons in fellow feeling and humanity. Accounts highlight how returning pilgrims receive community care (e.g., foot massages and blessings), with the gains of the pilgrimage believed to extend to family and neighbors. The practice also empowers participants, conferring self-esteem and a sense of agency amid life’s challenges.

Collectively, the literature and narratives portray the Kanwar Yatra as a multifaceted intervention: physically taxing yet restorative, psychologically demanding yet empowering, and socially unifying. Its unique scale and Shiva-centric devotion make it a compelling case for deeper qualitative exploration.

3. Research Methodology

This study employs a qualitative, descriptive-analytical approach focused on secondary data and interview-based insights. Primary data were gathered through semi-structured interviews with 12 returning Kanwariyas

(conducted in 2024–2025 via in-person and telephonic modes in Bihar and Jharkhand regions). Participants represented diverse backgrounds (age 25–65, mixed gender, urban/rural). Interviews explored personal experiences of mental, physical, and spiritual changes, challenges faced, and perceived long-term effects. Thematic analysis (following Braun and Clarke’s framework) was applied to identify recurring patterns such as stress reduction, resilience building, physical rejuvenation, and risks.

Secondary data included peer-reviewed articles on pilgrimage and health, expert commentaries (e.g., from health professionals on muscle rejuvenation), mythological texts (e.g., references in Puranic traditions), news reports, personal pilgrim accounts published in outlets like Medium and Pragyata, and official descriptions of the Sultanganj–Deoghar route. Ethical considerations emphasized informed consent, anonymity, and respectful representation of lived experiences. Limitations include the reliance on self-reported narratives and potential selection bias toward those willing to share; however, triangulation with secondary sources enhances trustworthiness. Future research could incorporate longitudinal follow-ups or physiological monitoring.

4. Results and Analysis

4.1 Mental Effects

Stress Reduction and Emotional Stability. Interviewees repeatedly described a profound sense of detachment from everyday worries upon lifting the kanwar. One 38-year-old male from Patna shared: “The moment I started walking and chanting ‘Bol Bam,’ my office tensions and family pressures melted away. It felt like shedding burdens with every step.” Rhythmic chanting and the single-minded focus on reaching Baidyanath Dham were cited as creating a meditative state that cleared rumination and induced calm. Many reported returning with greater emotional balance, gratitude, and acceptance, aligning with spiritual coping mechanisms. Narratives echoed global pilgrimage findings, with participants noting sustained inner peace and reduced anxiety in daily life.

Psychological Resilience. Enduring blisters, fatigue, and monsoon challenges while upholding vows built notable grit. A 52-year-old female pilgrim recounted: “My feet were swollen and bruised, but the pain became a prayer. I learned patience and strength I never knew I had.” Others likened the yatra to “mental armor,” reporting increased self-confidence, motivation, and adaptability to life’s adversities. Personal accounts, such as a young walker completing 120 km in three days, highlighted lessons in pain tolerance, self-control, and personal growth, with many feeling reborn or closer to their inner self.

4.2 Physical Effects

Improved Fitness and Stamina. Participants and experts described the journey as physically rejuvenating. The balanced load-bearing and long-distance walking were said to strengthen core, legs, and overall endurance. Health professionals have noted that such activity can rejuvenate muscles for years, functioning as natural physiotherapy. Pilgrims reported feeling more energetic and tolerant of physical labor post-yatra, with some claiming relief from pre-existing aches through the combination of movement, discipline, and faith. Walking in natural settings during Shravan added perceived vitality.

Health Risks and Challenges. Fatigue, dehydration, muscle cramps, swollen and bruised feet, and blisters featured prominently in accounts. One narrative recalled an elderly relative returning with heavily swollen feet, requiring community care. Monsoon conditions exacerbated risks, with experts stressing the need for ample hydration and electrolytes to prevent cramping or exhaustion. While volunteer camps provided medical aid and rest, overcrowding and variable preparation sometimes intensified strain. No interviewees reported severe incidents in their groups, but broader reports mention injuries from accidents or extreme exertion, particularly among those attempting faster “Dak Bam” variants.

Thematic analysis revealed a virtuous cycle: physical exertion amplified mental clarity and resilience, while spiritual motivation and communal support sustained physical effort

despite discomfort. Many viewed hardships as purifying penance rather than mere suffering.

5. Discussion

The Kanwar Yatra emerges as a form of holistic therapy, where physical demands deliver exercise-like benefits, spiritual scaffolding prevents burnout, and social bonds provide emotional sustenance—outcomes often absent in secular fitness or wellness programs. Mental health gains, including stress relief and resilience, align with and extend existing research on pilgrimage (Sarkar & Negi, 2024; Koenig, 2012; Pargament, 1997), while neurophysiological insights into chanting and endurance activity offer plausible mechanisms for mood and cognitive improvements. Physical rejuvenation narratives corroborate expert views on muscle benefits, though risks highlight the necessity of preparation and support.

Infrastructure gaps—such as consistent hydration stations and shaded rest areas—amplify vulnerabilities, especially for diverse participant groups. Policy recommendations include integrating public health protocols into religious tourism management, drawing lessons from well-organized events like the Hajj. Culturally, the yatra counters modernity's fragmentation by offering an indigenous pathway to wellness that emphasizes discipline, community, and meaning. It also transmits values of empathy and shared humanity, as seen in community care for returning pilgrims.

Limitations of this secondary- and interview-based approach include the subjective nature of narratives; however, consistency across sources strengthens the findings. Future studies could benefit from mixed-method designs incorporating biomarkers or larger-scale qualitative cohorts, alongside cross-cultural comparisons.

6. Conclusion

The Kanwar Yatra to Baidyanath Dham transcends mere ritual; it constitutes a comprehensive crucible of transformation. By weaving physical endurance with mental discipline and spiritual surrender, it cultivates

resilience, vitality, and communal harmony. Participants return not only purified in faith but often fortified in body and mind—testimony to pilgrimage's enduring relevance as an alternative health paradigm.

As India addresses non-communicable diseases and mental health burdens, indigenous practices like the Kanwar Yatra merit thoughtful integration into holistic wellness strategies. Stakeholders—including religious organizations, health authorities, and tourism bodies—should collaborate to enhance safety and accessibility while preserving the yatra's sacred essence. Future research, building on qualitative narratives and secondary insights, can further illuminate these dynamics. In the footsteps of millions chanting “Bol Bam,” the yatra whispers an ancient truth: the journey itself is the destination, and within its trials lies profound renewal.

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PRESERVATION AND TRANSFORMATION: PERFORMING ARTS TRADITIONS OF NORTH- EAST INDIA

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Abstract

The North-East region of India, comprising eight states, is a repository of vibrant cultural expressions that find their essence in dance, music, and performing arts. These traditions, rooted in rituals and everyday life, have evolved into dynamic forms of artistic expression that continue to thrive in contemporary contexts. **Objectives:** The paper aims to examine the cultural significance of dance, music, and performing arts in North-East India, to explore how these art forms function as living traditions, and to analyze their role in shaping regional identity and heritage preservation. **Research Problems:** Despite their cultural richness, many performing traditions of the region face challenges such as modernization, commercialization, and diminishing interest among younger generations. The paper investigates how these forces impact authenticity and continuity of traditions.

Methodology: The study adopts a qualitative research approach, relying on secondary sources such as ethnographic studies, scholarly articles, and government reports. Comparative analysis across different states is employed to highlight regional variations and common threads.

Key Findings: The research reveals that while globalization and cultural shifts pose challenges, dance, music, and performing traditions of North-East India remain resilient due to their deep ritualistic roots, community participation, and government-supported cultural festivals. These traditions not only preserve indigenous identity but also contribute to India's cultural diplomacy and tourism.

Keywords: North-East India, dance traditions, folk music, performing arts, cultural heritage

1. Introduction

The North-East region of India, comprising Assam, Manipur, Meghalaya, Mizoram, Nagaland, Arunachal Pradesh, Tripura, and Sikkim, represents one of the richest cultural zones of the country. Often referred to as the "land of festivals," this region is distinguished by its mosaic of ethnic groups, languages, and traditions, each sustaining unique forms of artistic expression (Baruah, 2020). Dance, music, and performing arts form the cultural lifeblood of these societies, deeply intertwined with rituals, agricultural practices, and social celebrations. Unlike many parts of India where

classical forms dominate the stage, the North-East is defined by living traditions that continue to evolve organically within communities. The Bihu dance of Assam, the Raas Leela and Sankirtana of Manipur, the Cheraw bamboo dance of Mizoram, and the Naga warrior dances exemplify the diverse yet interconnected performance traditions (Singh, 2018). These art forms are not confined to entertainment; they carry symbolic meanings of fertility, spirituality, and communal solidarity.

At the same time, modernization, urban migration, and the influence of popular culture pose significant challenges to these traditions.

While government-supported festivals such as the Hornbill Festival in Nagaland or the Sangai Festival in Manipur have helped bring visibility to these arts, questions remain about authenticity and preservation in the face of commercialization (Devi, 2021).

This paper seeks to explore the continuity and resilience of North-Eastern performing traditions, focusing on their role as living cultural practices. It analyzes how dance, music, and performance function not merely as aesthetic expressions but as vital carriers of identity, heritage, and cultural diplomacy for India.

2. Dance Traditions of North-East India- Dance in North-East India is not only a form of entertainment but also a cultural archive of myths, values, and lived experiences. It reflects the harmony between humans, nature, and spirituality, making it central to social and religious life. Each state offers unique dance traditions, ranging from classical to folk, ritualistic to festive, and symbolic to theatrical.

2.1 Classical and Semi-Classical Traditions- Among the eight North-Eastern states, Manipur stands out with its classical heritage. Manipuri dance is characterized by fluid movements, delicate hand gestures, and devotional themes. The most renowned form, Raas Leela, enacts the divine love of Radha and Krishna, performed with graceful circular movements and lyrical music (Singh, 2019). Costumes are symbolic—women wear the Potloi (a stiff cylindrical skirt richly decorated with embroidery and mirrors) while men wear white dhoti and turbans, emphasizing purity and devotion.

The Sankirtana tradition—a ritual singing and dancing practice—was recognized by UNESCO in 2013 as part of the Intangible Cultural Heritage of Humanity. This art form combines music, dance, and storytelling, performed mainly in temples to invoke divine blessings (UNESCO, 2013). Another significant tradition is Lai Haraoba, a festival celebrating creation myths of the Meitei people, where dance movements imitate daily activities, natural elements, and cosmic forces.

2.2 Folk and Community Dances

The folk dances of the North-East are communal, vibrant, and deeply connected to agricultural cycles, fertility rituals, and festivals.

- **Bihu (Assam):** Celebrated during the Assamese New Year (Rongali Bihu), this dance expresses youthful energy, fertility, and joy. Dancers wear colorful attire—women in mekhela chador and men in traditional dhoti with gamosa (woven scarf). Instruments like the dhol (drum), pepa (buffalo-horn pipe), and toka (clapper) accompany the lively performance (Goswami, 2020).
- **Cheraw (Mizoram):** Known as the Bamboo Dance, it requires immense precision as dancers step between bamboo poles clapped together in rhythmic patterns. Traditionally performed to honor women during pregnancy or to mark festivals like Chapchar Kut, it highlights communal harmony and cooperation (Lalrinchhani, 2017).
- **Wangala Dance (Meghalaya):** The harvest dance of the Garo people celebrates the Sun God (Saljong). Men play long drums (dama) while women perform rhythmic steps in colorful attire. The dance symbolizes gratitude for agricultural prosperity.
- **Naga Warrior Dances (Nagaland):** Performed during festivals such as the Hornbill Festival, these dances are vigorous and martial, reflecting tribal pride and valor. Costumes include elaborate headgear adorned with feathers, animal horns, and bead jewelry (Ao, 2016).
- **Hojagiri (Tripura):** A unique balancing dance performed by women of the Reang community, involving acrobatic postures on pitchers and balancing earthen lamps. It demonstrates strength, grace, and devotion.

2.3 Costumes and Aesthetics

Costumes play a vital role in enhancing the visual appeal and symbolic meaning of these dances. Bright colors, tribal motifs, and handwoven textiles reflect local craftsmanship. For example: Manipuri dancers' costumes embody sanctity and devotion, with the Potloi designed to resemble a blooming lotus. Bihu costumes symbolize fertility and prosperity with red and white motifs. Naga dances use animal-inspired costumes, symbolizing bravery and ancestral connections. Jewelry, headgear, and body ornaments further reinforce cultural identity and tribal aesthetics.

2.4 Musical Instruments in Dance

Music is inseparable from dance traditions. Indigenous instruments like:

- Pepa (buffalo horn pipe, Assam),
- Dhol and Nagada (drums),
- Log drum (Nagaland),
- Tangmuri (reed instrument, Meghalaya), provide rhythm and energy. The interplay of movement and music reinforces the performative and ritual aspects of these traditions.

2.5 Gender Roles in Dance

Many North-Eastern dances emphasize gender-specific roles:

- In Bihu, young men and women often dance together, with flirtatious gestures symbolizing fertility and courtship.
- In Manipuri Raas Leela, women's roles are central, embodying Radha and the Gopis, while men portray Krishna or perform supporting roles.
- In Cheraw, men handle bamboo poles while women perform the intricate steps.
- In warrior dances, men dominate the stage to showcase valor, while women's performances often symbolize fertility, nurturing, and grace.
- These roles, while traditional, also highlight the complementary contributions of men and women in sustaining cultural continuity.

2.6 Symbolism and Cultural Role

Dances are not isolated performances but carry deep symbolic meaning:

- **Fertility and agriculture:** Bihu and Wangala celebrate cycles of nature and farming.
- **Spiritual devotion:** Manipuri and Lai Haraoba integrate religious narratives and cosmology.
- **Community bonding:** Naga and Mizo dances emphasize cooperation and solidarity.
- **Cultural diplomacy:** Through festivals and tourism, these dances project North-East India's identity on global platforms.

2.7 Contemporary Adaptations and Global Reach

Today, North-Eastern dances are featured in national festivals (Republic Day Parade, India International Dance Festival) and international cultural exchanges. While stage adaptations bring recognition, scholars caution about commodification when sacred rituals are performed purely for tourism (Devi, 2021). Nevertheless, communities continue to maintain authentic forms during local rituals, ensuring a balance between preservation and modernization.

3. Music Traditions of North-East India

Music in North-East India occupies a central role in the region's cultural identity. It functions as a medium of storytelling, ritual worship, social bonding, and artistic expression. Unlike the classical music traditions of northern and southern India, the music of this region is largely oral, community-driven, and intertwined with daily life and festivals. Each state has distinct musical practices shaped by indigenous instruments, folk songs, and ritual chants.

3.1 Folk Music and Oral Traditions

The folk music of the region is deeply connected to agrarian life, love, mythology, and spirituality.

- **Assamese Folk Songs:** Songs like Bihu Geet celebrate spring, fertility, and youthful energy. Other Assamese forms such as Ojapali combine narration, singing, and gestures, often performed in praise of mythological figures (Baruah, 2020).
- **Mizo Folk Songs:** These songs, often sung in groups, are characterized by simplicity of melody and communal participation. They accompany dances like Cheraw and express themes of love, bravery, and harmony.
- **Garo Songs (Meghalaya):** Performed during Wangala festival, these songs honor the Sun God and express gratitude for agricultural prosperity.
- **Naga Tribal Songs:** Known for their polyphonic style, these songs use powerful group harmonies, particularly during festivals and warrior celebrations (Ao, 2016).
- Folk songs are passed down orally, ensuring cultural continuity across generations.

3.2 Religious and Devotional Music

Religious practices in the North-East integrate music as an essential element.

- **Vaishnavite Music in Assam:** Saint Sankardeva introduced Borgeet (devotional songs) and Naam-kirtan in the 15th century, sung in Satras (monastic institutions). These devotional songs remain central to Assamese spiritual life (Sharma, 2019).
- **Manipuri Sankirtana:** Performed in temples and during rituals, Sankirtana combines drumming, cymbals, and choral singing. It was recognized by UNESCO as a Masterpiece of the Oral and Intangible Heritage of Humanity (UNESCO, 2013).
- **Tribal Ritual Chants:** In Arunachal Pradesh and Nagaland, shamans and priests use chants accompanied by instruments to invoke deities, cure ailments, or protect villages.

3.3 Musical Instruments of the Region-The richness of North-Eastern music lies in its

indigenous instruments, many of which are made from bamboo, wood, animal horns, and natural materials:

- **Assam:** Pepa (buffalo horn pipe), Dhol (drum), Gogona (reed instrument).
- **Nagaland:** Log Drum (a giant hollowed-out tree trunk struck during festivals).
- **Meghalaya:** Tangmuri (reed instrument), Ka Bom (drum).
- **Manipur:** Pung (drum used in Sankirtana), Esraj (string instrument).

These instruments not only provide rhythm and melody but also embody the resourcefulness of tribal craftsmanship.

3.4 Social and Cultural Functions of Music

Music serves multiple roles in the region:

- **Storytelling:** Folk ballads narrate legends, historical events, and moral lessons.
- **Festivals:** Music is inseparable from dance traditions such as Bihu, Wangala, and Hornbill celebrations.
- **Identity Formation:** Musical styles distinguish ethnic groups, reinforcing cultural identity.
- **Healing and Rituals:** Certain chants and drum rhythms are believed to possess spiritual powers, ensuring harmony between humans and nature.

3.5 Contemporary Developments

In modern times, North-Eastern music has gained national and international recognition: Fusion bands such as Soulmate (Shillong) and Alobo Naga & The Band (Nagaland) blend rock, blues, and jazz with indigenous rhythms. Classical musicians from the region, like Manipuri Pung players and Assamese Borgeet singers, are featured in cultural festivals across India. Universities and cultural academies are documenting oral traditions, ensuring preservation for future generations. However, commercialization and Western influence also raise concerns about the dilution of traditional purity. Efforts by local artists and cultural institutions continue to strike a balance between preservation and innovation.

4. Performing Arts and Theatre Practices in North-East India

The North-East has a rich legacy of theatre and performing arts, which function as cultural expressions of social values, myths, and community life. Unlike mainstream Indian theatre, these traditions are deeply interwoven with dance, music, rituals, and storytelling, creating a unique performance culture.

4.1 Traditional Theatre Forms

- **Ankia Naat (Assam):** Founded by Sankardeva in the 15th–16th century, this form of religious theatre uses dance, music (Borgeet), and dialogue to depict episodes from the Bhagavata Purana and Ramayana. Performances take place in Namghars and Satras and continue to be practiced as part of Vaishnavite culture (Sharma, 2019).
- **Jatra (Tripura and Assam):** A folk theatre with open-air performances, Jatra includes songs, stylized acting, and improvisation. It often addresses both mythological and contemporary themes.
- **Shumang Leela (Manipur):** A courtyard theatre form performed without elaborate props. Actors—traditionally men—play both male and female roles. Themes range from mythology to social issues, making it a powerful medium of social awareness (Devi, 2018).

4.2 Ritual and Community Theatre

Many tribal groups integrate performance into their rituals:

- **Nagaland:** Festivals like Hornbill include enactments of warrior tales and harvest stories through dance-drama.
- **Meghalaya:** Ritual performances during Wangala (Garo festival)
- **Assamese Modern Theatre:** Jyoti Prasad Agarwala pioneered socially conscious plays, blending Western dramaturgy with Assamese culture.
- **Manipur:** Playwrights like Ratan Thiyam brought Manipuri theatre to international platforms, combining

combine music, chants, and symbolic movements to honor nature.

- **Arunachal Pradesh:** Tribal myths are performed through masked dances and dramatizations, often invoking spirits for protection.

These practices blur the line between religion and performance, making theatre a sacred act as well as entertainment.

4.3 Manipuri Raslila

The Raslila of Manipur, introduced by King Bhagyachandra in the 18th century, is one of the most refined theatre-dance forms of the region. It dramatizes the love of Radha and Krishna through music, stylized dance, and devotional gestures. Costumes—such as the cylindrical skirts of the Gopis—are iconic, symbolizing spiritual beauty. Recognized as a classical tradition, Raslila has contributed to the integration of Manipuri dance into the Sangeet Natak Akademi's eight classical dance forms of India.

4.4 Themes and Characteristics

- **Mythological Narratives:** Stories from epics like the Ramayana, Mahabharata, and Bhagavata Purana dominate traditional theatre.
- **Community-Centric:** Performed in courtyards, open fields, or religious spaces, making them accessible to all.
- **Fusion of Arts:** Theatre here is not separate from dance and music—it exists as a composite art form.
- **Didactic Purpose:** Performances carry moral, religious, and social messages, reinforcing community values.

4.5 Modern Theatre in the North-East

The colonial and post-independence periods gave rise to modern theatre movements:

classical traditions with contemporary themes.

- **Nagaland and Mizoram:** Theatre groups experiment with issues of identity, conflict, and modernity while retaining traditional aesthetics.

- Institutions such as the National School of Drama (NSD) extension centres in the North-East play a significant role in nurturing young theatre practitioners.

4.6 Cultural Significance

Performing arts and theatre in the North-East serve as:

- **Agents of Social Change:** Addressing topics such as gender roles, corruption, and communal harmony.
- **Cultural Preservation Tools:** Retaining oral traditions and mythologies.
- **Tourism Attractions:** Theatre festivals in Assam, Manipur, and Nagaland attract both national and international audiences.

5. Festivals and Cultural

Celebrations of North-East India

Festivals in the North-East are not only celebrations but also living museums of cultural traditions, where dance, music, and performing arts play a central role. Each festival is community-driven, blending spirituality, seasonal cycles, and artistic expression.

5.1 Assam

- **Bihu Festival:** The most prominent festival of Assam, celebrated thrice a year—Rongali Bihu (spring), Kongali Bihu (autumn), and Bhogali Bihu (winter). The Rongali Bihu dance is particularly significant, symbolizing fertility, youth, and the joy of harvest. Music played on the dhol, pepa, and gogona accompanies vibrant group dances (Goswami, 2020).
- **Jonbeel Mela:** A fair where barter system still survives, combining cultural performances with trade, reflecting continuity of indigenous traditions.

5.2 Manipur

- **Lai Haraoba:** A ritualistic festival celebrating the creation myths of the Meitei people. It integrates dance, music, storytelling, and theatre, performed as an offering to local deities.
- **Raas Festival:** Based on Vaishnavite traditions, this festival features Manipuri Raslila, blending classical dance and devotional theatre. Recognized nationally and internationally, it serves as both a cultural performance and a sacred ritual.

5.3 Nagaland

- **Hornbill Festival:** Known as the “Festival of Festivals,” it brings together Naga tribes to showcase warrior dances, folk songs, indigenous sports, and craft traditions. It has become a major tourist attraction and a platform for intercultural dialogue (Ao, 2016).
- **Moatsu Mong:** Celebrated by the Ao tribe after sowing, featuring songs, dances, and ritual feasts to foster social bonding.

5.4 Mizoram

- **Chapchar Kut:** Celebrated after jhum cultivation, this festival showcases the Cheraw (bamboo dance) and other folk dances. Accompanied by rhythmic beats of drums and gongs, it represents agricultural joy and communal unity (Lalrinchhane, 2017).
- **Pawl Kut & Mim Kut:** Seasonal harvest festivals with a mix of songs, dances, and feasting.

5.5 Meghalaya

Wangala Festival: The harvest festival of the Garo tribe dedicated to Sun God Saljong. It combines drumming, chanting, and group dances, reinforcing the connection between nature, agriculture, and spirituality.

Shad Suk Mynsiem: A Khasi thanksgiving festival where men and women perform dances in colorful attire, symbolizing purity, fertility, and gratitude.

5.6 Arunachal Pradesh

- **Losar:** The Tibetan New Year celebrated by Monpa and Sherdukpen tribes. It blends Buddhist rituals, folk music, and masked dances (Cham dances).
- **Solung & Mopin:** Agricultural festivals of Adi and Galo tribes, combining ritual offerings with dance and music to appease deities.

5.7 Tripura & Sikkim-Kharchi Puja (Tripura):

A 7-day festival involving worship of 14 deities, accompanied by folk dances and music.

Pang Lhabso (Sikkim): A unique festival paying homage to Mount Kanchenjunga, combining rituals with martial dances and cultural performances.

5.8 Significance of Festivals

- **Cultural Integration:** Festivals act as platforms where dance, music, theatre, and rituals unite.
- **Social Cohesion:** They strengthen communal ties by encouraging participation across generations.
- **Tourism and Global Reach:** Events like Hornbill Festival and Bihu are now showcased internationally, positioning North-East India as a global cultural hub.
- **Preservation of Identity:** Through festivals, tribal and community groups ensure the transmission of oral traditions, myths, and artistic practices to younger generations.

6. Challenges and Contemporary Issues in Preserving North-Eastern Performing Traditions

While the North-East of India is one of the richest cultural regions in the country, its dance,

music, and performing traditions face multiple challenges in the 21st century. These challenges emerge from modernization, globalization, migration, and socio-political changes that affect cultural practices and their sustainability.

6.1 Cultural Commodification and Loss of Authenticity-Traditional performances such as Cheraw (Mizoram's Bamboo Dance) or Bihu (Assam) are increasingly adapted for stage shows and tourism events.

Although this increases visibility, the spiritual or ritual essence often gets diluted. For example, Bihu, once a ritual dance celebrating fertility and seasonal cycles, is now widely staged in commercial events, losing some of its ritual depth (Goswami, 2020).

Similarly, the Raslila of Manipur, when performed outside its sacred context, sometimes shifts from being devotional theatre to a spectacle for audiences (Singh, 2019).

6.2 Influence of Globalization and Media-Younger generations are increasingly exposed to global pop culture, Bollywood, and Western dance forms. This results in reduced participation in traditional community practices.

While digital platforms help promote North-Eastern arts globally, they also create a tendency to shorten performances or modify them for "viral" content.

6.3 Decline of Oral Traditions-Many tribal performances are transmitted orally, without written records. With migration and urbanization, oral transmission is weakening.

For example, in Nagaland, some warrior dances are performed less frequently due to reduced practice in village communities (Ao, 2016). Loss of indigenous languages further complicates the preservation of songs, chants, and ritual expressions.

6.4 Political and Social Conflicts-The North-East has witnessed ethnic and political conflicts that disrupt cultural festivals and artistic practices.

Festivals requiring large community gatherings are sometimes restricted, affecting continuity of traditional performances.

6.5 Lack of Institutional Support-Compared to classical Indian traditions like Bharatanatyam or Kathak, North-Eastern dance and music receive less formalized training infrastructure. Though organizations like the Sangeet Natak Akademi and Zonal Cultural Centres provide some support, funding, documentation, and training remain insufficient. Many rural artists struggle economically and cannot sustain themselves solely through traditional art.

6.6 Preservation vs. Innovation Debate-A key issue is how to balance authentic preservation with creative innovation. Some scholars argue that traditions should evolve with time, while others warn that too much adaptation may erode the cultural identity. For example, modern theatre directors like Ratan Thiyam integrate global influences into Manipuri theatre, sparking debates over cultural purity vs. innovation.

6.7 Climate and Environmental Challenges

Since many festivals are linked with agriculture and seasonal cycles, climate change and ecological disruption affect these traditions.

Floods, shifting rainfall, and deforestation in Assam and Arunachal Pradesh threaten both the festivals and the livelihoods that sustain cultural practices.

6.8 Key Contemporary Responses-Despite challenges, several initiatives are being undertaken:

- **Documentation Projects:** Universities and cultural organizations are recording dances, songs, and oral histories.
- **Tourism and Cultural Showcases:** Festivals like the Hornbill Festival (Nagaland) and Chapchar Kut (Mizoram) are promoted globally as heritage tourism attractions.
- **Government and NGO Support:** Schemes for tribal artists and

performers are helping in skill development and stage exposure.

- **Youth Revival Movements:** Young artists are increasingly blending tradition with modern forms to keep practices relevant.

7. Conclusion and Key Findings

The cultural fabric of North-East India is a living testimony to the coexistence of ritual, art, and community life. Through its rich and varied traditions of dance, music, and performing arts, the region preserves not only artistic practices but also collective memories, mythologies, and social values. This research highlights how these traditions embody both continuity and change in a dynamic socio-cultural environment.

7.1 Synthesis of Dance Traditions

The dance forms of the region, from the classical Manipuri Raslila to vibrant folk performances like Bihu, Cheraw, and Wangala, demonstrate how movement and rhythm articulate the community's relationship with nature, fertility, and spirituality. Dances are inseparable from their ritual settings and agricultural cycles, symbolizing renewal, celebration, and devotion. Even as these dances enter modern stages and global platforms, they continue to represent identity, resilience, and creativity.

7.2 Significance of Music Traditions

Music in the North-East, whether devotional Borgeet of Assam, the drum-based Wangala rhythms of Meghalaya, or the bamboo and string instruments of tribal groups, reflects the region's sonic diversity. Music functions as a spiritual medium, a narrative tool, and a communal language, accompanying festivals, theatre, and ritual life. These musical expressions bridge the sacred and the social, while also serving as a marker of distinct ethnic and regional identities.

7.3 Performing Arts and Theatre Practices

Theatre traditions like Ankia Naat, Shumang Leela, and Lai Haraoba illustrate how performance operates as both religious expression and social commentary. Unlike

theatre elsewhere in India, North-Eastern forms often merge dance, music, dialogue, and ritual into a composite art. Modern theatre pioneers, such as Ratan Thiyam and Heisnam Kanhailal, have further globalized these traditions by blending indigenous aesthetics with contemporary dramaturgy. This reflects a continuum where heritage adapts without losing its roots.

7.4 Festivals as Cultural Custodians

Festivals like Bihu, Hornbill, Lai Haraoba, Chapchar Kut, and Wangala not only mark seasonal and agricultural cycles but also act as repositories of intangible heritage. They are spaces where dance, music, theatre, and ritual come together in communal celebration. These festivals strengthen social cohesion, affirm cultural identities, and increasingly serve as tourism showcases, making North-East India a cultural destination of global interest.

7.5 Contemporary Challenges

Despite their vitality, these traditions face pressing challenges. Cultural commodification, the impact of globalization, weakening of oral traditions, and political instability threaten continuity. Additionally, economic limitations and lack of institutional support hinder artists from sustaining themselves solely through traditional practices. Environmental issues such as climate change also disrupt festivals tied to agricultural cycles. Yet, these challenges are countered by conscious efforts in documentation, government and NGO initiatives, youth involvement, and global recognition through cultural festivals.

7.6 Key Findings

1. **Cultural Integration:** Dance, music, and theatre in North-East India cannot be studied in isolation; they function as interconnected cultural systems.
2. **Community-Centric Art:** These traditions emphasize collective participation, reinforcing social bonds and shared values.
3. **Balance of Continuity and Change:** While modernization and tourism reshape performances, communities continue to maintain authenticity in ritual contexts.
4. **Agents of Identity and Dialogue:** Performing traditions serve as platforms for both cultural preservation and intercultural exchange, helping North-East India assert its unique place in India and the world.
5. **Need for Preservation Efforts:** To safeguard these traditions, sustained policy support, education, documentation, and community engagement are crucial.

Final Thought

The performing traditions of North-East India reveal how art is inseparable from life itself. They show that dance, music, and theatre are not merely aesthetic practices but vital channels of cultural memory, resilience, and transformation. In a globalized era where cultural homogenization is a growing threat, the North-East stands out as a beacon of diversity, continuity, and creativity. Ensuring the preservation and promotion of these traditions is not only essential for the region but also for India's broader cultural identity and the global recognition of intangible heritage.

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BRIDGING THE SKILL DIVIDE: A TALE OF TWO STATES – KERALA’S PROMISE AND JHARKHAND’S POTENTIAL

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ABSTRACT

Higher education across the world is changing rapidly due to globalization, technology, and new government policies. However, these changes do not look the same everywhere. This article compares how higher education is evolving in two very different states of India: Kerala and Jharkhand. While Kerala is known for its high literacy rate and strong social development, Jharkhand has a unique tribal culture and is working to overcome economic and geographical challenges.

This study looks at key trends such as the growth of private colleges, the use of digital learning, the courses students choose, and the hurdles students face in completing their degrees. By comparing these two states, the research aims to understand how local culture, history, and economy shape the path of higher education. The findings highlight the different struggles and successes in each state, offering valuable insights for policymakers and educators who want to create a more balanced and fair education system across India.

Keywords: Higher Education, Globalization, Technology, Government Policies, Literacy Rate, Digital Learning, Policymakers

INTRODUCTION

A college degree is often seen as a golden ticket—a promise of a better job and a brighter future. But the path to that degree, and the challenges faced along the way, can look very different depending on where you are in India. In a country as diverse as ours, higher education is not a single, uniform story. It is a collection of many different stories, shaped by local history, culture, and economy. This article explores two of those stories by looking at the changing face of higher education in two Indian states that sit on opposite ends of the development spectrum: Kerala and Jharkhand.

Kerala, in the south, is a state that has achieved what the rest of the country aspires to. With its

near-universal literacy and strong focus on social welfare, it has long been a model for human development. Its universities and colleges are well-established, and education is a deep part of its culture.

RESEARCH METHODOLOGY

This study follows an exploratory and comparative approach to analyze skill development and education systems in Kerala and Jharkhand. It focuses on identifying key differences, challenges, and opportunities in bridging the skill divide.

The research is based on secondary data, including government reports, policy documents, academic journals, and credible

online sources. A comparative analysis is used to examine aspects such as access, quality of education, vocational training, and employment linkages.

The study aims to understand how each state supports the transition from education to employment and to derive insights for a more inclusive and effective skill-development framework.

Table 1: Comparative Table of Higher Education in Kerala vs. Jharkhand

Feature	Kerala	Jharkhand
Historical & Social Background	Long history of social reform and missionary influence, leading to a strong culture of valuing education. Known as the "Kerala Model" of development focused on social equity.	A state with a rich tribal heritage, formed in 2000. Faces the challenge of building a modern education system while integrating diverse, often marginalised, communities.
Literacy Rate	Kerala has a very high literacy rate and strong awareness about education.	Jharkhand has a lower literacy rate compared to Kerala, and educational awareness is still developing in many areas.
Development of Higher Education	Higher Education is well developed with many colleges and universities.	Higher Education is growing but still developing in many regions.
Number of Institutions	Kerala has a large number of higher education institutions including universities, colleges and professional institutes.	Jharkhand has fewer institutions though new colleges and universities are being established gradually.
Access & Enrollment	High Access: Near-universal literacy and a Gross Enrolment Ratio (GER) that is one of the highest in the country, especially for girl students.	Improving Access: Government has established central universities and is working to increase access, but significant gaps remain.
Key Student Demographics	High enrollment across all social groups, with women leading in higher education participation.	A large tribal student population that faces significant barriers to access and success in higher education.
Major Infrastructure & Tech	Highly advanced: The KITE program is a world-class initiative for digital learning in schools, and this tech-focus extends to higher education with projects like K-REAP for digital administration.	Developing. While cities have colleges, infrastructure in rural and remote areas is often lacking. Students face challenges with basic needs like transportation.
Major Challenges	Quality vs. Quantity: Despite high enrollment, there are concerns about declining academic standards and the employability of graduates. Many talented students leave the state for education or jobs (brain drain).	Equity and Access: The biggest challenge is ensuring tribal and other marginalised communities can access and afford higher education. This is made worse by delays in scholarship funds.
Current Initiatives & Focus	Focus on Excellence: Introducing four-year degree programmes, setting up research parks, and strengthening industry-academia links to make students "industry-ready". Also focusing on making Kerala a "complete graduate state" through inclusive programs.	Focus on Inclusion: Fast-tracking tribal welfare schemes, including scholarships for studying abroad and quality coaching for competitive exams. Addressing basic needs like bicycle distribution to help students reach schools.
Student Participation	A large number of students participate in higher education and professional courses.	Student participation is increasing but still lower compared to Kerala.
Government Support	The government gives strong support to improve quality and access to higher education.	The government is making efforts to expand educational opportunities and improve institutions.

Comparative Analysis: Understanding the Contrasts

A Tale of Two Journeys

Kerala's education system began early, driven by reformers and a strong culture of learning, leading to near-universal literacy and widespread college access, especially for women. Jharkhand, formed in 2000, is still building its system from the ground up, focusing on reaching its diverse and largely tribal population. While Kerala works on improving an established system, Jharkhand continues developing basic access and inclusion.

Different Problems, Different Solutions

Kerala and Jharkhand face contrasting challenges. Kerala's issue is quality and relevance, ensuring students gain the right skills and reducing "brain drain" by aligning education with job market needs through research and industry links. Jharkhand, however, struggles with basic access and equity, where many students still face barriers like distance, costs, and lack of support. Its focus remains on transportation, scholarships, and making higher education accessible to all.

The Role of Technology

Aspect	Kerala	Jharkhand
Opportunities	• Strong Foundation: Near-universal literacy and a culture that deeply values education provide a ready pool of motivated students. • Innovation Focus: Government push for India's first digital university, four-year degrees, and research centres shows a clear vision to match global standards. • Knowledge Economy: The state's fragile ecology makes it unsuitable for heavy industry but perfect for a service-based, technology-focused economy. • International Hub: High safety standards, strong social indicators, and pleasant climate make Kerala attractive for students from across the world. • Smart Privatisation: Allowing private universities alongside public ones could attract investment, create healthy competition, and force innovation.	• Clean Slate Advantage: Unlike established systems, Jharkhand can build its education infrastructure right from the start, learning from others' mistakes. • Tribal Heritage: Rich cultural traditions offer a unique foundation for education rooted in local identity while reaching for modern skills. • Political Will: Schemes like free coaching and financial support for 35,000 students show government intent to address educational disparities. • Technology Leapfrog: Mobile and satellite platforms can connect remote tribal learners directly, skipping traditional infrastructure hurdles. • Targeted Support: Opportunity to design programmes specifically for marginalised communities who have been left out for generations.
Threats	• Administrative Paralysis: 13 out of 14 state universities function without full-time Vice Chancellors. At Kerala University, a leadership standoff has left 1,500 student certificates undelivered. • Quality Crisis: Despite high enrollment, education quality has fallen to unacceptable levels, with widespread concerns about graduate employability. • Brain Drain: Nearly 2.5 lakh students have left the state for studies elsewhere, taking future innovation and tax revenue with them. • Political Deadlock: Ongoing conflict between government	• Physical Access: In places like Dandai block in Garhwa district, there is not a single degree college. Students travel 25–30 kilometres daily—or simply drop out. • Abysmal Quality: The Governor himself admitted higher education in Jharkhand is "at its nadir." Students leave in large numbers, but almost none come in. • Administrative Failure: At 16-year-old Nilamber Pitamber University, only three convocations have been held—meaning thousands waited years just to receive their degrees. • Equity Crisis: Tribal students, Muslims, and

	and Governor delays key bills and creates uncertainty across the system. • Empty Seats: Nearly 42% of seats in prominent universities lie vacant, signalling growing disillusionment among students.	Scheduled Castes are the worst-performing groups. Systemic exclusion compounds their disadvantages. • Broken Promises: Schemes like free coaching remain unimplemented even after budgets of ₹350 crore were approved, turning hope into disillusionment.
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Technology highlights the contrast between Kerala and Jharkhand. Kerala uses strong infrastructure to enhance digital education, while Jharkhand still struggles with basic needs like electricity and internet access. This shows that a single national policy cannot fit all regions. Kerala focuses on innovation and staying globally competitive, whereas Jharkhand prioritizes building access and

inclusion so all students can enter higher education.

Jharkhand, despite its rich resources and tribal heritage, faces challenges like developing its education system from scratch and reaching remote areas. Comparing both states reveals that education reforms must be flexible, as each state has unique needs. Overall, the lesson is that India needs diverse, inclusive strategies to build an effective higher education system.

OPPORTUNITIES AND THREATS IN HIGHER EDUCATION: KERALA VS JHARKHAND

**Table 2: A Comparative Perspective of Kerala and Jharkhand
(Recommendations For Strengthening Higher Education)**

Area	Recommendations
Fix Administrative Bottlenecks	• Fill all vacant Vice Chancellor positions immediately to end leadership crises and restore stability. • Streamline decision-making processes so that student certificates, admissions, and examinations are not held hostage to political disputes. • Implement the unified academic calendar fully across all universities to ensure timely results.
Balance Public and Private Growth	• Implement the new Private Universities Act thoughtfully, ensuring 40% seats reserved for Kerala students protects local access while attracting investment. • Use private entry as a catalyst for public universities to innovate, not as an excuse to neglect them. • Learn from neighbouring Karnataka's success while ensuring Kerala's unique social character is preserved.
Turn Research into Reality	• Implement the Kerala Research & Development Vision 2031 with urgency—establish KISTI, KIAS, and CIPE as world-class centres. • Move beyond publishing papers to "impact-oriented translation"—research that solves real problems in agriculture, health, and environment. • Use the Kerala Network for Research Support (KNRSHE) to provide shared facilities and patent help to all researchers, not just those in top institutions.
Stop Brain Drain	• Make "Study in Kerala" a serious international programme—attract students from abroad while creating world-class facilities that convince local students to stay. • Strengthen industry-academia linkages so graduates don't need to leave for jobs. • Promote the four-year undergraduate programmes (FYUGP) as flexible, multidisciplinary pathways that match global standards.
Deepen Inclusivity	• Use the new Centre for Indigenous Peoples' Education (CIPE) to ensure tribal communities benefit from Kerala's educational advances. • Expand scholarship support through schemes like the Higher Education Scholarship and ensure timely disbursement. • Build on Kerala's strong gender parity by addressing emerging challenges in transgender inclusion and disability support.

Recommendations for Jharkhand

Area	Recommendations
Expand Access Urgently	• Establish degree colleges in every block—especially in places like Dandai, Garhwa, where students travel 25–30 kilometres daily. • Fast-track the bicycle distribution scheme so distance becomes surmountable, not a barrier to education. • Set a clear timeline to raise Gross Enrolment Ratio from 17% to the national average and beyond, as NEP 2020 envisions.
Make Quality a Reality	• Address the faculty shortage immediately—recruit qualified teachers and reduce the burden on existing staff so they can focus on research. • Equip laboratories with basic facilities; without them, even the best students cannot learn or innovate. • Ensure convocations happen regularly—students should not wait years for their degrees.
Keep Promises to Tribal Students	• Implement the Marang Gomke scholarship for abroad study without delay. • Ensure coaching schemes reach the intended beneficiaries. • Expand tribal hostels with proper facilities across districts.
Build Systems That Work	• Establish Ambedkar libraries in every district as functional knowledge centres. • Implement e-governance from admission to examinations. • Ensure schemes like Guruji Credit Card Yojana reach eligible students.
Focus on Employability	• Integrate skill development into education from Plus 2 level onwards. • Build strong industry linkages for employment. • Use digital platforms to reach remote learners.

CONCLUSION: TWO STATES ONE GOAL

Kerala: The Challenge of Complacency

Kerala's journey in higher education is remarkable. The state has achieved what others still dream of—near-universal literacy, strong participation of women, and a society that places immense value on learning. But this very success has created a new set of challenges.

The state stands at a crossroads. On one side lies complacency; on the other lies reinvention. Kerala has the foundations—what it needs now is governance reform, innovation, and global competitiveness.

The lesson from Kerala is this: success is not permanent. It must be renewed continuously.

Jharkhand: The Challenge of Building from Scratch

Jharkhand's story is about building systems while ensuring inclusion. Despite promises and policies, gaps in implementation persist. Yet, Jharkhand has the advantage of designing a modern, inclusive education system from the ground up. What it needs is execution,

accountability, and integrity. The lesson from Jharkhand is this: a promise made is a debt unpaid.

The Bigger Picture

Both states are addressing the same core question: how to prepare youth for a rapidly changing future. Kerala focuses on quality and competitiveness, while Jharkhand focuses on access and equity. A uniform national policy cannot address such diversity. Flexible, state-specific strategies are essential.

Final Reflection

Higher education in India is not a monolith—it is a mosaic of diverse realities. Kerala and Jharkhand represent two ends of this spectrum, yet both share the same goal: empowering youth through education.

The ultimate truth remains: education is not just about systems or policies—it is about people and hope. And rebuilding hope, once lost, is the greatest challenge of all.

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ROADMAP TO 2047: TRANSFORMING INDIA'S EDUCATION SYSTEM UNDER THE NATIONAL EDUCATION POLICY 2020

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Abstract

The National Education Policy (NEP) 2020 represents a comprehensive and transformative framework aimed at restructuring India's education system to meet the demands of the twenty-first century. Anchored in the vision of making India a developed nation by 2047, the policy emphasizes flexibility, inclusivity, multidisciplinary learning, skill development, and technological integration. This paper critically examines the roadmap proposed under NEP 2020, focusing on structural reforms in school education, transformation of higher education, promotion of research and innovation, integration of digital technologies, and vocationalization of education. Adopting a qualitative and analytical approach, the study synthesizes policy documents and existing literature to evaluate the potential impact of NEP 2020 on India's knowledge economy. The findings suggest that while the policy holds significant promise for enhancing educational quality and global competitiveness, its success depends largely on effective implementation, institutional capacity, and sustained public investment.

Keywords: NEP 2020, education reform, multidisciplinary learning, digital education, skill development, India 2047

1. Introduction

Education is widely acknowledged as a critical driver of national development, fostering human capital formation, social mobility, and economic growth. In India, persistent challenges such as unequal access, declining learning outcomes, outdated curricula, and weak research ecosystems have long hindered the effectiveness of the education system (Tilak, 2021). These structural issues necessitated a comprehensive reform framework.

The National Education Policy (NEP) 2020 represents a paradigm shift in India's educational landscape. It envisions a learner-centric, inclusive, and multidisciplinary education system aligned with global standards and national aspirations (Ministry of Education, 2020). Importantly, the policy is closely linked to India's long-term developmental goal of becoming a developed nation by 2047.

2. Literature Review

The discourse on educational reform in India has evolved significantly over the past few decades, with scholars emphasizing the need for systemic transformation to address structural inefficiencies and emerging global challenges.

Tilak (2021) argues that India's higher education system has historically suffered from issues of access, equity, and quality, particularly due to inadequate public investment and policy fragmentation. He emphasizes that reforms must focus not only on expansion but also on improving institutional quality and research output.

Similarly, Kumar (2020) highlights that policy-driven reforms are essential for modernizing India's education system. His analysis underscores the importance of aligning education with economic needs, particularly

through skill development and innovation-driven learning. Kumar contends that without integrating employability-oriented curricula, educational reforms may fail to achieve their intended outcomes.

The OECD (2021), in its Education Policy Outlook for India, identifies key areas requiring reform, including teacher training, digital infrastructure, and governance mechanisms. The report acknowledges NEP 2020 as a forward-looking policy but cautions that implementation challenges, especially in rural and underdeveloped regions, may limit its impact.

International scholarship also supports the shift toward multidisciplinary education. Studies indicate that interdisciplinary learning enhances critical thinking, creativity, and problem-solving abilities, which are essential in a knowledge-based economy. This perspective aligns closely with NEP 2020's emphasis on holistic education.

Research on digital learning has further gained prominence, particularly in the post-pandemic context. Scholars argue that technology-enabled education can significantly improve access and quality, provided that issues related to digital divide and infrastructure are addressed. The integration of platforms such as SWAYAM is often cited as a positive step toward democratizing education. In addition, literature on vocational education and skill development highlights the need for stronger industry-academia linkages. According to various studies, the lack of practical skills among graduates remains a major barrier to employment in India. NEP 2020's focus on vocational training and internships is therefore seen as a critical intervention.

Overall, the existing literature supports the core principles of NEP 2020 but consistently emphasizes the importance of effective implementation, adequate funding, and institutional capacity. This paper builds on these insights to analyze the policy's roadmap toward 2047.

3. Methodology

This study adopts a qualitative and descriptive research design based on secondary data. Policy documents, government reports, and scholarly articles are analyzed using a thematic approach. Key themes include structural reforms, multidisciplinary education, digital transformation, and skill development.

4. Structural Reforms in School Education

NEP 2020 introduces the 5+3+3+4 structure, replacing the traditional 10+2 system. This model aligns education with developmental stages and emphasizes early childhood learning (Ministry of Education, 2020).

The NIPUN Bharat Mission aims to achieve universal foundational literacy and numeracy by Grade 3 (Government of India, 2021). Pedagogical reforms focus on experiential learning, critical thinking, and competency-based education. Teacher education is strengthened through a four-year integrated B.Ed. program.

5. Multidisciplinary and Holistic Education

The policy promotes a shift from rigid disciplinary boundaries to a multidisciplinary approach. This enables students to explore diverse subjects and develop a broader intellectual perspective. Such an approach enhances creativity, innovation, and problem-solving skills, which are essential in addressing complex global challenges. The inclusion of arts, sports, and vocational subjects contributes to holistic development.

6. Reforming Higher Education

NEP 2020 aims to increase the Gross Enrollment Ratio to 50% by 2035. Flexible degree structures with multiple entry and exit points provide greater accessibility.

The Academic Bank of Credits facilitates credit transfer, while institutional restructuring improves efficiency and quality. The proposed Higher Education Commission of India ensures regulatory coherence (UGC, 2021).

7. Promotion of Research and Innovation

The establishment of the National Research Foundation is a major step toward strengthening India's research ecosystem. It aims to fund interdisciplinary research and foster collaboration among stakeholders. Enhanced research capacity will contribute to technological advancement and global competitiveness (Kumar, 2020).

8. Integration of Technology in Education

Digital platforms such as SWAYAM expand access to quality education. The National Educational Technology Forum supports the adoption of innovative teaching tools. Technologies like artificial intelligence and virtual labs enable personalized learning and improve educational outcomes (OECD, 2021).

9. Skill Development and Vocational Education

NEP 2020 integrates vocational education into mainstream curricula. Students gain exposure to practical skills and industry experience through internships and training programs. This approach bridges the gap between education and employment, enhancing workforce readiness.

10. Inclusive and Equitable Education

The policy emphasizes inclusivity through targeted interventions for disadvantaged groups. Financial support, digital access, and regional language instruction improve accessibility. Gender equality and social justice are central to the policy's vision.

11. Vision for 2047: Towards a Knowledge Economy

By 2047, India aims to achieve universal education, strong research capabilities, and a

highly skilled workforce. NEP 2020 provides a strategic roadmap for achieving these goals.

12. Discussion

Despite its comprehensive framework, NEP 2020 faces challenges related to implementation, funding, and infrastructure. Addressing these issues requires coordinated efforts and continuous monitoring.

13. Conclusion

NEP 2020 represents a transformative vision for India's education system. Its success will depend on effective implementation and stakeholder collaboration. If executed properly, the policy can play a crucial role in shaping a knowledge-driven India by 2047.

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ADMINISTRATIVE COMPLEXITIES AND SOCIO-ECONOMIC FRICTION OF LAND REFORMS IN WEST BENGAL—A CASE STUDY OF TEA ESTATE RECLAMATION IN ALIPURDUAR DISTRICT.

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Abstract

Land reforms and protection of tea garden worker's rights have long been a complex and contentious issue in the northern region of West Bengal. In the case of Alipurduar district administrative weakness, legal complications, political interference, and lack of coordination among various departments have created major obstacles in the restoration process of the closed tea estates. As a result, indigenous peoples and women workers, in particular, are being deprived of their rights to land and livelihood and are facing deep discontent and a humanitarian crisis. Even though workers continue to protest and agitate against unpaid wages, land rights, and displacement, they are having less success due to administrative and policy deficiencies. This study analyses the causes and effects of administrative failure and social conflicts and emphasises the need to formulate effective policies to protect the long-term rights of workers.

Key Word: complex, coordination, discontent, deficiencies, effective, agitate.

1. Introduction:

Land reforms and land rights of tea garden workers are a complex and sensitive issue in the tea garden of Dooars region of northern part of West Bengal. Historically, the land of these tea estates was leased to big companies, and the workers have been working there for generations but have been deprived of the ownership of the land (Deb, 2023). Many tea gardens in the Alipurduar district of West Bengal have remained closed for years, leaving working families in dire poverty, migration, and malnutrition¹ (Mitra, 2024). In this paper, we will examine in detail the historical and legal context of tea garden land reforms in West Bengal, administrative complexities and delays, political interference, and the role of Adivasis and women workers. In particular, case studies of some of the notable closed tea

estates (such as Kalchini, Raimatang, Turturi, Dalmor, Lankapara, and Dheklapara) in the Kalchini, Kumargram and Madarihat-Birpara blocks of Alipurduar district will be presented. Relevant statistics, charts, and tables have been analyzed in different parts of the article, and lastly, policy-level recommendations have been provided to pave the way for ensuring land rights and rehabilitation of tea workers.

7. Historical and Legal Context in Tea Garden Workers:

During the colonial period, the British tea companies occupied vast tracts of land in the Dooars and the hilly regions and started cultivating tea. In the Wasteland Rules of 1838 and the reforms of 1854, tea plantation land was leased to European entrepreneurs from 100 acres to 500 acres, and the lease period was

increased from 45 years to 99 years (Deb, 2023). The British brought indigenous and working-class people from other states to these remote plantations and employed them in hard labour (Ghosh, 2022). Although the garden authorities were supposed to provide quarters for the workers to live in, in reality many workers-built huts themselves, and after independence the state government leased the land of those colonies to companies for a small rent (Deb, 2023). That is, the tea worker's homelands are also not their own, and the tea garden workers were neglected in the past programs of land reform².

After independence, with the passing of the Estate Acquisition Act, 1953, and the Land Reforms Act, 1955, in West Bengal, most of the zamindaris were acquired, and the land of the tea estates was also taken over by the government. But the land was again handed over to private tea companies on a 30-year lease instead of giving it to the workers. As a result, although the government owns the land of the tea gardens, in reality the companies retain control, and the workers do not have legal land rights. The Plantation Labour Act of 1951 (Tea Garden Workers Act) was for the work environment and facilities of the workers, in which the owner was forced to provide accommodation, health, drinking water, etc. But in many cases, the owners did not obey this law, and the government did not strictly enforce it. For example, most of the tea garden worker's housing has been in a dilapidated condition for years, and the government has to implement welfare schemes on the leased land of the tea gardens in the absence of work. As a result, instead of collecting revenue from the government's land, the government itself is spending crores of rupees in the leased areas of the tea company to provide accommodation and facilities to the workers, which experts have termed as "state-sponsored corporate loot." (Deb, 2023)

The West Bengal government was initially reluctant to give land rights to the workers on the tea garden land, as there was a perception that it would destroy the continuity of the industry. However, some steps have been taken. By 2011, the state government had given Pattas of nominal land to 12,000 families of former tea

workers who were living unauthorizedly on tea garden land. This initiative was implemented with the help of the global land rights organization Landesa and legalized some informal colonies. But most of the existing workers still did not get any land rights. In 2021, the young generation of workers launched a massive campaign to demand land ownership for parents, which observers believe was an organized land-rights movement for the first time in history. The young workers of North Bengal formed the North Bengal Tea Worker's Association and started holding marches and meetings and submitting petitions to the administration, which was supported by labour rights organizations like 'Paschim Banga Khet Majur Samity'³. Their question was, "Why can't the people who built these gardens for two hundred years get the right to this land? - This is how a young activist from Alipurduar spoke about the rights of his father (Srivastava, 2021).

Finally, in 2023, the government of West Bengal took an important step to give the land of the tea garden workers as private Patta. The Chief Minister announced that land Pattas would be given to tea workers soon. On 17.02.2023, the State Government acquired a total of 584.193 acres of land of some closed tea gardens under Section 6 (3) of the State Estate Acquisition Act. In addition, under Section 49 of Chapter VI of the Land Reforms Act, 1955, plots of land ranging from 5 to 8 decimals (1 decimal $\approx$ 435 square feet) were started to be given to selected labor families (Deb, 2023). For example, in February 2023, 1,399 workers of the Lankapara and Dheklapara tea gardens in the Madarihat block of Alipurduar (983 in Lankapara and 416 in Dheklapara) were given land title deeds at a rate of 5 decimal per family. The land pattas were also handed over in the names of many women, such as Malati Pakrin, a middle-aged woman from Lankapara tea estate, who said, I have got the land deed in my own name so far; now I can call it my home. He also mentioned that till now they were deprived of various government facilities due to lack of land, but now they can also apply for benefits like Pradhan Mantri Awas Yojana as they have land. As many as 4,000 land pattas were distributed in different districts, of which 1,246 were for tea workers (First land title deeds

given to tea garden workers in West Bengal, 2023).

However, this move was not entirely successful. The government was giving only 5 decimals of homestead land, which seemed inadequate to many of the workers. Many workers and labour organizations claim that they are entitled to full ownership of the land they have lived on and cultivated for generations, not just the land beneath their homes (First land title deeds given to tea garden workers in West Bengal, 2023). The government initially started surveying the land to identify only the inhabited land separated from other parts of the plantations, but in September 2023, workers in many plantations in North Bengal began protesting against the acceptance of the 5 decimal limit (Chhetri, 2023). It is alleged that the government is planning to give the rest of the vast plantation land to tourism or other projects by giving the ownership of only a small piece of land, which the workers are not willing to accept (Srivastava, 2021). In view of this, the state government suspended the survey and grant of title deeds to the tea garden land in September 2023 (First land title deeds given to tea garden workers in West Bengal, 2023). It shows that the decision-making on the question of land reform is in conflict with the expectations and demands of the workers on the one hand and with the accounting of industry and administration on the other⁴.

Administrative complexities, Delay and Political Interference under Tea Garden Land in Alipurduar District:

There have been repeated administrative lapses and delays in the process of restoration of tea gardens and rehabilitation of workers. Although the state government legally owns the land of the gardens, due to lack of necessary monitoring and intervention, many owners have been occupying the land without renewing the lease for years and the government has accepted the revenue (Deb, 2023). For example,

according to a 2018 Right to Information (RTI), the famous tea company Goodricke has not renewed the lease of several of its gardens even after the expiry of the lease period and has outstanding salami and rent worth crores of rupees. The leases of Kumargram and Sankosh tea gardens in Alipurduar have not been renewed since 2000 and 2006 respectively. McLeod Russel Company has sold the Bhatpara tea garden and left the garden with Rs 55 lakh. If such big companies evade rent and rent, then the condition of the weak gardens can be easily guessed (Deb, 2023). Experts say the first signal that a garden is becoming a sick industry is the owner's decision to stop renting the land - something the government should have known and acted on immediately. But in reality, the administration did not exert effective pressure on the owners; rather, after the gardens were completely abandoned and the workers were in distress, it went on a policy of go slow for a long time. Social activist Anuradha Talwar commented: Many of the gardens that are now trying to reopen do not have lease deeds. If the government had taken steps in the beginning, so many gardens would not have been in this condition today⁵ (Deb, 2023).

Leaving the closed tea gardens for a long time created an extreme humanitarian crisis among the worker families. Between 2002-07, 17 tea gardens in North Bengal were closed down and hundreds of workers died of malnutrition-related diseases after seven of the Duncan's Group's gardens were abandoned in 2015. Studies have shown that long periods of wage and ration cuts in closed plantations have reduced the daily caloric intake of workers alarmingly, and the situation was even worse for women. The chart below shows the official figures of starvation deaths in five closed tea gardens of North Bengal in 2015 (Ghosh, 2022). It found that 65 workers had died in a few months at these plantations alone, with human rights groups saying the actual number could be much higher⁶.

Table No-01: Number of deaths tea Garden Workers in North Bengal

Tea Gardens	Number of Deaths	Percentage (%)
Birpara Tea Estate	21	32.30
Hantapara Tea Estate	16	24.61
Dhumchipara Tea Estate	15	23.09
Gargandya Tea Estate	07	10.76
Nageswari Tea Estate	06	9.24
Total	65	100%

Source: www.dnaindia by Amrita Madhukalya on 7th December 2015.

But the then government (then Left government and later the 2011-15 Trinamool government) never wanted to accept “death by starvation.” They argue that “malnutrition, not actual starvation, may have caused the deaths, which in effect amounts to mudslinging.” Even the judiciary was forced to intervene and provide relief, later the death rate decreased a bit due to the introduction of the ration system (Ghosh, 2022). But the central and state governments are trying to do away with it. This is a major failure of administrative accountability⁷.

Administrative failure is also evident in the implementation of minimum wages in the tea industry. The daily wage of tea workers in other tea producing states of the country (such as Kerala, Tamil Nadu) is close to ₹450, whereas in West Bengal and Assam the wage was still as low as ₹250, which is clearly a violation of the Minimum Wages Act. Trade union leaders have alleged that the West Bengal government has not enforced the minimum wage law vigorously to keep the owners happy for political gains (Mitra, 2024). Conflicts over low wages and bonus payments occur every year; sometimes the workers protest and the owners lock up or flee the factory. For example, just before Durga Puja in October 2023, workers at the Muznai tea estate in Alipurduar, demanding a 20% festival bonus, suddenly shut down the plantation and fled, leaving 1,000 workers jobless (WB: Workers' Wages Due, 5 Tea Estates in Alipurduar ‘Abruptly Shuttered’ Before Diwali, 2023).

Political interference and influence have compounded the crisis. Darjeeling, Alipurduar and Jalpaiguri are all tea garden seats. Be it the ruling Trinamool Congress in the state or the BJP at the Centre, both make various promises to the tea workers, blame each other, but in many cases fail to take concrete steps to solve

the problem (Mitra, 2024). In 2014, The Honourable Prime Minister Narendra Modi had promised that the central government would acquire the closed tea gardens and give a special package of Rs 500 crore, which has not been implemented even today (Mitra, 2024). On the other hand, despite various announcements from the state government to revive the tea gardens, no long-term solution has come in reality - rather, some urgency is seen before the elections. For instance, just a day before Chief Minister Mamata Banerjee's visit to Alipurduar in January 2025, three closed tea gardens were reopened at once, which Trinamool leaders promoted as a success of the government. The three gardens (Kalchini, Raimatang and Torsha) had been closed since 2023 and were at least temporarily opened by leasing them to a new company. Just as the government had the will to resume in such a short time, the opposition referred to it as a pre-election political ploy and said that time would tell whether such a resumption would be sustainable⁸ (Correspondent, Three tea gardens closed since 2023 with around 3,800 workers reopen in Alipurduar, 2025).

The lack of administrative coordination is evident. The issues related to tea gardens fall under the purview of multiple agencies, like the State Labour Department, the Land and Land Revenue Department, the Tea Board, the District Administration, and the Plantation/Taxation Department. But many important steps have been delayed due to lack of coordinated planning and monitoring. For example, despite all the information that wages have been left for a long time in a garden, legal rights have been violated, and the Labor Department has not been strict at the time needed (Correspondent, Tea estate shuts over cash and pest peeves, 501 workers jobless in Alipurduar, 2025). Again, the land department

has shown a long delay in cancelling the lease, and in many cases the decision has been delayed on the pretext of legal complications (BISTA, 2022). Although the state government took steps to cancel the lease of some gardens (such as the lease of Dimdima, Tulsipara, and Lankapara gardens in Madarihat block, which was cancelled in 2017) by filing a case in the Calcutta High Court in 2016 after the Duncans company abruptly closed down 13 gardens, it has been several years since the next investors were found and the gardens were started (Prasad & Ponnusamy, 2016). The workers have been given financial assistance under the “Financial Assistance for Workers of Locked-out Industries” (FAWLI) scheme. The FAWLI scheme, started during the Left Front regime, provides a monthly allowance of ₹1,500 to each permanent worker of a closed plantation, which is also being implemented by the Trinamool government (Mitra, 2024). In early 2023, the government announced that closed gardens such as Dalsingpara, Dalmore, Kalchini, Raimatang, Dheklapara, and Ramjhora in Alipurduar would also be covered under FAWLI. But in reality, many workers have not even received this allowance or have been accused of irregularity. For example, Dheklapara tea garden worker Shyamali Tanti reported in 2023 that she had received FAWLI money despite receiving rations from other projects such as Lakshmi's Bhandar (Mitra, 2024). Such lapses have made the workers even more miserable. Apart from the central government's 5 kg ration (Antyodaya Yojana) and the state's 35 kg ration system, many small and closed garden workers are deprived of this food assistance due to non-listing of BPL or lack of identity cards (Pramanik, 2023).

After all, due to administrative failure and political non-cooperation, the process of tea garden land reform has turned into a protracted conflict. Sometimes the government side takes some steps by being sensitive to the demands of the workers; sometimes it remains silent to protect the interests of the employer side. As a result, the confidence of the workers was repeatedly broken, and they were forced to resort to alternative ways of movement⁹.

9. Socio-economic Friction of Land Reforms initiative among the tea garden workers in Alipurduar District:

A complex socio-economic conflict over tea plantations has been going on for decades. It is a profitable industry or wealth for the owners and the ruling class, and on the other hand, it is the only means of livelihood for the workers, but they do not get any authority over that wealth. In the absence of land rights, workers are also deprived of alternative livelihood opportunities. For example, a tea worker cannot take a loan from the bank because he does not own land, and he faces difficulties in starting another business (Deb, 2023). Many of the younger generation do not want to do tea-leaf work permanently but dream of another profession or business, but they do not want to do anything inside the garden because there is no land. Christian Kharia, a young activist, lamented, "My father's and grandfather's generations have poured their life force into this garden, but why don't they have the right to this land?" He himself has a master's degree and wants to make a career in writing instead of the traditional work in the tea garden, but he sees that if his father retires, he will have to leave home. So, he is struggling to get his father's land rights¹⁰ (Srivastava, 2021).

Meanwhile, those who are still working in the garden work inhumanly at very low wages. It is almost impossible to run the family with the meagre earnings of daily wages and ration/other facilities in the tea garden. As a result, the entire family has to join work, not only the women, but also many of the minor children are forced to look for work. A study by Frontier magazine has revealed that women constitute about 60-70% of the total labour force in the tea industry and are also the most exploited. There have also been reports of many women being forced into unethical occupations due to low wages, irregular wage payments, and the closure of plantations. There are also problems such as children leaving school and going to work at a young age or suffering from severe malnutrition. One study found that the daily caloric intake of many families in closed garden areas fell below 1800, in many cases below 1400 calories, indicating extreme malnutrition¹¹ (Talwar, 2023).

The daily struggle to survive in the closed tea gardens has created social unrest. When wages stopped, rations stopped, the workers went to the forest and tried to spend the day by collecting fruits and forest vegetables (WB: Workers' Wages Due, 5 Tea Estates in Alipurduar 'Abruptly Shuttered' Before Diwali, 2023) (Mitra, 2024). Many workers have been forced to leave their families and work as labourers in other states, leading to a massive migration trend in the region. Alaud Lohar, a middle-aged labourer from Kalchini in Alipurduar, said, "There are no job opportunities here; my two sons are working as daily wage labourers in Karnatak (Mitra, 2024). Many young tea workers like him are migrating to other states, leaving behind mostly the elderly and children in the gardens. The social consequences are severe families are breaking up, the elderly are becoming destitute, and the unity of the plantation community is being destroyed.

In this situation, the workers are divided into two groups. One group wants the gardens to reopen and return to work, while the other, disappointed by the long experience, thinks the permanent solution is to find their own way to earn a living in agriculture or other activities with the right to land (Srivastava, 2021). Here is the fundamental contradiction to the owners and the government hesitate, fearing that the tea industry will not continue if the land is given to the workers, and the workers will be trapped in slavery for life if they do not get the land, they say (Deb, 2023). While many older workers rely on luck to make ends meet on the plantation, their children say, "What is the value of our education if we go back to coolie work? Our fight is like a new birth". According to Phulmani Munda (23-year-old), a tea worker and daughter studying in Delhi, she became involved in the land rights movement in her area through Facebook, saying, "Even if my parents accept the garden life, we cannot accept it." (Srivastava, 2021)

There are also subtle cultural and ethnic conflicts in the tea garden areas. Most of the workers here belong to tribal communities—Santhals, Oraons, Mundas, etc., whose ancestors were brought by the British from Chhattisgarh, Jharkhand, Odisha, etc

(Srivastava, 2021). Their language and culture being distinct from that of mainstream Bengal has historically kept them marginalised by the mainstream society and administration. These tribal people living in the "coolie lines" of tea gardens are also fighting for their tribal identity and rights. For instance, they have long been demanding ST (many of them recognised as Scheduled Tribes in other states) status from the state. Political parties also use identity politics. A large proportion of these indigenous workers are also Nepali speakers (or have mixed cultural identities), which again becomes a matter of ethnic politics¹² (Mitra, 2024). In this situation, tribal identity is playing a central role in the land rights movement. They feel that their ancestors have come to this forest land and suffered 150 years of boneless. So, they have the moral right to say, "This land is ours." Anuradha Talwar, a veteran leader of the Adivasi rights movement, hailed the youth movement as "unique and memorable," as it was the first time that the youth were consciously asserting their tribal identity and demanding rights (Srivastava, 2021).

Social conflicts are more visible in the activities of political patronage organisations. For example, in many places during the closure of tea gardens, the local leaders of the ruling party formed committees and ran the business of extracting leaves by labourers. In the Kalchini area of Alipurduar, the so-called 'committee' of the Trinamool used to sell the tea leaves collected by the workers through the wholesaler and give some money to the workers; the rest was received by the middlemen and leaders. According to the worker's complaint, they used to get ₹200-₹220 per a day, but the leaves were eventually sold at many times the price. This has naturally destruction the workers, and they feel that the politicians are taking advantage of the situation. Again, when the government built free houses (Cha Sundari Project), many people did not want to go because they were far away from the tea garden but many relatives of local leaders have moved into those houses or are living on rent. That is, allegations of corruption and favouritism are also widespread in the working class, which is further breaking social unity and trust in the administration. One positive aspect of this socio-economic conflict is that it has led to increased awareness and

solidarity among workers, and in particular, indigenous peoples and women¹³ (Mitra, 2024).

10. Role of Adivasis and Women Workers in the Land Rights Movement: Real Experience from the Tea Gardens of Alipurduar District.

In the tea gardens of North Bengal's Alipurduar district, the majority of the working class is tribal, with about 60-70 percent of women workers (Pramanik, 2023). The presence and role of women in labour-intensive work such as daily tea-leaf plucking in the garden is very important (Bhattacharya, 2024). This widespread presence of indigenous women workers has turned them into "social capital" in the social and economic spheres, as women are the main source of income for most households. But historically, these working women have long been subordinate to men in decision-making. Recently, women's leadership and active participation in the tea garden land rights movement and labour organisations have been increasing visibly. For example, in the Madhu tea estate of Alipurduar, Konika Dhanwar, a woman labourer, has set up a multi-faceted cooperative enterprise. Through her initiative, local women workers are receiving training in animal husbandry, horticulture, and commercial cultivation of vegetables. Konika lamented to the local administration, "The government has not provided any big help, so we are looking for alternative livelihoods on a small scale on our own initiative." This initiative, led by women like Konika, is serving as an inspiration for other garden women workers, positively impacting their social and economic empowerment (Deb, 2023).

The land rights movement among indigenous workers is not new, but since 2021, it has been observed that educated indigenous youth have taken advantage of social media and education to put forward their demands more clearly. Young women like Phulmani Munda, a student of Delhi University, have added a new dimension to this movement by becoming vocal from their respective areas. Phoolmani calls her experience of the land rights movement a "new birth." She said "Our parents may have accepted the exploitation of this garden, but we

cannot accept it anymore." This role of the youth brought more clarity, assertiveness, and social awareness to the movement¹⁴ (Bhowmik, 2015).

The West Bengal government has taken some positive steps to protect the land rights of women workers. For example, recently, in the case of issuing residential land Pattas to tea workers in many families, land deeds have been issued in the joint name of husband and wife or directly in the name of the female member of the family. Malati Pakrin, a female labourer at Lankapara Tea Estate, who was very excited to get the land Patta in her name, said, I am now proud to get the right to the land in my own name; it will secure our future. Like Malati, other women workers have also been inspired by this phenomenon, and land ownership is playing an effective role in enhancing the social status and empowerment of women workers (Post, 2023). However, due to certain social constraints and patriarchal attitudes, the active participation of women workers in decision-making is low. The presence of women in the higher ranks of trade unions is still relatively limited. But gradually the situation began to change. In recent years, the participation of women workers at various levels, from garden panchayats to union committees, has been remarkable. Educated and aware young women workers are now coming forward in leadership roles. On the other hand, the traditional social networks and cultural unity of indigenous communities have provided a strong foundation for these movements. Although the tea workers are mainly associated with various religious (especially Christian missionaries) and social organisations, the recent movement is uniting on the question of 'right to land and livelihood' beyond religious or ethnic identity. Though the sitting MP from Alipurduar and Union Minister of State John Barla represents the tribal community, according to a section of workers, he could not play the expected role in the land rights issue due to political compulsions (NewsClick, 2023). As a result, the young generation is organising and becoming active in demanding land on their own instead of waiting for political leaders. Another important role of women is to increase the moral strength of the movement. When the tea gardens are closed, the male members of the family often go

elsewhere in search of livelihood. In such a situation, the women bear the responsibility of the family and raise their voice to the administration with local demands. When the Raimatang and Kalchini tea gardens in Alipurduar were suddenly closed in 2023, women workers led the protest from the front and highlighted their problems in the media. Puja Kharia, a female labourer, shared her experience and said, “As the gardens are closed, the days of half-empty are coming back; the month's ration runs out in two weeks, and we are somehow spending the day by bringing vegetables and leaves from the forest.” (NewsClick, 2023) Such clear, sincere expressions have attracted the attention of the media and society and put pressure on the administration to act quickly¹⁵.

This active role of the indigenous people and women workers as a whole has not limited the tea garden land rights movement to an economic issue but has transformed it into a social justice and human rights movement. The leadership of educated tribal and women workers of the younger generation has given the movement new perspective and depth, which can play a role in protecting the land rights of tea workers and formulating effective policies for socio-economic development in the future.

11. Case Studies: Tea Estates in Kalchini, Kumargram and Madarihat-Birpara Blocks in Alipurduar District.

The Alipurduar district of North Bengal has been associated with the tea garden industry for a long time. However, the industry has been plagued by repeated ownership changes, managerial negligence, economic crises, and socio-economic problems of the workers. Here is a picture of the recent situation and labour movement in six important gardens like Kalchini, Raimatang, Turturi, Dalmore, Lankapara, and Dheklapara tea garden.

Case 1: Kalchini Block – Kalchini and Raimatang Tea Estates

Kalchini Tea Estate: This heritage garden in the Kalchini block of the Alipurduar district has gone through several ownership and management ups and downs in the past. Around

2011, a corporate company called MARS Group announced its revival by acquiring five closed gardens, including Kalchini. They talked about investing around ₹100 crore and ran the gardens for a while in collaboration with the former government (Ghosal, 2011). Although initially the employment of the workers returned and the local administration also helped, later the MARS Group withdrew from this garden for invisible reasons, or the garden fell ill again (Mitra, 2024). In 2023, the Kalchini tea garden was closed again, the workers were not getting wages from the time of the Puja. In October 2023, the owner of Kalchini left the garden without any advance notice by hanging a “Suspension of Work” notice in the office when one month's wages of the workers were due. About 2,003 permanent workers and an equal number of temporary workers were rendered jobless. To deal with the situation, the district administration offered only a little relief (free rice, etc.) but could not guarantee the opening of the garden. As a result, many workers left the area in search of other work, and those who remained sought work as temporary workers in some of the nearby open gardens (NewsClick, 2023). As political pressure mounted, the government began the process of cancelling Kalchini's lease at the end of 2024 and looking for new investors. In January 2025, just before Honourable Chief Minister Mamata Banerjee's visit to North Bengal, the Kalchini tea garden was leased to a new company and officially reopened. The tripartite agreement, headed by the Labour Commissioner, stipulated that the new owner would run the plantation under supervision for one year, after which the lease would remain in place permanently if the terms of the agreement were met. The workers are happy to get the opportunity to return to work after a long time, but the new contract stipulates that the employer will not have to pay any old dues (PF / gratuity) and they will not be responsible for the construction of new houses (Telegraph, Three tea gardens closed since 2023 with around 3,800 workers reopen in Alipurduar. Our Correspondent, 2025). Because in the meantime, it was argued that most of the labour families of Kalchini had received government-built houses under the state government's tea beautification project (Telegraph, Dheklapara tea garden reopens after 23 years. Our

Correspondent, 2025). Although many workers accept this condition, according to experts, this is an example of a violation of worker's rights. The owner is starting the business from the previous liability, which can be used by other owners as an example in the future¹⁶.

Raimatang Tea Estate: This garden in the deep forest of Kalchini block was also taken by the MARS Group in 2011 but left after a few years (Ghosal, 2011). By 2023, Raimatang's condition continued to deteriorate, and the owner closed the garden before the festival. About 1,200 workers were affected (NewsClick, 2023). When Raimatang is closed, the workers are in great danger because the area is inaccessible and there are no alternative work opportunities. However, a special aspect of Raimatang is that there is a cooperative group of indigenous women taking some social initiatives, such as manual labour and agricultural production. It was these initiatives that saved many families after the closure of the plantation. Along with Kalchini, Raimatang was also reopened by new investors in January 2025. The local Trinamool union leader said this was possible due to the efforts of the state government, and the workers would understand the sincerity of the government in this regard. The opposition, however, doubts how long the revival will last (Correspondent, Three tea gardens closed since 2023 with around 3,800 workers reopen in Alipurduar, 2025). The new owner has also come up with a temporary agreement. After the reopening of Raimatang, the workers were supposed to get work for 20 days a month, and the emphasis was on replanting the garden plants. Because the tea plants and factories were severely damaged during the long closure, it will take time to bring them to full production (Telegraph, Dheklapara tea garden reopens after 23 years. Our Correspondent, 2025)¹⁷.

Case 2: Kumargram Block – Turturi Tea Estate

The Turturi Tea Garden is a decades-old garden in Kumargram block of Alipurduar district. The size of the garden is medium. It was also closed once in 2015 (according to The Times of India, the authorities of Turturi closed the garden in early 2016, citing a loss of Rs 7 crore and

leaving 900 workers jobless.) At that time, 38 rounds of rations were left, and the electricity connection was disconnected due to pending electricity bills (Bhattacharya P. P., 2016). A few years later, some management changes were made, and the garden was partially operational, but finances remained tight. In June 2025, the current owner again hung a notice to stop work. They point to crop failure and lack of funds due to pests in the garden as the cause. Surprisingly, this is done during the peak season of tea production when leaf production is supposed to be in full swing. As a result, the workers and union leaders became angry and demanded urgent intervention of the State Labour Department. 501 workers of Turturi did not receive wages for eight months; about 50 retired workers were waiting for PF and gratuity for nothing. In the midst of all this, everyone is surprised to be locked up suddenly without discussion. This led to an increase in the total number of closed gardens in Alipurduar and a fear among the workers that a wave of closure was coming again. The Trinamool Workers Union called an emergency meeting after the Turturi incident and decided to agitate over why the gardens were being closed during the peak season and make a legal demand for payment of wages (Telegraph, Tea estate shuts over cash and pest peeves, 501 workers jobless in Alipurduar. Our Correspondent, 2025). Indeed, in the case of Turturi, it is clear that some employers are able to freely stop work without paying the worker's dues, and the administration does not have an effective way to tell immediately. At the end of June 2025, the deputy commissioner and labour officials said that the government is looking for new investors, but the workers are living in uncertainty.

Case 3: Madarihat-Birpara Block – Dalmore, Lankapara and Dheklapara Tea Estates

Dalmore Tea Estate: The Dalmore Garden, under the Madarihat-Birpara block, was owned by the Duncans Group and had been lying closed since December 2014. The number of workers was about 960, and they were in dire straits due to non-receipt of wages and rations for a long time. In 2017, the state government legally cancelled Dalmore's lease and began the

process of taking possession of the garden (BISTA, 2022). But it's too late to get a new owner. Dalmore was also included under the FAWLI scheme in 2023 (Mitra, 2024), but with an allowance of ₹1500, labour families were somehow not living. In January 2025, the district administration decided to reopen Dalmore through a tripartite meeting and announced the opening date of the garden on 22 January (Correspondent, Three tea gardens closed since 2023 with around 3,800 workers reopen in Alipurduar, 2025). The opening is made possible by a new investor coming forward, perhaps through the efforts of the local political leadership. Dalmore workers were relieved by the news, as they saw the possibility of a permanent return to work after 8-9 years. However, it is not yet clear how the new system will work. The previous owner, Duncans, is also accused of owing crores of rupees (according to RTI information, Duncans company owed over ₹75 lakh in land rent-cess for 7 orchards in Alipurduar) (Deb, 2023). It is expected that the government will restore the income of the workers by at least opening the gardens through the new owners, although the outstanding dues and land ownership claims are likely to remain pending¹⁸.

Lankapara Tea Estate: This large garden adjacent to the Dima River in the Madarihat-Birpara block was owned by the Duncans Group and was abandoned in 2015. Duncan's simultaneous abandonment of many plantations caused a stir across the state, the most important of which was Lankapara, which employed about 1,200 workers. Human rights groups report that many workers died after the closure of the plantations, many of them due to malnutrition and lack of proper treatment (Bhattacharya P. P., 2016). The government cancelled the lease of Lankapara after a legal battle in 2016-17 and took over the garden. It has been looking for investors for a long time. Meanwhile, the workers spend their days in various ways—some steal tea leaves and sell them for a small income, and some leave the area and go to work outside. In February 2023, the state government completed the work of giving 5 decimal land pattas to each worker family in Lankapara through an administrative camp. The Honourable Chief Minister Mamata Banarjee in West Bengal virtually inaugurated

the event and announced that “more than 6 lakh tea workers have benefitted from this initiative” though in fact, thousands of pattas were given in the first phase (Post, 2023). Although the workers of Lankapara were happy to receive the land papers, many were skeptical because the part of the land that they received the lease for was mainly the area under the houses and houses; their rights over large sections of the garden are still uncertain. Still, women were especially excited because they became recognized co-owners of the family. In mid-2023, it was reported that the state government wanted to hand over some of the abandoned plantations in Duncans, including Lankapara, to a worker's cooperative or a new enterprise. However, by the end of the year, Lankapara had not reopened. In 2025, the Honourable Chief Minister Mamata Banarjee in West Bengal announced that no freehold (permanent ownership) would be given in the case of tea garden land; only leasing would be the project, and there would be provision of work for the locals (Facebook, n.d.). Many people think that instead of giving the land of Lankapara to the workers, the government will keep it in its custody and lease it for tourism or other commercial purposes, about which the workers are again worried¹⁹.

Dheklapara Tea Estate: This garden in the Birpara-Madarihat block of Alipurduar district became a symbol of the "scandalous story" of North Bengal. In 2002, Dheklapara Tea Estate was completely closed and went into bankruptcy (Telegraph, Dheklapara tea garden reopens after 23 years. Our Correspondent, 2025). More than 600 workers were laid off, and over the next two decades, nearly half of the workers died from various causes, many of which locals blamed on starvation and neglect (Singh, 2024). A lot of tragic news has come from this garden, such as the death of workers due to lack of food, lack of medicine, children leaving school and looking for work, etc. The issue was also covered in the national and international media (Al-Jazeera reported in 2013 under the headline Starving Tea Workers of India, in which there was talk of a crackdown) (Pandey, 2014). The state government has given assurances from time to time, but no real action has been seen for 23 long years. Finally, in 2023, the Honourable

Chief Minister Mamata Banarjee in West Bengal took the initiative to acquire land in Dheklapara and give pattas to the workers, and in February, 416 labor families of Dheklapara were given land rights (Post, 2023). The district administration was also looking for new investors. At one point in the middle of 2023, it was heard that the garden had opened once, but after a few months it stopped again. Perhaps the investor retreated due to financial difficulties (Mitra, 2024). In April 2025, the Dheklapara tea garden was finally reopened by a new company (Kolkata-based Samyukta Vanijya Private Limited). After 23 years, the workers opened the gates and joined the work and started with worship and tree plantation with joy. According to the new agreement, the company will not provide accommodation to the workers (as they have already got the tea house) and will not be responsible for clearing the outstanding dues of the previous owner. The workers accepted the condition in the hope of getting the plantation back after a lot of hardship, said Uttam Saha, a leader of the Trinamool Workers Union. The opening of Dheklapara gave hope to the tea industry circles of North Bengal, as it was the revival of the garden, which had remained closed for the longest time. However, analysts warn that sustaining this recovery will require major investment and care-much of the factory's machinery has been stolen or destroyed, and tea plants have turned into wild forests, so it will take time and money to get to full production capacity. The new owners are currently focusing on the restoration and maintenance of the garden, giving workers 20 days of work, 8 hours a day (Telegraph, Dheklapara tea garden reopens after 23 years. Our Correspondent, 2025). The successes and failures of the crackdown will be a lesson for policymakers in the future²⁰.

Key observations: From the above case studies, some important points are clear:

(1) Administrative delays: In most of the plantations, years after the owners left, government intervention has started somewhere, in which the workers are in serious trouble.

(2) Legal and policy complications: Legal procedures such as cancellation of leases,

issuing new leases, etc., are time-consuming, and many investors lose interest in the process.

(3) Political Will and Event-Driven Measures: Suddenly strong steps have been taken before any major political program or election (such as opening 3 gardens at once before the visit of the Honourable Chief Minister of 2025), which shows the lack of consistent planning.

(4) Compromise to protect the interests of the workers: In bringing in new owners, the government is waiving many fair dues of the workers or relaxing the laws (such as the condition of not paying the old dues and not giving the workers accommodation), which is weakening the legal rights of the workers.

(5) Problems going on: Some gardens are still closed (such as Lankapara and Turturi); that is, the whole crisis has not been solved yet. As of mid-2025, 5 of the 65 gardens in Alipurduar were still closed (Correspondent, Tea estate shuts over cash and pest peeves, 501 workers jobless in Alipurduar, 2025), though as many as 20 were closed before that (Mitra, 2024). That is, although many of the recent initiatives have been opened, some new gardens are getting sick. So, it's an ongoing process, where one group is opening gardens and the other is closing them unless major structural changes can be made.

Case Review:

(1) Wages and social benefits: Wages and social benefits are a measure of the socio-economic status of tea workers. The daily cash wages were ₹232-250 in West Bengal till 2023 (almost the same in Assam), while the South Indian states were paying ₹400-₹450. According to the Minimum Wages Act, there is actually a higher wage for this work, but in West Bengal and Assam, due to lack of political will, the owners are paying less. As a result, the poverty rate of working families is very high, and the per capita income is far below the national average. While the closed garden workers are paid a FAWLI allowance of ₹1,500, the average family size of 4-5 members earns less than ₹10 per day which is grossly inadequate. For this reason, many of the workers in the closed plantations wanted to take advantage of the 100 days of work in MGNREGA, but not in an organized way in all

places. In some areas, the district administration has provided temporary employment to workers engaged in road construction or cleaning work (for example, in some villages of the Dooars, workers were engaged in such work during 2020-21 when the gardens were closed due to Corona and lockdown)²¹ (Mitra, 2024).

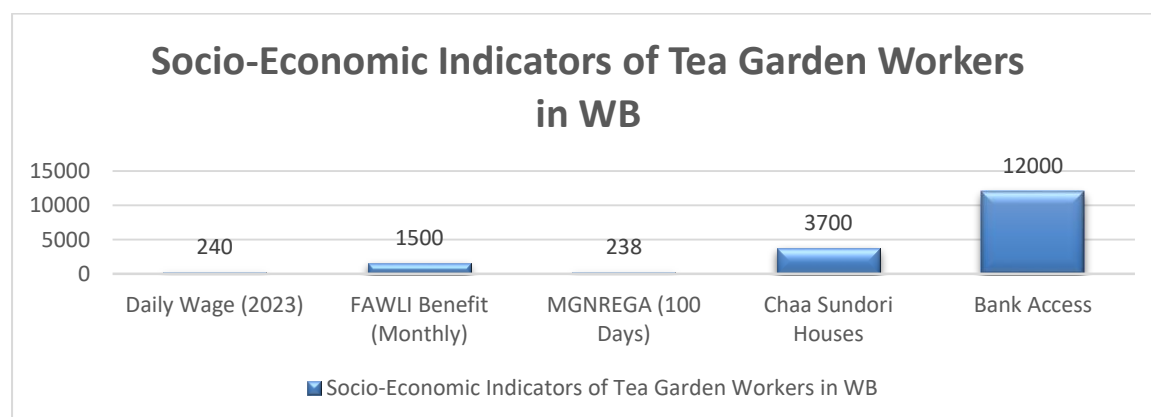
(2) Housing infrastructure and living conditions of the workers: Reviewing the housing infrastructure and living conditions of the workers, it can be seen that most of the tea garden labour line families live in century-old quarters or huts. About 3,700 new houses have been constructed by 2022 in the tea garden housing scheme of the state. But the problem is that in many cases these houses have been built in colonies far away from the garden area, so the working families did not want to go there. Initially, the family came to only 70 houses out of 500 built near the Torsha tea garden. According to the workers, their movement and livelihood will be difficult if the workplace is far from the settlement, especially for the elderly and women. So many houses of tea beauties are empty, or some have gone on rent. Learning from this failure, the government later decided to give Pattas to the workers on the land where they live in the tea garden and help them in repairing/renovating their houses (Mitra, 2024). One positive aspect of this is that since the workers want to stay in the garden for the convenience of work, their wishes have been respected²².

(3) Bank credit and financial inclusion:

Another important statistical aspect is bank credit and financial inclusion. As the workers did not have land or immovable property, they were deprived of the benefit of bank loans, as a result of which they fell into the clutches of private moneylenders. Now that some families have received the deed of the land, they will be able to take a loan with collateral in the bank, but small landholdings of 5 decimals will usually not qualify for as much credit in the bank valuation; this is also real. If the government makes a house on that land (like the housing scheme), then, of course, that house and land will create wealth, and the workers will be able to go to the financial institution (Post, 2023).

Overall, the statistics indicate that the scale of the problem is huge, millions of people are affected, but the government's actions have been isolated and slow. The recent activities (issuing pattas, issuing SOPs, reopening gardens) are being implemented under a lot of labour movement and political pressure. From the following charts and data, it is clear that if the government had taken a strong role from the beginning and cancelled the lease, implemented an alternative management system, and rehabilitated the workers in time, the loss of life and livelihood of so many people could have been minimized²³.

Clustered Chart No- 01



Source: West Bengal Labour Department Circulars (2021-2023), Ministry of Rural Development, govt of India; The Hindu (2022), Anandabazar Patrika (2022), District level interviews and NGO Report, The Telegraph (2023).

12. Policy Recommendation:

Based on the experience of the reclamation efforts of the tea gardens of Alipurduar described above, here are some policy recommendations that can be useful for land reform and labour welfare in the future.

(a) Legal recognition of tea worker's land:

The government has already started giving 5 decimal land Pattas for workers' housing; it should be made more comprehensive and permanent. Every working family living in the tea garden area should be assured of the ownership of residential land, and if they have so far cultivated any fallow land adjacent to the garden (some garden workers have cultivated vegetables), their rights may be considered. Leases should be made as long-term or transferable as possible, rather than 30-year leases, so that workers feel secure. Besides, coordination should be made with banks and financial institutions to identify the leased land as collateral; otherwise, only paper land will not change their condition much (Mitra, 2024). Here it must also be ensured that the ownership of the land does not conflict with the main work (tea production) that is, the workers can do gardening and alternative work even if they want to own the land²⁴.

(b) Women's Land Rights and Empowerment:

The provision of joint ownership (in the name of both husband and wife) or in the name of the elderly woman of the family should be strictly followed everywhere while issuing land pattas. This will increase the safety and security of women. Moreover, since women are the main workforce in the tea industry, the ownership of land is justified. Furthermore, each tea garden should have a separate cell or committee for women workers who will look after their special problems (such as maternity benefits, sanitation, and prevention of harassment) and advise the management. Women's leadership should be encouraged at the union and cooperative level for example, the government can help form women's cooperatives with training and a small amount of capital (like Konica Dhanwar's initiative) (Deb, 2023). With this, the women of tea gardens will also be able to earn extra income by starting alternative

economic activities (handicrafts, animal husbandry, tourism, etc.).

(c) Speedy Lease Cancellation and Rehabilitation Process:

Immediate lease cancellation and government takeover should be implemented against the tea gardens that are closed beyond the stipulated time (currently 3 months) (the current SOP should be fully implemented) (Correspondent, Three tea gardens closed since 2023 with around 3,800 workers reopen in Alipurduar, 2025). The cancellation of the lease does not mean that the government will run the tea garden itself; rather, it can temporarily hand it over to the provisional management or the workers' cooperative until a suitable new investor is found. For example, in the state of Kerala, some tea gardens have been run successfully by worker's cooperatives. In West Bengal, production can also be run on a trial basis by worker's cooperatives or state task forces so that the gardens are not completely abandoned. By doing this, the employment of workers will also be maintained, and the resources of the garden will also be protected. When a new investor comes in, he must be forced to take some of the responsibility for paying the previous dues, otherwise the owners will tend to flee without punishment. The government should announce some incentives (tax breaks, subsidies) for new investors, provided that they meet a portion of the old dues and commit to running the garden for a minimum period²⁵ (at least 5 years).

(d) Labour Welfare and Social Security:

Since most of the tea workers belong to the day labour class, it is necessary to have a special social security ring for them. The FAWLI scheme's allowance amount of ₹1500 has remained unchanged for many years-it needs to be increased in line with inflation (proposed to be ₹3000), and 100% of the workers must be covered by eliminating the discrepancies (paperwork, bank account complications) in the distribution of the allowance (WB: Workers' Wages Due, 5 Tea Estates in Alipurduar 'Abruptly Shuttered' Before Diwali, 2023). At the same time, it is necessary to coordinate with the Centre to bring the MGNREGA scheme to the tea garden areas so that the workers can earn at least minimum wages through basic work

(soil cutting, road construction) during the shutdown or irregular work. For health and nutrition, community kitchens or anganwadi canters have to be kept active in every garden. Many closed gardens have been closed due to lack of staff. Feeding programs should be continued through schools and anganwadis so that children get food. The state government's "doorstep ration" scheme can also be implemented in tea gardens so that workers do not have to travel far to collect rations and are not left without rations in the absence of people from outside (such as during strikes).

(e) Modernization of the tea industry and alternative plan: Many tea gardens have lost productivity due to lack of investment over the years, and the owners are leaving the gardens on the pretext of loss. Under the joint initiative of the government and the Tea Board, the tea garden modernization project (planting new varieties of tea trees, irrigation system, and improving machinery) should be undertaken so that the gardens remain profitable. Also, some of the lands that are unfit or surplus for tea cultivation can be put to alternative use, such as tea tourism (homestays, tea resorts), perennial other fruits/crops cultivation, etc (Jha, 2021). However, local workers and the community must be prioritized. It should be mentioned in the terms of the land lease that if such an alternative trade takes place on the land of an orchard, then a part of the income will have to be spent on the welfare of the workers, and the local youth will have to be given employment. This will reduce the fear of the workers that the government will take away the land and give it to the tourist traders rather, the workers will be its partners.

(f) Institutional Coordination and Monitoring: A state-level coordination committee with all the departments and stakeholders related to tea gardens should be activated, which will collect regular information and identify which gardens are in a vulnerable state. The Revenue department of the garden and the district administration should be instructed that if the lease rent or government cess is pending for more than 6 months, they should issue a warning, and the labour department should keep the garden under surveillance. Trade unions and worker's

representatives should also be included in this process so that information is not hidden. Tripartite meetings should be organized and fruitful in time. 'NewsClick report' mentions that after the closure of Kalchini, etc., gardens, the Labour Department called for a meeting, but the employer did not come, so the solution was not found (NewsClick, 2023). In this case, the law should be amended to impose a fine or takeover of management against the absentee owner.

(g) Special initiatives for indigenous and local communities: The indigenous people of the tea garden areas are suffering from multidimensional deprivation. The state government has already created a special Tea Directorate through which some development projects are being carried out, but the tribal youth need special packages for higher education, jobs, and cultural protection. To make the path of education smooth from tea garden to university, hostels and scholarships should be increased, this will enable them to go for alternative employment in the future and reduce their dependence on gardens. At the same time, if the issues related to the recognition of their Scheduled Tribe status are resolved in coordination with the Center, then the confidence of the society will also increase. If tribal cultural centers and language schools are set up, the new generation will feel proud of their identity and will participate in the rights campaign. When they see that the government is really standing with them, the feeling of alienation that was being created in areas like Alipurduar will be removed.

(h) Development of a cooperative and worker ownership model: As a final recommendation, the government can establish a worker cooperative-driven model in 1-2 closed tea gardens on an experimental basis. The basic capital and technical know-how will be provided by the government/tea board, and the workers themselves will be the owners (each worker member will be the shareholder of the cooperative). If this model is successful, the workers will be able to run the plantations that will be ownerless in the future and share the profits. Of course, the tea industry is a competitive sector, and management skills are needed, so the cooperative needs to hire experts

for training and care. But in this way at least it will be proved that workers are not “liabilities”; they can be converted into wealth if they get proper help. This model will also help women in leadership, as many women will play an important role in the society²⁶.

13. Concluding Observation:

It is clear from this case study of the reclamation of Alipurduar’s tea estates that land reform is a complex, multi-layered challenge that involves historical injustices, administrative failures, and socio-economic conflicts. The tea workers of West Bengal have been neglected for many years. They had to fight for land rights, wages, and basic needs. In recent years, some of the government’s initiatives (land leasing, closed garden SOPs, housing projects) have shown promise, but to make them sustainable and inclusive, the policy changes mentioned above must be considered. The land of tea gardens is not only the production area of cash crops but also the habitat and culture of thousands of people. The conflict over this land has transcended

economic boundaries into an issue of human rights and social justice. So, when it comes to land reform, the administration needs to put people at the center, listen to the voices of workers and include their representatives, especially women and tribal leaders, in the decision-making process.

The experience of the entire Dooars region, including Alipurduar, shows that not only the text of the law but also political will, efficient administrative management, and participation of workers, these three efforts can provide a permanent solution to the long-standing crisis. The land reforms will be successful only when the tea workers can at least partially take control of their own destiny and come out of the circle of slavery. Hopefully, the government policymakers will realize this reality and take quick and effective steps so that the tea gardens of West Bengal become truly green and smiles appear on the faces of all the workers, including the tribal women.

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IDENTITY-BASED AUTONOMY MOVEMENT IN NORTH BENGAL: THE CASE OF GREATER COOCH BEHAR

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Abstract

Identity-based autonomy movements have been a persistent phenomenon in postcolonial Indian politics, and the North Bengal region is no exception, with various movements launching in the region demanding political autonomy or a separate state. The Greater Cooch Behar movement is unique in that it is based on historical grievances, constitutional rights, and an identity crisis within the region's indigenous Rajbanshi identity. The paper highlights that the Greater Cooch Behar movement encompasses more than merely claiming autonomy or territory; it also involves asserting political recognition, preserving cultural identity, and addressing historical injustices. The core argument of this movement is based on the controversial merger of the former princely state of Cooch Behar and West Bengal in 1950, which movement leaders claim violates the terms of the Instrument of Accession (1949). This constitutional narrative provides a framework for this movement to argue for Greater Cooch Behar through the lens of legality and democratic rights, rather than secession. This paper will examine the demand for a Greater Cooch Behar state through the lens of identity politics and autonomy.

Keywords: Identity Politics, Autonomy Movements, Greater Cooch Behar, Rajbanshi Identity, North Bengal, Indian Federalism, Ethnic Mobilization.

Introduction

Identity politics has played a major role in driving autonomy movements across the world, especially in India, where varied ethnic, linguistic, and cultural identities have often sought greater political legitimacy and self-governance. And autonomy can be understood as a sign of the increasing patterns of new political spaces that talk about rights and justice, as well as the basis for these rights. Different kinds of autonomy are, in fact, varied forms of contestations, presenting new possibilities for freeing democracy from prevailing power structures and ensuring a restructuring of society. Resistance to the state's power and demand for autonomy are currently encountered across various sections of society, including women, ethnic groups, classes, and so on. Partha Chatterjee, an eminent scholar who has studied the concept of autonomy, invented the term 'politics of the governed,' which clearly focuses on the relationship between ruler and ruled. It

represents politics, which, in the face of apparent governmental power, can demand autonomy for itself (Chatterjee, 2004). Another notable scholar, Ranabir Samaddar, stated that autonomy is one of the key concepts of reorganizing society and creating a dialogic zone for negotiating autonomies. Raising the claim for autonomy is the most effective method to challenge constitutional essentialism and bring the discussion agenda to the forefront (Samaddar, 2005: 10-11).

The demand of ethnic groups ranges from greater autonomy and political, cultural, and economic empowerment to the assertion of the right to self-determination, self-governance, and political recognition either through the formation of a separate state within the Indian Union or a sovereign homeland separate from India (Datta, 1988: 517). The autonomy movement in India has employed various tactics and strategies to achieve their objective, such as insurgency, militant, *dharna*, *rail roko*, *haratal*, *band*, *gherao*, and peaceful

negotiations. These strategies have evolved based on the movement's leadership, political climate, and state response. These strategies are very crucial for analysing the success or failure of autonomy movements in the Indian context.

Many separatist forces have formed in North Bengal overtime, with demands and shouts that seemed to be a desperate attempt to establish a distinct ethnicity against the backdrop of long-standing exploitation and discrimination in society. Similar to the way water flows in different directions after a dam bursts, the blocked ethnicity finds a way to be displayed up in various forms. The demand for a separate state has become an ethnic sentiment (Nag, 2023: 15-17). The Greater Cooch Behar movement has persisted for a long time as an autonomy movement. At various stages this movement has been nurtured under the umbrella of many organisations. The Greater Cooch Behar Peoples Association (GCPA) is the movement's main organization. The Rajbanshi community's long-standing social-political-cultural domination and subjection have given rise to new dimensions in the movement. The Rajbanshis are Northern Bengal's indigenous people and the province's third largest Hindu caste. The term Rajbanshi literally refers to a royal community or royal blood. For a long time, the Rajbanshi community ruler/king ruled over the Kamtapur region. The Rajbanshis were mainly settled in the Cooch Behar and Jalpaiguri districts of North Bengal. The subjects of Cooch Behar were divided into two groups: *Deshi* and *Bhatias*. The Rajbanshis (*Deshis*) raised the question of their right to be 'sons of the soil'. The *Deshis* believed that the *Bhatias* had made them impoverished, and therefore called for the expulsion of the *Bhatias* from Cooch Behar. The Rajbanshis strongly supported the preservation of the Kamtapuri/Rajbanshi language, considering it distinct from Bengali. On the other hand, the *Bhatias* were likely to adopt Bengali as their primary language, leading to fears of losing their cultural heritage.

Objectives of the Study

Objectives of the study seek to address following:

- To examine the background and present circumstances of the Greater

Cooch Behar movement for a separate state.

- To assess the role of Rajbanshi identity in the Greater Cooch Behar movement.
- To examine the key factors contributing to the emergence of the Greater Cooch Behar movement.
- To analyse the public perception and mass involvement in the Greater Cooch Behar movement.

Review of Literature

mined the Greater Cooch Behar movement from the perspectives of identity formation, regionalism, and the struggle for autonomy. Sukhbilas Barma (2007) examines the various socio-political movements that have shaped the Sub-Himalayan region of North Bengal over the past century. He noted that the objective of separating from West Bengal and forming a separate independent Greater Cooch Behar state is not limited merely to political or administrative division; rather, it also involves creating ethnic and linguistic divisions among the people of the same region, particularly between the *Deshi* and *Bhatia* communities. Rup Kumar Barman (2007) deals with a critical examination of the primary discourses surrounding various forms of regionalism in colonial and postcolonial India. He focuses on the processes of cultural transformation that produced the regional aspirations of North Bengal and Lower Assam. It also explores the root causes of regionalism and critically evaluates the legitimacy of regionalist issues in the light of globalization, providing an informed view of how regional identities continue to evolve in contemporary India. Sumit Mukherjee and Oli Mohammad (2015) examine the emergence of political movements and militant activities in North Bengal and Assam, with special reference to the Greater Cooch Behar and Kamtapur movements. Presents a comparative analysis of these two militant movements, offering a critical evaluation of their origins, objectives, and consequences. Sailen Debnath (2016) focuses on the socio-cultural origins of the Koch-Rajbanshi identity, their religious life in earlier times, and their political movements in both the past and the present. The author analyses the process of caste mobilization among the Koch-Rajbanshi community and underlines the major

role of Thakur Panchanan Barma in this transition. Samir Kumar Das (2018) critically analyses North Bengal as a major historical migratory route and highlights the long history of continuous population movement in the region. He argues that many of the region's current challenges stem from an incomplete settlement process, which has given rise to multiple notions of homeland.

Research Methodology

The present study undertaken is explanatory in nature and it is done on the basis of qualitative and quantitative research techniques. This study based on both Primary and Secondary data. Primary resources consist of fieldwork, government reports, and library/archival study of most of the newspapers published at the regional and national levels, while secondary sources consist of books, articles, journals, and other relevant literature. The field study area, which is Dinhata, Mathabhanga, Sitalkuchi, and Cooch Behar-I. A purposive sample was used in the course of the study. The data was gathered using a closed-ended questions. The sample size was an eighty (80). Personal and group (focus group) interviews have been conducted with members of the GCPA, local peoples (Rajbanshi), and local politicians.

Demand for Greater Cooch Behar and Formation of GCPA

The demand for a separate 'Greater Cooch Behar' comprising Cooch Behar, Darjeeling, Jalpaiguri, North and South Dinajpur and the undivided Goalpara districts of Assam is based on the claim that the original merger agreement between the Maharaja of Cooch Behar and the Government of India was ignored during the accession of Cooch Behar to India in 1949. The Cooch Behar princely state was merged with the Dominion of India as a Chief Commissionerate on 12 September 1949 and became a district of West Bengal on 1 January 1950. The GCPA, founded on 9 September 1998 at Khagrabari Primary School, is spearheading the movement for a separate state of Rajbanshi. The organisation was initially established with three objectives, namely, appointing Kumar Anilendra Narayan as the Chairman of the Cooch Behar Debutter Trust Board as a descendant of the Cooch Behar dynasty; preserving the culture and historical

monuments of Cooch Behar; and including the history of Cooch Behar at all levels of education (Das, 2018: 165).

The GCPA's demands, as set out in their memorandum to the union home minister on June 18, 2005, and their booklet '*Danga Kuchbihar Basir Koyta Katha*' (Some Proposals of the People of Cooch Behar), demanded that the accession guidelines be implemented, which would leave Cooch Behar as a C-category state. The agreement highlighted the issues of history, tradition, language and culture of the people of Cooch Behar, as well as community harmony and the promise of the rights of the indigenous peoples to food, shelter, health and education; hence, their slogan is '*Kuchbiharer Bharat Bhukti Chukti Kuchbihar Basir Mukti*' (The instrument of accession is the liberation of the people of Cooch Behar) (Barma, 2007: 365).

On 20 September, 2005 an agitation for statehood led by the GCPA took a nasty turn. The GCPA called for a hunger strike in front of the Cooch Behar District Collector's Office to demand separate statehood. The agitators demanded that assembly election not be held in Cooch Behar. They wanted the formation of an interim caretaker government by the center. More than 20,000 people gathered in various location outside Cooch Behar town to embark on an indefinite hunger strike. The leader of the present agitation Bangshi Badan Barman went to jail after an ugly flare-up in 2005 for the Greater Cooch Behar statehood movement. The 56 men were arrested for their role in the violence that erupted around a meeting of the GCPA in Chakchaka (Roy, 2019: 246-249). The GCPA is also conducting a simultaneous hunger strike with 80 activists at Delhi's Jantar Mantar on 2011. Trouble erupted on 21 February, 2016, alongside a 'Rail Roko', and thousands of supporters squatting on the lines at the New Cooch Behar station, wanting that the Greater Cooch Behar. This time, police sprang into action just after 72 hours of protests, which not only hampered rail services in North Bengal and Assam, yet also left three trapped passengers dead. Police have taken into jail at least 15 leaders of the GCPA (*The Indian Express*, 2016). The protest on 11 December, 2024 at the Tufanganj Jorai Railway Station, with two key demands: the fulfilment of the 1949 separate statehood claims under the India

Accession Treaty and the recognition of the Rajbanshi language as the eighth scheduled language in the Indian Constitution (*The Week*, 2024).

Analysis and Discussion—Understanding public perception regarding the movement is essential in assessing its legitimacy, challenges, and future prospects. Public reaction to the

movement has been diverse, ranging from staunch support by local communities advocating for recognition and autonomy. This section explores the public observation of the Greater Cooch Behar Movement by examining various stakeholders, including local residents, members of the GCPA, experts and local politician.

Table 1: Support Base of the Greater Cooch Behar Movement (n=80)

Support this movement	No. of Respondent	Per cent
Yes	73	91.25
No	7	8.75

Source: Field Survey, 2023.

It was observed through the interaction with people, 91.25 Per cent respondents supported the movement directly or indirectly and 8.75

per cent peoples express that they do not support the movement (see Table1).

Table 2: Reason for Supporting Greater Cooch Behar (n=80)

Reason to support the movement	No. of Respondent	Per cent
Constitutional Right	7	8.75
Victory	34	42.50
Preservation of Language, Culture and Heritage	16	20
Employment	16	20
Others	7	8.75

Source: Field Survey, 2023.

Table 2 shows that the 8.75 per cent respondents to support the movement for constitutional right. 42.50 per cent respondent believe that the one-day Greater Cooch Behar will be formed. 20 per cent of respondents demanded that the recognition of the

Rajbanshi/Kamtapuri language in 8th Scheduled of the Indian Constitution and preserve their historical glory and culture. 20 per cent of respondents respond that the lack of employment opportunity. 8.75 per cent respondents believe that others factors are involved for support the movement.

Table 3: Causes Responsible for the Greater Cooch Behar movement (n=80)

Factors behind the Resurgence of the Greater Cooch Behar Movement	No. of Respondent	Per cent
Underdevelopment	8	10
Ethnic identity crisis of the Rajbanshi Community	9	11.25
Economic Disparity	7	8.75
Wrong policies by the Government	8	10
Merger of Cooch Behar with West Bengal on 1950	4	5
All of the above	44	55

Source: Field Survey, 2023.

The respondents were asked to choose from six options to identify the factors responsible for

the Resurgence of the Greater Cooch Behar movement. 10 per cent of the respondent's reply that the underdevelopment. 11.25 per cent of the respondent believed that the origin of the separate state movement was a cause of the

ethnic identity crisis of the Rajbanshi community. 8.75 per cent of the respondent considered the economic disparity between North and south Bengal has been a persistent issue. They claim that, while South Bengal has historically been the economic and administrative hub of the state, on the other hand, North Bengal has often lagged in terms of industrialization, infrastructure and socio-economic opportunities. 10 per cent of respondent think that the implementation of

government policies in this region is wrong. 5 per cent believe that the main reason for the Greater Cooch Behar Movement was the merger of Cooch Behar with West Bengal in 1950. In spite of that, a majority of 55 per cent of respondent opinion that all the above-mentioned points are equally responsible for the separate statehood movement for the Rajbanshi Community (see Table 3).

Table 4: Impression of the GCPA Leadership in North Bengal (n=80)

Influence of GCPA in North Bengal Region	No. of Respondents	Per Cent
Massive	37	46.25
Marginal	22	27.5
Substantial	21	26.25

Source: Field Survey, 2023.

Presently, the GCPA organization is split into three faction, one faction is Anant Maharaj, originally known as Nagendra Ray, the supreme leader of the Greater Cooch Behar People's association. He announced himself as a 'Maharaj' of the Rajbanshi community. Second faction is Bangshi Badan Barman, GCPA leader, and currently chairman of the West Bengal Rajbanshi Development and Cultural Board. Third faction is Shariful Islam, secretary of the new GCPA faction, stated that, "We have been with GCPA since its inception. However, over the years, Ananta Maharaj has built a palace for himself, and Bangshibadan as chair of the development board didn't do anything for ordinary Rajbanshi people although the state gave funds. That is why we severed ties with them and will take up our demands with the state government" (*The Telegraph*, 2022). The new faction has raised initiating the recruitment of the Rajbanshis to the Narayani Battalion of the state police, allocating additional funds to the development board, and introducing Rajbanshi as a compulsory language in schools, colleges, and universities of Cooch Behar. From table 4, it follows that, the influence of GCPA leadership in North Bengal is massive level in 46.25 per cent, marginal level in 27.5 per cent, and substantial level in 26.25 per cent.

Conclusion

This study has examined the Greater Cooch Behar movement as a sustained identity-based autonomy movement rooted in historical experience, socio-economic marginalisation, and constitutional contestation. Empirical evidence from the field survey reveals overwhelming popular support for the movement, with more than ninety per cent of respondents expressing direct or indirect sympathy. This support is not driven by a single factor; rather, it emerges from a convergence of underdevelopment, economic disparity, identity insecurity, and dissatisfaction with state policies. The study further establishes that the Greater Cooch Behar movement is deeply embedded in the identity crisis of the Rajbanshi community. The perception of cultural marginalisation, linguistic neglect, and loss of indigenous status has generated a strong collective consciousness among Rajbanshis.

The study also highlights the role of uneven development within West Bengal in intensifying regional alienation. The persistent economic gap between North and South Bengal has produced a sense of relative deprivation among the people of North Bengal. These material inequalities interact with identity-based grievances, transforming socio-economic frustration into political mobilisation. GCPA continues to be the foremost institutional actor in terms of expressing and mobilizing the movement at the organizational level. Despite

internal factionalism and leadership disputes, the GCPA continues to exert considerable influence over the political imagination of the region. The persistence of the movement suggests that administrative measures alone are insufficient to address its demands. A durable resolution requires a comprehensive approach that combines cultural recognition, equitable development, political inclusion, and constitutional dialogue.

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AN OVERVIEW OF TRENDS, PATTERNS AND REGIONAL DISTRIBUTION OF BAMBOO PRODUCTION IN INDIA

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Abstract

Bamboo is a key renewable resource supporting ecological sustainability, rural livelihoods, and the green economy in India. This study analyses trends in bamboo-bearing areas between ISFR 2021 and ISFR 2023, examining regional distribution and disparities across states. Findings reveal an overall national increase but significant regional variation, with strong growth in states like Arunachal Pradesh, Madhya Pradesh, and Odisha, while others, such as Karnataka, Tamil Nadu, and Telangana, show notable declines. The North-East and central India remain dominant bamboo regions, whereas northern and western states continue to have minimal bamboo resources. The study stresses the need for targeted policy responses, improved management, and strengthened value chains to achieve balanced regional development and sustainability within the bamboo sector.

Keywords: Bamboo production, ISFR 2021–2023, regional disparities, National Bamboo Mission, Trends

1. Introduction

Bamboo, a fast-growing perennial grass with over 1,400 species worldwide, has emerged as a critical natural resource with ecological, economic, and cultural significance. Globally, bamboo forests cover an estimated 31.5 million hectares, supporting the livelihoods of nearly 2.5 billion people through diverse uses in food, shelter, handicrafts, and industrial products (Wu et al., 2015; Nath et al., 2020). In recent decades, bamboo has gained attention not only as a traditional material but also as a renewable substitute for timber, plastics, and high-emission construction materials, aligning it with global sustainability agendas (Liese & Köhl, 2015; Canavan et al., 2016). In India, with more than 136 species across varied ecological zones, bamboo accounts for nearly 12.8% of global resources and has been positioned as a key driver for rural development, industrial diversification, and

climate mitigation (Sapovadia, 2023; Patel, 2024).

The ecological role of bamboo extends far beyond its rapid growth. Bamboo a fast growing, multi-purpose grass is increasingly recognised as a strategic natural resource that links rural livelihoods, industrial raw-material security and environmental sustainability. International agencies and research organisations note bamboo's contributions to land restoration, biodiversity conservation, climate mitigation (through rapid carbon sequestration), and disaster-resilient construction making it directly relevant to multiple UN Sustainable Development Goals (SDGs). Studies demonstrate that bamboo plantations contribute significantly to carbon sequestration, with certain species, such as *Phyllostachys pubescens*, outperforming conventional tree species in terms of annual carbon uptake (Li et al., 2021; Liu et al., 2019).

Additionally, bamboo products ranging from engineered scrimber boards to textiles store carbon ex-situ, extending sequestration benefits beyond forest ecosystems (Gu et al., 2019; Van der Lugt & Vogtlander, 2015). Bamboo's perceived potential in livelihood development has led to development interventions that aim to strengthen the bamboo industry via activities such as training participants in bamboo management, strengthening institutions, and raising awareness (Binfield et al., 2025).

In India, the central government has moved from piecemeal support to an explicit, mission-oriented approach. The restructured National Bamboo Mission (NBM) aims to expand the area under bamboo on non-forest lands, strengthen planting material and nursery networks, develop treatment/processing capacity and create market linkages to raise farmer incomes and reduce import dependence. State governments and other central schemes put the market-building pieces in place. Examples include the Ministry of MSME's SFURTI cluster approach for bamboo and cane handicraft/furniture clusters, export facilitation and standards work through agencies such as APEDA/DGFT, and state-level industrial policies (for example, the Jharkhand MSME Promotion Policy 2023 encourages bamboo-based industries through incentives and support and the Mukhya Mantri Aajeevika Samvardhan Yojana) that promote traditional crafts like those involving bamboo to scale production and manufacturing. Taken together, these programmes helping farmers grow bamboo, building local clusters, improving processing facilities, and opening market and export opportunities form the foundation of India's efforts to turn bamboo's environmental benefits into real economic gains for people and communities. Despite this potential, India's bamboo sector continues to face constraints, including fragmented value chains, inadequate industrial processing infrastructure, and a lack of standardized data on productivity and yields (Dwivedi et al., 2019; Kumar et al., 2020). These challenges necessitate a systematic study of production trends, regional disparities, and pathways for sustainable development. This paper addresses these issues by situating bamboo within India's developmental priorities and examining its potential through ecological, economic, and governance lenses.

2. Literature Review

2.1. Ecological Significance and Carbon Sequestration

Bamboo's ecological attributes, rapid growth, high regrowth capacity, and substantial biomass accumulation make it a unique renewable resource (Wu et al., 2015; Zhou & Jiang, 2004). Remote sensing studies have quantified bamboo's aboveground biomass, demonstrating annual sequestration rates exceeding many hardwood species (Xu et al., 2016; Feng et al., 2023). Comparative studies in China, Vietnam, and India have confirmed bamboo's higher sequestration potential relative to Masson pine, Chinese fir, and eucalyptus under managed systems (Xiao et al., 2007; Jiang et al., 2011; Yen & Lee, 2011). In addition to in-situ benefits, bamboo contributes ex-situ carbon storage when processed into long-lived products such as flooring, panels, and laminates (Gu et al., 2019; Van der Lugt & Vogtlander, 2015). These studies affirm bamboo's dual role as both a carbon sink and a sustainable raw material for low-carbon industries (Pan et al., 2023; Ge et al., 2018).

2.2. Bamboo Management and Economic Models

The economic viability of bamboo plantations depends heavily on management practices. Wu et al. (2015) showed that land expectation values (LEV) differ significantly between stem-only and stem-plus-shoot management models, with the latter yielding higher returns but greater sensitivity to labour costs. Policy interventions, such as carbon credits or concessional financing, have been modelled to substantially enhance farmer incomes and encourage sustainable bamboo expansion (Wu et al., 2015; Rao et al., 2019). Evidence from Zhejiang, China, and other regions illustrates that optimised management can triple culm harvests and simultaneously expand carbon sequestration, making bamboo both a livelihood and climate asset (Xu et al., 2024; Tang et al., 2012). Yet in India, despite policy shifts like the National Bamboo Mission, farmers face barriers of credit, market information, and extension support, which constrain uptake of improved models (Kumar et al., 2020; Gupta et al., 2018).

2.3. Product Diversification and Industrial Applications

Industrial research highlights bamboo's versatility across construction, textiles, composites, and bioenergy. Life cycle assessments demonstrate that bamboo scrimber flooring can achieve a net negative carbon footprint due to embedded carbon storage outweighing emissions from processing (Gu et al., 2019). Similarly, engineered bamboo beams and laminates are promoted as viable substitutes for steel and cement, offering both environmental and mechanical advantages (Song et al., 2017; Lee et al., 2020). In textiles, bamboo fibres offer potential alternatives to cotton and polyester, although environmental performance varies between mechanically extracted fibres and chemically produced viscose (Patel, 2024; Chaowana & Barbu, 2019). Sapovadia (2023) further emphasises bamboo's role in circular economy strategies, including biodegradable products and bioenergy from residues. Nevertheless, inadequate industrial scaling and lack of standardised quality control hinder bamboo's integration into mainstream markets (Manandhar et al., 2019; Nath et al., 2020).

2.4. Socio-Economic Contributions and Livelihoods

Bamboo remains integral to the subsistence and economic systems of millions of rural households, particularly in Asia's tribal and forest-dependent communities (Wu et al., 2015; Farrelly, 1984). Studies in North-East India highlight bamboo's multiple functions: construction, food, handicrafts, but also reveal limitations such as irregular raw material flows, low-margin artisanal production, and limited capital access (Singnar et al., 2021; Patel, 2024). Gendered dimensions are equally important. Women dominate weaving and craft production, but benefit capture is constrained by unequal access to finance and markets (Gupta et al., 2018; Patel, 2024). Institutional interventions such as cooperatives, community forest enterprises, and common facility centres have been suggested as mechanisms to strengthen bargaining power, enhance product quality, and expand incomes (Xu et al., 2024; Nath et al., 2020). However, few impact evaluations exist to demonstrate sustained

improvements in household welfare (Dwivedi et al., 2019).

2.5. Governance, Value Chains, and Policy Dimensions

Despite widespread recognition of bamboo's potential, policy and governance barriers remain significant. Production data are inconsistent, with few species-specific yield tables or standardised productivity assessments (Liese & Köhl, 2015; Wu et al., 2015). Spatial mismatches between bamboo resource bases and industrial hubs inflate logistics costs and weaken profitability (Xu et al., 2024; Bal et al., 2012). Scholars highlight the need for policy innovations such as grading standards, concessional financing, and carbon credit integration to align bamboo with national climate and industrial policies (Rao et al., 2019; Sapovadia, 2023). Experiences from China suggest that integrated policy frameworks combining forest management with market incentives can rapidly expand both ecological and economic benefits (Du et al., 2018; Qi et al., 2022). For India, replicating such frameworks remains a challenge, as fragmented governance and uneven state-level strategies limit sectoral growth (Kumar et al., 2020; Nath et al., 2020).

2.6. Monitoring, Data Systems, and Research Need

Across all studies, the inadequacy of robust monitoring frameworks is a recurring theme. While global bamboo cover is extensive, national-level productivity and disturbance data remain sparse (Wu et al., 2015; FAO, 2007). Advances in remote sensing and machine learning show potential for large-scale AGB mapping and sustainable harvest planning (Xu et al., 2024; Feng et al., 2023). Yet, methodological inconsistencies, lack of standardised yield tables, and weak MRV frameworks for ex-situ carbon in products prevent bamboo from being fully integrated into climate finance and policy mechanisms (Gu et al., 2019; Pan et al., 2023). Scholars argue for harmonised accounting protocols, standardised LCA methodologies, and integration of community-level data to enable evidence-based policy and sustainable management (Ge et al., 2018; Liu et al., 2019).

3. Research Gaps

Although bamboo has been widely studied for its ecological, economic, and livelihood benefits, significant gaps remain in the Indian context. Current research lacks standardised, species-specific yield tables and large-scale monitoring frameworks, limiting accurate estimates of productivity and sustainable harvest levels. While life cycle assessments show that bamboo products can deliver carbon-negative outcomes, harmonised MRV systems for ex-situ carbon accounting are still absent, restricting integration into carbon markets. Moreover, despite evidence of bamboo's livelihood importance, rigorous evaluations of interventions such as training, cooperatives, and common facility centres remain scarce, leaving questions about long-term socio-economic impacts unanswered. Finally, fragmented governance and underdeveloped industrial value chains constrain India's ability to scale bamboo for global competitiveness, underscoring the need for integrated research that links ecological monitoring, socio-economic outcomes, and policy innovation.

Despite extensive literature on bamboo, several knowledge gaps persist:

- i. **Productivity Metrics:** While area and biomass data are increasingly available, India lacks standardised, species-specific yield tables calibrated by age classes and ecological zones.
- ii. **Spatial-Temporal Monitoring:** Remote sensing applications remain limited to case studies; scalable frameworks for disturbance, mortality, and sustainable harvest planning are underdeveloped.
- iii. **Ex-situ Carbon Accounting:** Although LCAs demonstrate climate benefits of bamboo products, harmonized MRV systems for product carbon storage and substitution remain absent.
- iv. **Livelihood Impact Evaluations:** While bamboo's role in household incomes is recognized, rigorous empirical evaluations of interventions such as common facility centres, training, and cooperatives are scarce.
- v. **Policy and Governance:** Fragmented policies, limited financing access, and weak institutional frameworks hinder sectoral growth. Comparative lessons from China and Southeast Asia are yet to be systematically adapted to India.
- vi. **Industrial Scaling:** Product diversification

into textiles, composites, and biodegradable goods is well-documented, but India lacks integrated value chains and quality standards necessary for global competitiveness.

4. Objectives

The study aims to analyse trends, patterns and regional distribution of bamboo production in India using secondary data. Key objectives of the study are:

- i. To examine trends in bamboo resources from 2021 to 2023, focusing on area and regional distribution.
- ii. To analyse regional disparities in bamboo availability and growth across states and ecological zones.
- iii. To propose actionable policy suggestions to boost bamboo production in India.

5. Methodology

This study is based on secondary data analysis, drawing mainly from the *India State of Forest Reports* (ISFR 2021 and 2023) and government records related to the National Bamboo Mission (NBM) and allied initiatives. The ISFR provides data on bamboo-bearing area, culm stock, and carbon estimates, which are analysed to identify temporal trends and regional variations in bamboo resources. These ecological indicators are complemented by policy and program documents from the NBM, which offer information on funding allocations, cultivation projects, value addition, and market development efforts aimed at strengthening the bamboo sector. The analysis combines trend assessment and regional comparison of ISFR statistics with content analysis of NBM documents to evaluate program design, implementation, and achievements. Findings from these sources are further interpreted with the support of existing scholarly literature to explore linkages between ecological outcomes, livelihood opportunities, and policy frameworks. While the study does not incorporate primary household-level data, its reliance on national reports and government records allows for a comprehensive macro-level perspective on bamboo production, distribution, and its role in sustainable development.

6. Findings

Table 1: State/UT-wise Bamboo area statistics

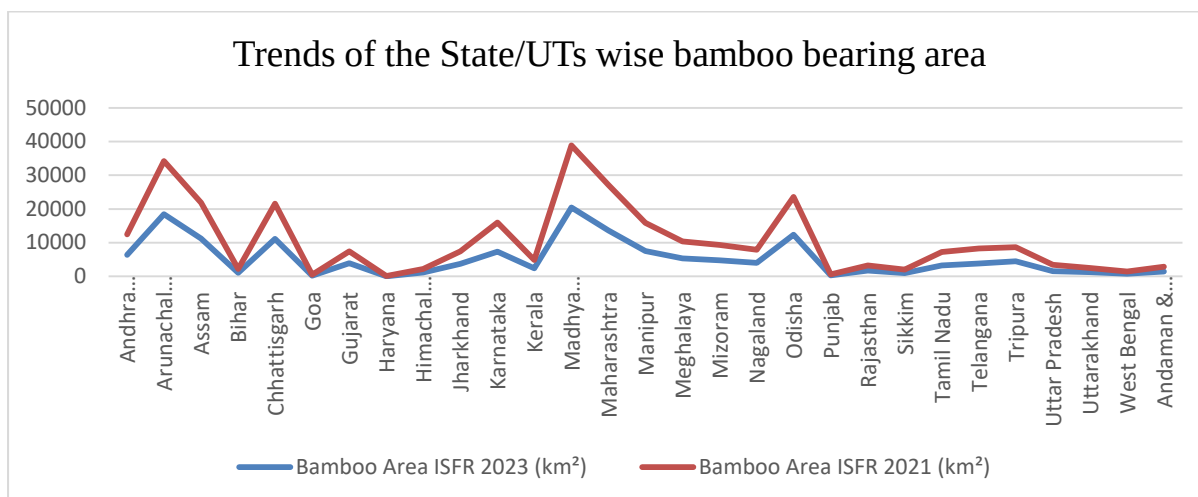
Sl. No.	State/UT	Bamboo Area ISFR 2023 (km ²)	Bamboo Area ISFR 2021 (km ²)	Change in Area (km ²)	% Change
1	Andhra Pradesh	6370	6104	266	4.36
2	Arunachal Pradesh	18424	15739	2685	17.06
3	Assam	11246	10659	587	5.51
4	Bihar	1109	1103	6	0.54
5	Chhattisgarh	11139	10467	672	6.42
6	Goa	235	288	-53	-18.4
7	Gujarat	3895	3547	348	9.81
8	Haryana	42	39	3	7.69
9	Himachal Pradesh	1154	1027	127	12.37
10	Jharkhand	3746	3717	29	0.78
11	Karnataka	7334	8624	-1290	-14.96
12	Kerala	2443	2404	39	1.62
13	Madhya Pradesh	20421	18394	2027	11.02
14	Maharashtra	13572	13526	46	0.34
15	Manipur	7517	8377	-860	-10.27
16	Meghalaya	5347	5007	340	6.79
17	Mizoram	4772	4561	211	4.63
18	Nagaland	3980	3947	33	0.84
19	Odisha	12328	11199	1129	10.08
20	Punjab	311	280	31	11.07
21	Rajasthan	1706	1555	151	9.71
22	Sikkim	1010	994	16	1.61
23	Tamil Nadu	3217	4001	-784	-19.6
24	Telangana	3801	4535	-734	-16.19
25	Tripura	4466	4201	265	6.31
26	Uttar Pradesh	1598	1832	-234	-12.77
27	Uttarakhand	1307	1201	106	8.83
28	West Bengal	754	702	52	7.41
29	Andaman & Nicobar Islands	1426	1413	13	0.92
Total		154670	149443	5227	3.5

Source: ISFR 2021, 2023

This table lists the bamboo-bearing area for each Indian State and Union Territory as reported in ISFR 2023 and ISFR 2021. It includes the absolute bamboo area figures (in km²) for both reporting years, along with the calculated change in area and the corresponding percentage change over the two

years. Each State/UT is assigned a serial number, and a total row is provided to summarise the national-level bamboo-bearing area and overall change.

Figure 1: Trends of Bamboo bearing areas in States/UTs

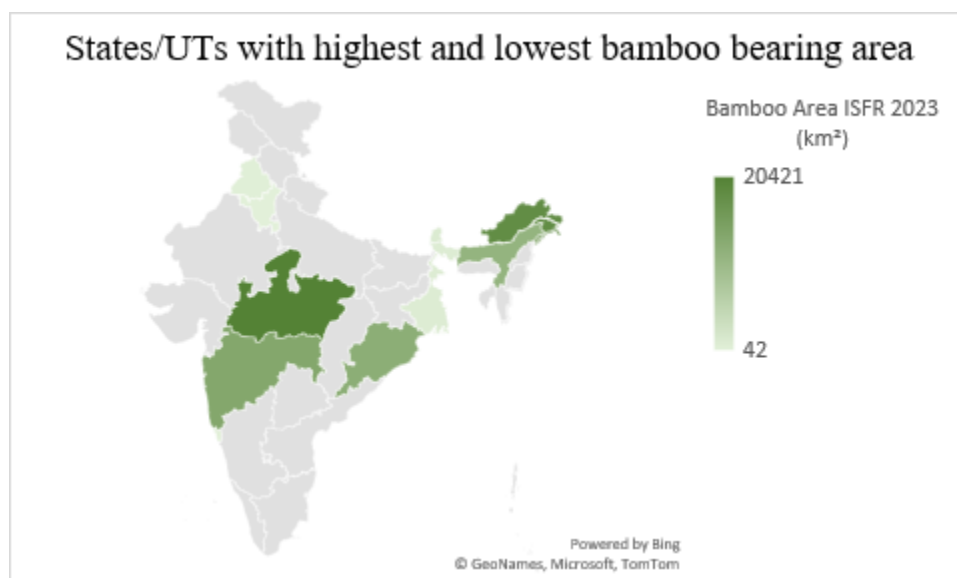


Source: ISFR 2021, 2023

The graph comparing bamboo-bearing areas across Indian States and UTs for ISFR 2021 and ISFR 2023 shows a clear nationwide decline, with the 2023 values consistently lower than those of 2021. Major bamboo-rich states such as Arunachal Pradesh, Madhya Pradesh, Assam, Maharashtra, and Odisha exhibit the steepest reductions, though they continue to dominate national bamboo resources. The North-Eastern region, including Mizoram, Manipur, Meghalaya, Nagaland, and Tripura,

remains a strong bamboo belt despite moderate declines. Mid-range states like Chhattisgarh, Karnataka, Jharkhand, Kerala, and Uttarakhand show smaller reductions, while states such as Punjab, Haryana, Goa, Delhi, Sikkim, and Rajasthan maintain very low bamboo coverage in both years. Overall, the graph highlights striking geographical contrasts, with some states exceeding 30,000 km² of bamboo area while others remain below 1,000 km².

Figure 2: Highest and lowest Bamboo bearing area among States/UTs

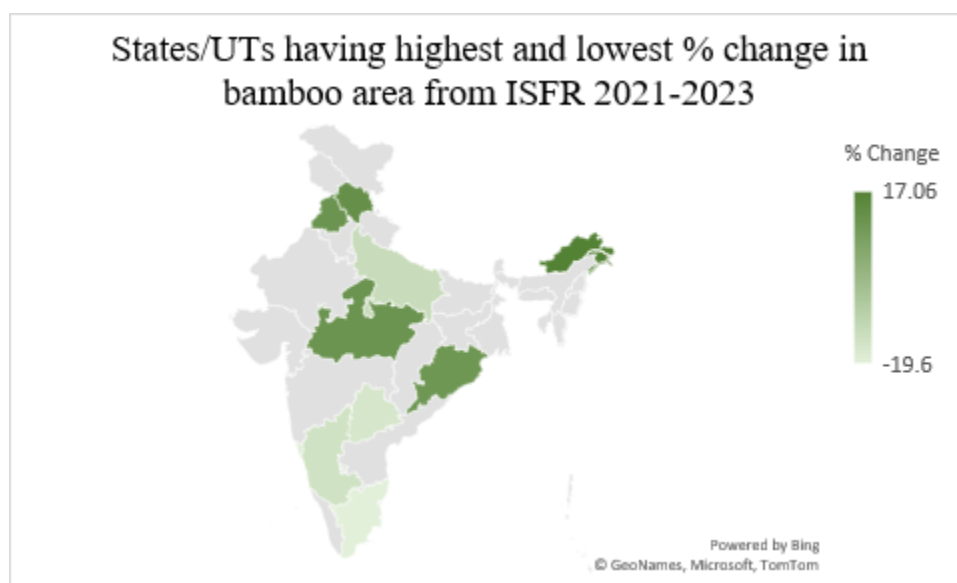


Source: ISFR 2021, 2023

The map illustrates the states and UTs with the highest and lowest bamboo-bearing areas in India according to ISFR 2023. Darker green shades represent states with larger bamboo-bearing areas, while lighter shades indicate states with very low bamboo presence. The highest values reach around 20,421 km², while the lowest are close to 42 km². From the map, it is clear that **North-Eastern states** (such as Arunachal Pradesh, Mizoram, and Manipur)

and **central Indian states** (notably Madhya Pradesh, Maharashtra, and Chhattisgarh) hold the **largest bamboo resources**. In contrast, many **northern, western, and southern states** show very minimal bamboo coverage, reflected by the lightest shades. Overall, the map highlights the strong geographical concentration of bamboo in the North-East and central India, while large parts of the country have very limited bamboo-bearing areas.

Figure 3: Highest and lowest % change in Bamboo area among States/UTs



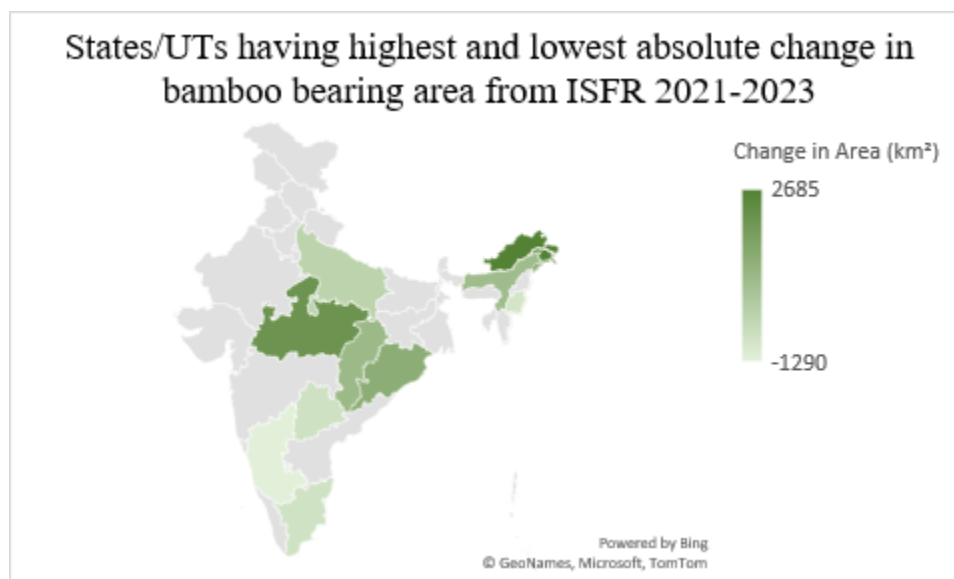
Source: ISFR 2021, 2023

This map shows the percentage change in bamboo-bearing area across Indian States and UTs between ISFR 2021 and ISFR 2023. States shaded in darker green experienced the highest positive growth, with increases up to around 17%, while states shaded in lighter or very pale green saw either small increases, negligible change, or even declines, going as low as 19.6%.

From the visual distribution, a few states in the North-East and parts of central India show

positive growth in bamboo area, indicating successful regeneration or improved reporting. In contrast, several states across north, west, and southern India reflect declines, aligning with broader national patterns of bamboo reduction noted in recent forest assessments. Overall, the map highlights that while bamboo resources have grown in select regions, many states have experienced substantial reductions over the two-year period.

Figure 4: Highest and lowest absolute change in Bamboo bearing areas among States/UTs



Source: ISFR 2021, 2023

This map shows the percentage change in bamboo-bearing area across Indian States and UTs between ISFR 2021 and ISFR 2023. States shaded in darker green experienced the highest positive growth reaching increases of up to about 17% while states shown in lighter or very pale green recorded only marginal increases, negligible change, or even significant declines, with reductions going down to nearly 19.6%. From the overall spatial pattern, several states in the North-East and parts of central India display noticeable positive growth in bamboo-bearing area, suggesting effective regeneration, improved management, or enhanced reporting mechanisms. In contrast, many states across northern, western, and southern India show declines, reflecting the broader national trend of decreasing bamboo resources highlighted in recent forest assessments. Collectively, the map underscores that while some regions have made gains, a substantial number of states have seen marked reductions in bamboo-bearing area over the two years.

7. Conclusion

The comparison of bamboo-bearing areas between ISFR 2021 and ISFR 2023 shows considerable variation across Indian States and Union Territories. While several states, particularly in the North-East, central India, and parts of the east, recorded notable increases in

bamboo area, others experienced substantial declines, most prominently in southern and some western states. The overall national gain of 5,227 km² (3.5%) indicates modest progress but also highlights uneven regional performance. These differences suggest that bamboo resource dynamics are strongly influenced by local ecological conditions, management practices, and land-use pressures.

8. Policy Suggestions

1. **Strengthen State-Specific Bamboo Management Plans-** Develop tailored strategies for states with declining bamboo cover, such as Tamil Nadu, Telangana, Karnataka, and Manipur, to address drivers like land conversion, overharvesting, or inadequate regeneration.
2. **Promote Large-Scale Bamboo Restoration in Depleted Regions-** Launch targeted restoration programs, including assisted natural regeneration and plantation efforts, especially in states showing double-digit declines.
3. **Enhance Monitoring, GIS Mapping, and Data Quality-** Improve ground-based surveys and remote sensing systems to reduce discrepancies across assessments, ensuring better tracking of bamboo resource changes.

4. **Support Community-Based Bamboo Resource Management-** Encourage Joint Forest Management Committees (JFMCs), tribal communities, and local cooperatives to participate in bamboo cultivation, harvesting, and sustainable use.
5. **Expand Incentives under the National Bamboo Mission (NBM)-** Provide financial support, seedlings, and technical guidance to farmers and forest-dependent communities, especially in states with low or stagnant bamboo cover.
6. **Strengthen Value Chain and Market Linkages-** Develop processing units, storage, transportation networks, and market infrastructure so that bamboo cultivation becomes economically attractive and reduces pressure on natural bamboo stands.
7. **Promote Climate Resilient Bamboo Species and Adaptive Practices-** Encourage research and adoption of species suited to local climatic conditions, particularly in regions experiencing degradation due to drought or changing rainfall patterns.
8. **Integrate Bamboo into Agroforestry and Land Restoration Initiatives-** Position bamboo as a key species in degraded land rehabilitation, watershed projects, and climate mitigation efforts due to its rapid growth and carbon sequestration potential.

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FROM GRANARY TO GROWTH HUB: LIVELIHOOD DIVERSIFICATION AND STRUCTURAL TRANSFORMATION IN RURAL HARYANA

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Abstract

Haryana, long celebrated as the “Granary of India,” has been a cornerstone of the Green Revolution, contributing significantly to national food security. However, ecological degradation, dwindling groundwater levels, climate variability, and declining agricultural profitability have put growing pressure on the sustainability of this agrarian achievement. This study looks at rural Haryana's continuous structural change, which is characterized by a slow transition from monocrop agriculture to diversified livelihood options that include on-farm diversification, related agricultural activities, and non-farm rural businesses. According to the report, ecological stress, proximity to the National Capital Region (NCR), supporting governmental policies, and infrastructure development are important drivers of diversification. It also assesses the socioeconomic effects of diversification on household resilience, job creation, nutritional diversity, and income stability. Although diversification has improved rural livelihoods, its potential is nevertheless limited by enduring issues like gender inequality, financial limitations, technology impediments, and infrastructure deficits. In order to guarantee sustainable rural development in Haryana, the paper's conclusion highlights the necessity of value-chain integration, institutional support, and equitable policy frameworks.

Keywords: Livelihood Diversification, Rural Transformation, Haryana, Green Revolution, Allied Activities, Non-Farm Employment.

1. Introduction

In recent times, rural livelihood diversification has gained much attention from various researchers and policy makers in developing countries for its significant role in reducing vulnerability and poverty. In the course of changing economic development, the economic activities have expanded much beyond agricultural and its allied activities, particularly in rural areas (Bora & Mahanta, 2024). Diversification can be defined as activities undertaken by household members in order to improve their social status and standard of living. Diversification can also refer to the attempts undertaken by an individual or a household to find new ways of survival to raise income and endure shocks such as disasters and disease outbreaks (Mphande, 2016). Rural economy is defined by the predominance of

agricultural activities. That is to say, agriculture and allied activities are the mainstay of the people living in rural areas. Apart from agriculture, in the rural economy manufacturing and services are also prevalent to some extent. For analytical convenience, manufacturing and services are clubbed together to form the non-farm economy. So, the rural economy comprises of two sub-sectors, farm sector and non-farm sector. Farm activities include agriculture (crop production), plantation, animal husbandry (milk, meat, egg etc), forestry & logging and fishing, whereas the non-farm sector includes all other activities like agro-processing industries, wholesale and retail trading, storage and communication, transport and education, health industries and other service-related activities. Over the time economy moves and tends to be transformed.

Transformation means movement / transition of the economy from one stage to another stage of development. The well-known pattern of transformation that has been experienced by the countries at different stages of development is the movement from agriculture (farm) to manufacturing and then to service (Pal & Biswas, 2011).

Now, rural Haryana is faced with a dilemma. Agricultural output is still high, but farm earnings are becoming more erratic. Groundwater depletion, an imbalance in soil nutrients, and increased input costs are the results of continuous wheat-paddy production. Temperature extremes and unpredictable rainfall are two other ways that climate change has increased production hazards. In these conditions, rural livelihoods can no longer be sustained by agriculture alone. As a result, livelihood diversification has become an essential survival and expansion tactic. It entails diversifying revenue streams beyond conventional crop farming to include horticulture, dairy, fisheries, agro-processing, and non-farm jobs. In order to evaluate livelihood diversification's contribution to resilient and sustainable rural development, this research will examine its nature, causes, and consequences in rural Haryana.

2. Conceptual Framework: Livelihood Diversification

Livelihood diversification refers to the process by which rural households construct a diverse portfolio of activities and assets to improve living standards and manage risks. According to Ellis (2000), diversification can be driven by both push factors—such as poverty, land scarcity, and ecological stress—and pull factors—such as market opportunities, infrastructure, and higher returns from non-farm activities. Diversification in Haryana is a result of both factors working together. Farmers are drawn to high-value agriculture and non-farm jobs by being close to metropolitan markets and industrial corridors, while ecological deterioration drives them away from water-intensive crops. In this regard, diversification refers to a more comprehensive structural change of the rural economy rather than just an economic adjustment. Livelihood diversification has a positive and significant

impact on household poverty and economic resilience (Abebe et al. 2021). The study concludes to ensure the capacity of rural households to practice farming along with a wide range of income-generating activities, participating in livelihood diversification should be given emphasis in development planning to improve the well-being of the rural poor and have a significant impact on poverty reduction. The study of (Loison, 2015) also indicates evolution and nature of rural livelihood diversification in Sub-Saharan Africa, highlighting its implications for smallholders. It synthesizes various empirical studies, revealing that while livelihood diversification is often seen as a pathway to poverty reduction and economic growth, its benefits are not uniformly distributed. The study of (Danso-Abbeam et al. 2020) also focuses on income diversification among smallholder farmers in Ghana, discussing how diversification can help mitigate risks, combat poverty, and boost welfare. The study finds a significant positive impact of income diversification on household consumption expenditure, income, and the likelihood of adopting Zai technology. (Peng et al. 2022) focuses on the relationship between livelihood diversification and household well-being. It develops a theoretical framework to explain the potential limits of diversification as a household poverty reduction strategy. The findings are that diversification is associated with improvements in SHWB for households with low and medium levels of well-being, but at higher levels of SHWB, education and income have much greater influence.

2.1 Factors Effecting Farm and Non-Farm Activities

2.1.1 Economic factors

The study focuses on agricultural diversification and discusses how diversification is a shift of resources from monoculture to a larger mix of crops, livestock, and other non-farm activities. This process is driven by factors like changing consumption patterns, rising incomes, and urbanization, which are increasing the demand for high-value commodities like fruits, vegetables, dairy, and meat (Deogharia, 2018). The study of (Chmieliński et al. 2023) also focuses on the

factors influencing the diversification of income sources in family farms in Poland. It uses panel data on 3,754 individual farms from 2009-2016 to analyse the livelihood strategies of farming families, focusing on the relationship between the economic size of the farm and the importance of non-agricultural income sources. The study suggests the need for policy tools that can support the development of the agricultural sector while also encouraging income diversification, particularly for smaller farms. The study of (Jabbar et al. 2023) highlights that non-farm income diversification is a vital livelihood strategy that endorses sustainable agriculture and alleviates poverty. Multiple studies have reported the significant effect of income diversification on farm production, labor hiring, procurement of farm inputs, and households' food security. However, there are also conflicting findings on the relationship between non-farm participation and farm-level investment, suggesting the need to further investigate this in the local context. The findings indicate that only limited literature discusses the role of non-farm income in adopting soil and water conservation (SWC) practices and household poverty in Pakistan. The study of (Qi et al. 2024) focused on measuring poverty vulnerability and its influencing factors, noting that most previous research used outdated data and narrow poverty thresholds, while overlooking the role of digital skills as a new form of human capital. The gap identified was the lack of exploration into how digital skills, as a form of new human capital in the digital economy, affect household poverty vulnerability. The implications of this research include the need for targeted policies to enhance digital skills among low-income farmers and the importance of digital infrastructure investment in rural areas. Key findings revealed that enhancing digital skills significantly reduced households' vulnerability to poverty, with a more pronounced impact among low-income households. Additionally, social digital skills were found to have the strongest effect in reducing poverty vulnerability, and the study demonstrated that improved digital skills strengthened social capital, which in turn reduced the risk of poverty reversion.

2.2.2 Socio- Economic Factors

The significance of livelihood diversification in rural economies, where households are heavily reliant on rain-fed agriculture. It discusses various factors influencing diversification, such as socioeconomic characteristics, access to resources, and institutional support (Sherifa,

2021). The findings reveal that male-headed households, landholding size, cooperative membership, and participation in rural safety net programs positively influence agricultural livelihood strategies, while distance to market negatively impacts these choices, underscoring the complex interplay of socioeconomic factors in livelihood diversification decisions. The study of (Salvioni et al. 2020) also focuses on non-agricultural diversification by farms. Findings indicates that a significant body of research has explored the factors that drive the adoption and intensity of diversification activities, such as sociolect-demographic, economic, and geographical characteristics of farms and farm households. However, the study states that little attention has been given to the impact of diversification on the technical efficiency, economic viability, and financial performance of farms. The findings indicate that there is a need for more research on the economic and financial impacts of non-agricultural diversification at the farm level, which is the focus of the current study. (Neglo et al. 2021) study also focuses importance of non-farm activities for reducing poverty and food insecurity in rural Ethiopia, as well as the key constraints faced by households in engaging in such activities. The findings indicate that factors such as gender, age, family size, literacy, health status, livestock ownership, crop production, access to credit, and participation in cooperatives and extension services influence household engagement in non-farm activities. Additionally, the results show that participation in non-farm activities has a positive effect on household income.

2.2.3 Demographic Factors

The study emphasizes the significance of understanding the determinants of rural households' livelihood diversification strategies, particularly in the context of developing countries (Kassegn & Abdinasir, 2023). Highlights of this study is various socioeconomic, demographic, and institutional factors that influence households' decisions to engage in different livelihood activities, including agricultural, non-farm, and off-farm pursuits. Previous studies have shown that factors such as total income, cooperative membership, access to credit, and remittances play crucial roles in shaping these decisions.

The findings also discuss the importance of community programs, such as rural productive safety net programs, in enhancing agricultural participation while noting their negative impact on non-farm activities. Overall, the study underscores the complexity of livelihood diversification and the need for targeted interventions to support rural households in building sustainable and profitable strategies. (Bora & Mahanta, 2024) aims to systematically review the nature and extent of rural livelihood diversification among tribal communities in the North-Eastern Region (NER) of India, focusing on the transition from traditional agricultural practices to diversified income sources due to low agricultural productivity and population pressure. The gap identified is the limited understanding of the specific factors influencing livelihood diversification among these communities compared to other regions in India. Practical implications include the need for targeted government interventions and private investments to enhance infrastructure and industrial development, which could facilitate better income sources for these communities. The findings reveal that while there is a shift towards multiple occupations, agriculture remains a primary livelihood source, and the potential for industrialization exists, albeit hindered by geographical isolation and underdeveloped infrastructure.

3. Drivers of Livelihood Diversification in Rural Haryana

3.1 Ecological and Environmental Stress

Ecological necessity is one of the major forces behind diversification in Haryana. Alarming groundwater depletion has resulted from an over reliance on the wheat-paddy cycle, especially in central and eastern regions like Karnal, Kurukshetra, and Kaithal. Long-term productivity has decreased as a result of the misuse of chemical pesticides and fertilizers, which has damaged soil health. Farmers have been forced by these environmental limitations to look into less resource-intensive alternative crops and livelihood activities.

3.2 Proximity to the National Capital Region (NCR)

Haryana's geographical proximity to Delhi and the NCR has created strong market linkages for agricultural and non-agricultural products.

Urban demand for fresh vegetables, fruits, flowers, milk, and processed food has encouraged farmers to shift toward horticulture, floriculture, and dairy farming. Additionally, NCR-driven urbanization has expanded employment opportunities in construction, transport, services, and small manufacturing for rural households.

3.3 Policy Interventions and Government Support

The government of Haryana has implemented a number of initiatives to encourage diversification. By providing financial incentives for alternate crops, programs like Mera Pani Meri Virasat seek to decrease the production of paddy. Support for MSMEs, dairy development, and horticultural missions has made diversification even easier. These policy changes are a reflection of the rising understanding that structural change is necessary for agricultural sustainability.

3.4 Infrastructure and Industrial Development

Infrastructure development has reduced transaction costs and increased market participation. Examples of this include better road connectivity, rural electricity, and digital access. Particularly for young people living in rural areas, the Delhi–Mumbai Industrial Corridor (DMIC), which passes through Haryana, has stimulated industrial growth and non-farm jobs. Thus, improved infrastructure has reinforced routes for both farm and non-farm diversification.

4. Dimensions of Livelihood Diversification

Livelihood diversification in Haryana can be divided into three interconnected categories: non-farm employment, allied agricultural activities, and on-farm diversification.

4.1 On-Farm Diversification

On-farm diversification entails switching from conventional cereal crops to high-value, resource-efficient substitutes. Growing numbers of farmers are embracing organic farming, floriculture, mushroom cultivation, and horticulture (fruits and vegetables). Compared to paddy, crops including kinnow,

guava, tomato, and capsicum provide higher returns per acre and use less water. Farm profitability is greatly increased by these operations, even if they call for more technical expertise and market connections.

4.2 Allied Agricultural Activities

Allied activities play a crucial role in stabilizing rural incomes. Dairy farming, particularly with high-yielding Murrah buffaloes, has become a major source of regular cash income. Goat rearing, fishing, poultry, and beekeeping all help to diversify sources of income and lessen the risk of crop failure. These activities are particularly crucial for households without land and small and marginal farmers.

4.3 Non-Farm Employment and Enterprises

Agro-processing facilities, rural tourism, transportation services, retail commerce, and small manufacturing businesses are examples of non-farm diversification. In addition to creating year-round jobs and absorbing excess labour, these activities lessen reliance on agriculture. Higher income potential and social mobility are provided by non-farm jobs for young people in rural areas, which helps to gradually change rural society.

5. Socio-Economic Impacts of Diversification

5.1 Income Stability and Risk Reduction

Diversification reduces income volatility by spreading risk across multiple activities. Dairy, horticultural, and non-farm business households are more resilient to crop failures and price swings. Research shows that Haryana's diverse households had higher average earnings and more stable spending.

5.2 Employment Generation

Livelihood diversification has contributed to employment generation, particularly for women and youth. Women are essential to the dairy industry and related fields, yet men are more likely to work in non-farm occupations. Thus, diversification lowers seasonal unemployment and improves labour absorption.

5.3 Nutritional and Dietary Improvements

Diversified livelihoods are associated with improved dietary diversity. Food security and household nutrition are improved by increased production and consumption of fruits, vegetables, milk, and animal products. Higher Dietary Diversity Scores (DDS) among diverse rural households are indicative of this.

6. Constraints and Challenges

Livelihood diversification in Haryana has a number of drawbacks despite its advantages: **Deficits in Infrastructure:** The profitability of perishable items is restricted by inadequate cold storage, processing facilities, and well-organized marketing channels. **Technological and Knowledge Gaps:** Training in high-tech agriculture, such hydroponics and polyhouses, is sometimes unavailable to small and marginal farmers.

Financial Barriers: Adoption is discouraged by high initial investment needs and complicated credit and subsidy application processes. **Gender Inequality:** Women's access to resources, credit, and training is still a barrier to their involvement in non-farm entrepreneurship.

7. Discussion

Rural Haryana's transition is an example of the dynamic interplay between opportunity-led expansion and necessity-driven adaptation. In response to ecological stress, diversification has become a sensible strategy that simultaneously takes advantage of market integration and urbanization. However, enhancing institutional backing, market connections, and value-chain integration are just as important to the success of diversification as activity expansion. Without them, diversity runs the risk of becoming uneven and fragmented.

8. Conclusion

A diversified livelihood system is replacing the agriculture-dominated economy in rural Haryana, which is going through a major structural transition. While lessening the ecological strain on natural resources, livelihood diversification has improved household resilience, employment prospects, and income stability. However, policy initiatives must concentrate on financial

inclusion, skill development, infrastructural development, and gender-sensitive interventions in order to maintain this shift. In order to achieve inclusive and sustainable rural development in Haryana, farmers must be integrated into value chains as producers, processors, and marketers.

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CLIMATE CHANGE IMPACT ON AGRICULTURE: THE ROLE OF EDUCATION IN PROMOTING SUSTAINABLE ADAPTATIONS IN BANKURA: SYSTEMATIC REVIEW

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Abstract

Climate change (CC) has emerged as a major issue affecting agriculture, posing an important menace to both subsistence and the economy of any community. This study focuses on the impact of CC on the agricultural sector in Bankura district, West Bengal (WB), India, and identifies sustainable adaptation strategies to mitigate these effects. A systematic review approach has been employed to explore long-term adaptation strategies to climate-related challenges. The primary objectives of this research are to assess the impacts of CC on agriculture and to identify sustainable adaptation measures. The study evaluates the effects of spatial and temporal variations in climatic parameters such as temperature and rainfall on crop yield and agricultural productivity. The research adopts a secondary data analysis method. Findings indicate that rising temperatures and irregular rainfall patterns have led to reduced crop yields and decreased water availability. The study identifies several sustainable adaptation strategies that can assist farmers in coping with these challenges. Insights from the systematic review of existing literature reveal that farmer education, water management, systematic agricultural practices, sustainable farming techniques, agroforestry, mixed farming systems, land management practices, and crop diversification can play key roles in mitigating the impacts of climate change. This paper offers an extensive analysis of the impacts of climate change on agriculture and underscores successful adaptation measures to bolster the resilience and welfare of rural people.

Keywords: Agriculture, Bankura, Climate change, Sustainable adaptations

Introduction

Climate change (CC) is a global challenge that has significant impacts on all sectors, including agriculture (Alley et al., 2007). CC is affecting conditions for crop production, livestock management, and agricultural systems in general, with rising temperatures, changing rainfall patterns, and increasing frequency of extreme weather events (Kamle et al., 2019). These changes pose substantial challenges to agricultural productivity, food security, and the livelihoods of millions of people, particularly in vulnerable regions. Bankura district, located in the state of WB, India, is one such region where agriculture plays a crucial role in the local

economy and food security (Agricultural Statistics at a Glance, 2020). The district is predominantly rainfed, which means that the impacts of climate change on agriculture are particularly severe. Variations in temperature and rainfall patterns, along with the increasing frequency of droughts and floods, can have devastating effects on crop yields, farmers' incomes, and food availability (De & Pal, 2019). A systematic review allows for the spatial analysis of climate data, crop production, and other relevant variables, providing valuable insights into the complex interrelationship between climate, agriculture, and geography. The primary objective of this study is to examine the impact of climate

change on agriculture in Bankura district and to conduct a systematic review of sustainable adaptation strategies that can help mitigate these impacts through education and knowledge dissemination. The aim of this study is to provide a comprehensive understanding of the challenges that climate change presents to the agriculture in Bankura district and the adaptation measures that will help agricultural systems in the district to become more resilient and to identify effective adaptation measures that can enhance the flexibility and sustainability of agricultural process in the region.

Review of Related Literature

Abbass et al. (2022) the paper emphasizes that the world climate changes influences and sustainable mitigation options. The objective of the study was how climate variability is deteriorating the sustainability of diverse sectors worldwide. The researcher was used Systematic review methods in this study. The data was collected by Web of Science and Google Scholars referenced articles. The qualitative data was then refined and analysed by using Systematic review. Independent Accountability of the past resources and regulations would be essential for government in order to bring the country back on a sustainable track through state-of-the-art climate policy for long-term development.

Sinore and Wang (2024) The objective of the study was effects on different areas, adaptive strategies and problems associated with climate change in Ethiopia. The researcher was used meta-analysis methods in this study. The data was collected by Web of Science, ScienceDirect and Google Scholars referenced articles. The analysis considered various adaptation measures to climate change. Key lesson the above findings highlight the need for comprehensive, integrated approaches to addressing challenges in Ethiopian communities including adaptation strategies that will assist the resilience of Ethiopian communities.

Rahman et al. (2018) The purpose of the study was effect so that to crop up and sustainable management strategies were recommended in utilization of resources and environment. The

researcher applied GIS-Based Analysis. The predictions for temperature and rainfall were based on historical data of 2011–2020. The research examined the decadal variation and agro- climatic patterns of temperature and precipitation in Bangladesh. The study found high climate vulnerability in Bangladesh and an urgent need for developing agriculture resilient to climate change.

Hembram and Mondal (2020) The article highlights that climatic environment of the Bankura district. The researcher was used secondary data for the period of 1901 to 2018 is collected from India Meteorological Department. The study analysed by using both mathematical and statistical techniques. The result of this study was decreasing trend of annual rainfall reduction of 12.03 mm/year.

De and Pal (2019) This paper examines the growth of agricultural productivity, crop diversity. The researcher was used panel data analysis method. The article also found that impact on the growth of productivity in the region. Quantitative data were analysed in this study. The researcher was used longitudinal data analysis. The finding of the study was significant weather dependence and lack of technological involvement in the agriculture.

Tadesse and Ahmed (2023) The objective of the study was to assess the climate smart agriculture practice. The article highlights that smart agriculture implemented in Ethiopia were agronomic practices. The researcher was used Systematic review methods in this study. The data was collected by Web of Science and Google Scholars referenced articles. This analysis was geographically confined to Ethiopia. The implication of the study should also encourage promotion of varied climate smart agriculture practice.

Research Objectives

1. To study the impact of CC on agriculture in Bankura district through a systematic review.
2. To conduct a comprehensive review of existing literature on sustainable adaptation strategies in agriculture and to identify effective measures for enhancing climate resilience in Bankura district.

Methodology

This study employs a systematic review of existing literature to assess the impact of climate change on the agricultural sector of Bankura district and to identify sustainable adaptation strategies. The information for this article was collected using a systematic literature review approach (Tranfild et al., 2021). The search procedure adopted for the study is illustrated in Figure 1. First, the research topic was identified to guide the literature review process (Cooper et al., 2018). Second, relevant articles were selected and data were gathered from databases such as Google Scholar, Web of Science, Scopus Index, Sage, Springer, Elsevier ScienceDirect, and other peer-reviewed sources. Keywords including climate change, agriculture, sustainable adaptation, and Bankura were used to identify and collect relevant studies.

Through keyword-based searches, multiple studies were retrieved, with greater emphasis placed on recent publications over older ones to ensure updated and relevant findings. In addition, data were also sourced from seminar papers, workshops, conference proceedings, debates, and published articles. Specific selection criteria were applied to ensure the relevance and quality of the reviewed literature. A total of 80 research papers were initially identified from various databases. However, after reviewing abstracts, objectives, methodologies, and titles, 32 papers were excluded as irrelevant, and 48 were selected as suitable for detailed analysis.

The key criterion for inclusion in the same was that studies had to cite climate change effect on agriculture in Bankura district and proposed sustainable adaptation options. This study, in summary, reviews comprehensively the influence of climate change on agriculture at Bankura and also intends to develop suitable sustainable baseline(ref:1) adaptation strategies. Study Area

The study area selected for this research is Bankura district, located in the state of West Bengal, India. Bankura lies between latitudes 22°38' and 23°38' N and longitudes 86°36' and 87°46' E, covering an area of approximately 6,882 square kilometres (Census of India,

2011). It is a predominantly agricultural district, where a large number of people are involved in agriculture and allied sectors (Directorate of Economics and Statistics, 2020). The agricultural system of the district is predominantly rainfed, making it highly vulnerable to climate-related shocks and stresses. Bankura experiences a tropical savanna climate characterized by hot summers and mild winters (Yadav et al., 2020). The district receives an average annual rainfall of about 1,400 mm, most of which occurs during the monsoon season (June to September) (Kamle et al., 2019). Bankura district is considered climate-vulnerable due to its dependence on rainfed agriculture, limited irrigation facilities, and exposure to extreme weather events such as droughts and floods (De & pal, 2019). Understanding the impacts of climate change on agriculture in Bankura is therefore essential for developing effective adaptation strategies and promoting sustainable agricultural practices in the region.

Data Collection

To gather information on sustainable adaptation strategies in Bankura district, a literature review covering the past ten years was conducted to examine whether the degradation of the agricultural sector caused by CC can be mitigated through sustainable adaptation measures. Across India, education has been found to play an indirect yet crucial role in promoting various strategies for sustainable adaptation. In this study, the researcher identified ten key adaptation strategies that are indirectly supported or promoted through education. These include farmer education, water management, behavioural change, systematic farming practices, sustainable agricultural techniques, agroforestry, livelihood diversification, mixed farming systems, land management practices, and government policies and regulations. Each of these strategies is directly or indirectly related to climate-focused sustainable adaptation measures in the context of Bankura district.

Results and Discussion

a. Impact of CC on agriculture

CC has raised as a major challenge for the agricultural sector in Bankura district, WB, India. Rising temperatures and irregular rainfall patterns are disrupting crop production, quality, and overall food security. A study published in the Journal of Agrometeorology reported that rice production in the district fluctuates significantly due to climatic factors such as temperature variability and inconsistent rainfall. The study further noted that these climatic changes are reducing crop productivity and adversely affecting farmers' livelihoods. Variations in weather patterns hinder crop growth and development, leading to lower yields and declining agricultural incomes—this poses a serious threat to food security and the local economy. Since agriculture in Bankura is predominantly rain-dependent, the district faces increasing risks from variable rainfall patterns and ultimate weather events such as droughts and floods. These factors can severely disrupt agricultural activities and worsen the economic conditions of farming communities. To mitigate the adverse impacts of CC on agriculture in this region, it is essential to implement climate-resilient strategies such as crop diversification, conservation-based farming practices, and integrated pest management. Moreover, promoting climate-tolerant crop varieties, improving irrigation infrastructure, and providing farmers with timely climate information can significantly

strengthen their capacity to adapt to and sustain agricultural productivity in a changing climate.

b. Sustainable adaptations strategies

CC has triggered a range of environmental transformations, disproportionately affecting vulnerable groups such as women, children, and marginalized communities in rural areas. The challenges arising from CC include increasing poverty, limiting human decision-making capacity, and hindering the achievement of SDGs (Tofu et al., 2023). In Bankura district, the impacts of CC on agriculture are increasingly complex & interconnected. CC continues to influence agricultural production, water availability, ecosystems, and overall human well-being (Alemayehu & Bewket, 2017).

Education is important for addressing these challenges through enabling the implementation of sustainable adaptation measures such as: water management, farmer education, systematic agricultural practices, sustainable farming techniques, agroforestry, multi-farming systems and land management practices. The primary objective of these sustainable adaptation strategies is to reduce the adverse impacts of CC in Bankura district while fostering a supportive social and ecological environment conducive to a healthy ecosystem (Sinore et al., 2020).

The sustainable adaptation strategies are as follows –

Table 1: Sustainable adaptation strategies

SL NO	Major adaptation strategies	Descriptions
1	Farmer education	Enhance their knowledge and skills
2	Water Management	Soil and water conservation
3	Change of habit	Improved sustainable agriculture systems
4	Systematic farming strategies	Agriculture and crop planning
5	Sustainable agriculture practices	Improved soil health & biodiversity
6	Agroforestry	Conserving forests
7	Livelihood diversification	Income-generating activities
8	Mixed farming systems	Application of improved crop varieties
9	Land management practice	Integrated soil fertility management practice
10	Government Policies and Regulations	Supportive government policies

Farmer Education

Farmers should be provided with adequate training to enhance their knowledge and skills. Through improved awareness and capacity building, they can adopt climate-resilient methods and new technologies to strengthen agricultural productive and sustainability.

Water Management

Water conservation plays an important role in protecting farmers from the risks of both droughts and floods. During periods of heavy rainfall, excess water can be effectively stored, and flood irrigation practices can be extended to ensure long-term water availability and management (Kamle et al., 2019).

Behavioural Change

Soil erosion can be prevented by improving conservation-based agricultural systems. This encourages sustainable farming and promotes the development of more advanced and resilient agricultural practices (Lal, 2004).

Systematic Agricultural Techniques

Modern systematic techniques are now being employed to enhance productivity in both agricultural planning and crop management (Altieri, 2002).

Sustainable Agricultural Practices

To maintain sustainability in agriculture, the use of organic and bio-based fertilizers should be encouraged. These practices help build fertile soil, improve soil health, and enhance biodiversity and ecosystem services (Gliessman, 2015).

Agroforestry

Agroforestry involves the integration of tree cultivation with farming practices to conserve forests, prevent soil erosion, and provide protection against extreme heat and drought. Forests act as a protective canopy for biodiversity, fostering ecological balance and resilience (Nair, 2011).

Livelihood Diversification

Farmers should diversify their livelihoods to reduce dependence on agriculture alone, enabling participation in non-farm activities. Developing multiple sources of income—such as livestock rearing, leaf plate making, or honey

collection—can strengthen resilience and improve economic stability (Ellis, 2000).

Mixed Farming Systems

The introduction of mixed farming systems not only enhances agricultural productivity but also contributes to overall agricultural and rural development. For instance, integrating livestock with crop production can promote environmental harmony and resource efficiency (Ruthenberg, 1980).

Land Management Practices

To minimize land degradation and maintain healthy soil, conservation tillage and contouring are also key sustainable land management practices (Montgomery, 2007).

Government Policies and Regulations

Supportive government policies are crucial for implementing sustainable adaptation strategies. These include providing incentives, subsidies, and access to climate information services. Effective policy interventions can significantly mitigate the adverse impacts of CC on agriculture.

Conclusion

Significant impacts of CC have been observed on agricultural fields and related sectors in Bankura district. The study highlights the necessity of sustainable adaptation strategies to enhance resilience and implement sustainable development. Education in this research encompasses farmer training, water management, agroforestry, livelihoods, livelihood diversification, and multiple adaptation strategies, which were analysed through a systematic review of existing literature (Kumar et al., 2019). Emphasizing the promotion of sustainable agricultural practices, agricultural development policies and climate change programs aim to increase resilience and reduce vulnerability (Gliessman, 2015). The study suggests that existing adaptiveness of various parts off Bankura can reduce the impacts of CC. However, these strategies face various social, cultural, psychological, economic, institutional, and policy-related barriers (Sinore & Wang, 2020). Currently, modern life is structured according to climatic

patterns, and it is therefore essential to align practices accordingly. From the grassroots to the international level, sustained attention and research are required to maintain adaptive capacity and provide effective adaptation in the face of rapid CC (Howlett & Ramesh, 2003).

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IMPACT OF BANKING INNOVATIVE SERVICE ON CUSTOMER SATISFACTION: A STUDY ON MANIPUR RURAL BANK

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Abstract

Purpose: The purpose of this study is to examine customer response towards the key service attributes like reliability, responsiveness, tangible infrastructure, and assurance and employee empathy of Manipur Rural Bank.

Methodology Approach: Twelve branches of Manipur Rural Bank were selected; seven branches were in Imphal West and five in Imphal East. The total number of customers sampled was 360, out of which 200 were customers of Imphal West and 160 customers from Imphal East. Data were collected by a self-administered questionnaire. The SERVQUAL model was the guiding force for the analysis which has also been used together with exploratory factor analysis, correlation and regression in the evaluation of customer satisfaction. **Findings** - The results found that reliability, tangible infrastructure and empathy have a significant and positive effect on customer satisfaction. In comparison, assurance and responsiveness played little role. The study also helps to highlight some customers are remote, illiterate and unaware. **Research limitations/implications** - The results obtained are specific to Manipur Rural Bank and may not generalise to other banks. **Originality/value** - The research made by considering demographic, topographic and infrastructural factors (roads, transportation and branch locations) of hill districts, bank management should take revised model to know the demand of the customers at the grassroots level and then make supply-specific service and strategy.

Keywords: Customer satisfaction, quality of service, Manipur Rural Bank

1.2. Introduction

Marketing and behavioural scientists have long realised that customer delight can result in customer loyalty and higher profits (Rust et al, 2002; cited by Oriol Iglesias et al, 2018). Understanding how satisfied your customers really are is therefore important in a competitive environment. Global competition and accelerated technology have transformed many industries including one of the financial sectors-banking. The sector is evolving as a result of products, information technology, market liberalisation, and financial deregulation- all of which have brought change

in customer expectations. Financial innovation is nothing new, in fact, it serves to boost economies in the past. Adopting new and innovative solutions is helping banks remain competitive. The onslaught of private banks like HDFC, ICICI and UTI in 1990s radically change the Indian banking horizon and the customer demands top class services. Banks retaliated with value-added services such as ATMs, internet banking, mobile banking, etc. Until recently, customers in the Northeast had difficulty getting services from banks. Leaf way openings were hard to find due to hilly terrain and low-population levels, with service being available mostly from sub-divisional centres.

The introduction of Pradhan Mantri Jan Dhan Yojna (PMJDY) on the 15th of August, 2014 with private players and agencies supported under it, many rural branches aided in availing service alternatives and competitions. With increasing awareness and literacy, customers now have more knowledge on the risks, cost, and returns of financial products. Modern banking is more encompassing than just deposits, loans, and money transfer and includes insurance, brokerage, advisory services, merchant banking, factoring, and other services. For banks to thrive, they need to design marketing strategies that will attract and retain customers. Customer satisfaction and perception have become key performance indicators to banks. Increased Offerings Credit cards, mutual funds, merchant and lease financing are offered to create positive customer perceptions (Zeithaml et al., 2009). Continuous monitoring of customer impressions is necessary as impressions can change over time (Zeithaml & Bitner, 2003). Perceived service quality remains a very important, but occasionally controversial, construct in contemporary marketing literature. It has a direct impact on customer value and customer loyalty (Oliver, 1996). Innovation is a

multi-stage process, which transforms ideas into new or improved goods, services or procedures. For the banks, the ability to provide such type of innovative services is very important for survival in today's environment. Academics continually comment on the significance of innovation in addressing the issue of financial exclusion and improved service delivery in the financial sector since the beginning of financial modernisation (Baregheh et al., 2009).

1.3. Profile of Manipur Rural Bank

Manipur Rural Bank (MRB) was established in 1981 as a joint venture of Central Government, Manipur State Government and Punjab National Bank with the capital ratio as 50:15:35 respectively. The bank caters to the facilities of credit and banking in rural development for the entire state. Its basic mission is to link rural areas to the urban centres and one rural community to another. MRB facilitates financial inclusion and literacy through the provision of IT-based financial products like NEFT, RTGS, ATM, POS transactions, and SMS alerts recently launched to facilitate the same.

Table 1.1: Network of Manipur Rural Bank as on March 2022

SL. No	Districts	No. of Branches
1	Imphal East	5
2	Imphal West	7
3	Thoubal	4
4	Kakching	1
5	Bishnupur	4
6	Tengnoupal	1
7	Kangpokpi	1
8	Ukhrul	1
9	Noney	2
10	Churachandpur	1
Total		27

Source: Annual Report of Manipur Rural Bank, 2021-22

1.4 Review of Literature

A review of related literature is aimed to introduce the importance of the study in a thematic way. The study is structured based on 2 major assertions according to the area of research: (a) Customers' Satisfaction and Perception, and (b) Service Quality and Innovative Services. The main dimensions to

consider in this regard are the infrastructures of tangible, the responsiveness, reliability, assurance and empathy.

1.4.1. Customers' Satisfaction and Perception

Studies on customer perception and customer satisfaction are becoming more popular and are

well recognised in the knowledge about service marketing (Anderson et al., 1994). Recent research in the human service settings has further supported this relationship (Bigne et al., 2003). In regard to the relationship between perception and service quality, much literature has been devoted to how the quality and the quality perception should be measured (Cronin & Taylor, 1992). The Saraiya Committee

(1972) suggested seventy-seven improvements regarding customer services whereas the Talwar Committee (1975) focused on the fact that customer service is a dynamic concept and that it should be continuously evaluated to comprehend the perceptions of the customers. Kattara et al. (2008) found that customer satisfaction with the product offerings is one of the main determinants of overall customer satisfaction and the quality of services provided by the various channels (Information Technology enabled call centres and Traditional branches) is essential. This has major implications for how one manages satisfaction in the financial services industry. Suh and Han (2003) showed that the sense of security enhances customer satisfactions When trust and security are regarded as an important factor in e-commerce's acceptance. Bolton (1998) demonstrated that by modelling the length of time spent by the supplier and customer in the relationship, it is possible to calculate the effect of service improvements on revenue, pointing out the importance of changes in levels of satisfaction. Andreaasen and Lindestad (1998) found that corporate image has an effect on customer loyalty, while customer satisfaction does not have the same effect. Bihkongnyuy (2018) contended that it is imperative to maintain high quality, customer satisfaction and customer loyalty to win tough competition. Ahmed (2002) and Jham & Khan (2008) established the relationship between customer's satisfaction of Indian bank and the bank's performance. Quyet, Vinh, & Chang (2015), Kumar & Singh (2006), Pont & McQuilken (2005), Mistry (2013), no significant difference found in terms of satisfaction between loyalty and changes but stated significant impacts across all dimensions of behavioural intentions. Bloemer et al. (1998) identified reliability and market position as being important drivers of loyalty in retail

banking. Kaura et al. (2015) and Jamal & Naser (2002) demonstrated that the factors such as service quality, perceived price and fairness, and service convenience influence satisfaction and loyalty positively which act as mediators between antecedents and loyalty. Culiberg and Rojsek (2010) highlight the significance of customer satisfaction in various industries, and that low responses from bank employees may affect customer dissatisfaction, which could be overcome with specialised training.

1.4.2. Quality of Service and Innovative Services

This section involves review of the services of the bank with a focus on quality provided to the customers. SERQUAL conceptualises the quality of services using five variables: tangible infrastructure, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988; Ahmad et al., 2020; Mohammad et al., 2016; Roberts & Amit, 2008). The research community in turn largely takes for granted that the quality-of-service results in customer satisfactions, although the causality of the direction of the relationship is still debated (Anderson & Fornell, 1994; Reidenbach & Sandifer-Smallwood, 1990). Ushantha et al. (2014) found consumers perceive SERVPERF dimensions in a positive manner; namely, reliability, assurance, empathy, tangibles, and responsiveness are positively perceived. Sowmya & Kumar (2017) stated that customer base prefers online banking for its convenience, accuracy, tangibility, reliability, loyalty, and availability. The performance, success, and survival of banks are much dependent on the quality of service. Aktar (2011) and Ananth et al. (2010) believe the same while Hoffman & Batesan (2010) defined the service quality as a long term and global evaluation of a company's performance. Lovelock et al. (2011) believed that perceived service quality in customers is a result of customers making comparisons between their expectations and the outcomes. McDougall & Levesque (2000) and Felix (2017) suggested the most important factors in terms of satisfaction to be perceived value and basic quality of service. The extension of perceived value and service quality into models of satisfaction helps give a complete picture of the drivers of satisfaction. The Goiporia

Committee (1991) focused on the creation of an amicable banker - client relationship and therefore took some initiatives such as attractive term deposit schemes and customer service indices. Aldlaigan & Buttle (2002) highlighted that customer measures quality of service at organisational and transactional levels which is beneficial in banking. Dutta and Dutta (2009) described that foreign banks are considered to have better quality services compared to private and public banks, which influenced the performance of the bank. Munusamy, Chelliah, & Mun (2010) and Ozatac, Saner, & Sen (2015) stated that customer satisfaction is dependent on the establishment of strong relationships. Berry (1997) put forward four essential approaches which are transaction surveys, complaints handling, feedback and inquiries, market research, and employee surveys. Franke (1998) said that bank transformation is influenced by innovations on financial products and information technology, which affects product positioning and range. Nath, Schrick, & Parzinger (2001) and Malik (2014) stated that there is a need for banks to retain customers and increase market share, which would make sophisticated and low-cost technology very crucial. McMahon et al. (2014) opined that universal service policies and political promises result in rural communities being unprofitable for providers, where typically regulators are removed from local realities. Shabibir, Rehman, & Shabibir (2016) found both automated and traditionally provided services had direct and significant effect on satisfaction. The findings of Lee & Hwan (2005) and Ennew & Binks (1999) suggested that perceived quality is an antecedent of attitude and they are directly associated with satisfaction, purchasing intention, and profitability. Kolbe & Brenner (2006) stressed the increasing importance of self-services because of growing use of internet. Nyaga 2014 surveyed platforms in EAC member states with recommendations of legislative and regulatory modification in order for mobile money to be adopted. Sanjapan (2017) proposed high switching costs can deter customers from switching despite their dissatisfaction with the product, implying the presence of switching costs as a factor of satisfaction. Zhu, Wymer, & Chen (2002) revealed the role of information technology (IT)

based services both directly affecting the dimensions of SERVQUAL and indirectly affecting perceived quality/satisfaction. Jun & Cai (2001) argued that reliability, responsiveness, access and accuracy are major sources of satisfaction or dissatisfaction.

1.4.3. Studies on Rural Banks

The studies related with the focus areas of rural banks. Giardini & Fres (2008) argue that the emotional competence of employees towards the customer is represented by positive affect during encounters and has a direct impact on the customer's evaluation. Ga & Noa (2015) and Adil (2013) identified five dimensions namely price, security, perceived risks, responsiveness and assurance that improve the satisfaction related to online banking services in Nigeria. Sura (2008) and Soni & Kapre (2012) noted that although the performance of RRBs is improving, issues related to transparency are damaging the banker- to customer relationship in the country; the expansion of branches in backward areas could increase the benefits. Mengi (2009), Toor, Hunain, Hussain, Ali, & Shahid (2016) and Rahman (2013) determined the significant correlations between advanced services, cost & prestige, & consumer satisfaction. A non-significant relationship of basic services to satisfaction was found, although a positive relationship existed on loyalty. Mohammad, Yakubu, Bawuro & Magaji (2016) and Melnic (2016) emphasised that customers believe that banks should do what is best for them and that they should do whatever is required to provide simple and personal information to customers. Rao & Rao (2014) and Biswas (1993) wrote that the growth of the banking sector is rapidly growing in India but still there is some challenges of rural credit societies. Reddy & Prasad (2011) noted on the need to pay attention to RRBs for economic growth, but noted their performance was under-quantified even three decades later. Chiguvu & Guruwo (2017) found positive correlation between customer satisfaction and their loyalty and they recommended that bank should focus on enhancing customer satisfaction in order to build customer loyalty.

This study attempts to serve three objectives:
(a). To measure the level of customer

satisfaction based on the innovative services provided by Manipur Rural Bank. (b). To evaluate the impact of the factors on customer satisfaction in the study area. (c) To offer constructive suggestions based on the findings of the study. The relationship between customer satisfaction and service quality metrics will be examined using correlation analysis, and the impact of service quality on customer satisfaction will be examined using regression analysis.

1.5. Research Methods

Based on the existing literature, in this study, quantitative research method has used the procedure of structured questionnaire to validate the SERVQUAL model. The tangible factors that were studied were Tangibility, Reliability, Responsiveness, Assurance, Empathy and Satisfaction. To determine a relationship between the quality of service (QS) and customer satisfaction, quantitative methods were applied, such as regression and correlation methods which quantified the relationships between customer satisfaction and the factors that influence the quality of service (QS).

1.5.1 Sampling Design and Sample Size

The study began in a multiple stage random sampling procedure which then used purposive and convenience sampling. A self-administered questionnaire was distributed to 360 respondents randomly from seven branches in Imphal West District and five branches in Imphal East District. Only savings account holders were selected in order to maintain the homogeneity of the sample and the random error that possible would occur due to difference in the sample by the district (Calder, Philips & Tybout, 1981; Assael & Keon, 1982).

1.5.2 Research Scale Instrument

The questionnaire was organised into two parts. Part 1 was used to gather demographic data (age, gender, occupation, annual income, educational qualification, current services provided by the respondent's bank). Part 2 was a measure of customer's perceptions to the quality dimensions of service and their agreement to statements relating to satisfaction. A five-point Likert scale was employed; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

1.5.3 Data Analysis Method

The analysis of the data has been done using the software programme of Statistics Package for Social Sciences (SPSS) Version 21. Descriptive statistics (frequency distributions) summarised demographic variables of the respondents. Correlation coefficients were used to study the relationships between the service quality and its five dimensions and customer satisfaction. Finally, results from regression analysis were used to specify the most important dimensions of service quality that could predict satisfaction.

1.5.4 Research, Validity and Reliability

Pretesting was done in order to make sure that the questionnaire was fair and accurate. Guides to Exercise - Experts reviewed its content to ensure that all of the intended constructs were represented. Reliability was measured using Cronbach's alpha resulting in 0.837 for the 12 items assessing quality dimensions of the services and satisfaction - well above the acceptable level and indicating a reliable tool.

1.6 Analysis and Interpretations

The data analysis and interpretation of the gathered data are presented in this part. It demonstrates the application of statistical tools like frequencies, mean, correlations, and regression analysis

Table 1.2: Profile of the Sample Respondents

Variables		Frequency	Percentage
Age	20-Below	5	1.5
	20-30	78	21.67
	30-40	213	59.17
	40-50	30	8.33
	50-Above	34	9.44
Gender	Male	226	62.78
	Female	134	37.22
Marital Status	Single	77	21.39
	Married	267	74.17
	Divorce	10	2.78
	Widow	6	1.67
Educational Qualification	Primary	2	0.6
	High School	190	52.78
	Secondary	62	17.22
	Graduate	54	15
	Post Graduate	46	12.78
	Others	6	1.67
Occupation	Cultivator	156	43.33
	Services	122	33.89
	Business	24	6.67
	Homemaker	30	8.33
	Others	28	7.78

Source: Computed from the primary data

Table 1.2 shows profile of the sample respondents, most of the respondents (59.17 percent) were aged between 30-40 years. 62.78 percent of them were male. 52.78 percent had only a high school qualification or higher secondary. Majority (74.17 per cent) were married and the main sources of their income according to their reply were from cultivations (43.33 per cent).

1.6.1 Factor Analysis- In order to understand the determining elements and critical dimensions that customers in Manipur take into account when interacting with rural banks, factor analysis was constructed. As demonstrated in the tables below, the five key service quality factors that have the greatest influence on bank clients are tangibility, reliability, responsiveness, assurance, and empathy.

Table 1.3: Agreement level of Service Quality Dimensions on Tangibles Infrastructure

Tangible Infrastructure	M	SD	Interpretation
1. Parking space and seating Lounge	2.90	0.62	Moderately adequate
2. Pleasant and Attractive Décor	3.07	0.71	Adequate
3. Internet Facility	3.70	0.94	Adequate
4. Convenient branch location	3.71	0.82	Adequate
Reliability coefficient (Cronbach's Alpha): 0.799			
Eigenvalue : 1.642			
Variance Explained : 4.393			

Table 1.3 shows that bank services offered by banks are well satisfactory to respondents. The banks have adequate level of tangible assets as illustrated by mean ratings ranging from 2.90 to 3.71. Except for statement, "Parking space and

seating lounge" that was given the "moderately adequate" rating of 2.90, the overall perception of the branch location was excellent (mean 3.71), which indicates a pleasant and attractive decor. There is also the presence of a solid

internet connexion (mean 3.70). Respondents who rated the parking area to be moderately adequate did not like it, which would seem to

indicate that the banks have not addressed this physical need as much as necessary.

Table 1.4: Agreement level of Service Quality Dimensions on Reliability

Reliability	M	SD	Interpretation
1. Delivery of services on time	4.34	0.58	Highly Reliable
2. Safe and Secure Transactions	4.85	0.69	Highly Reliable
3. Accuracy and Safety of Records	4.21	0.75	Highly Reliable
4. Employees resolve customers' problems swiftly	2.09	0.78	Low Reliability
Reliability coefficient (Cronbach's Alpha): 0.723 Eigenvalue : 10.765 Variance Explained : 36.980			

According to the results of Table 1.4, which identify the application of service quality characteristics in the context of dependability, respondents consider the services of the bank in terms of dependability to be moderately reliable with mean scores ranging from 2.09 to 4.85.

These findings show that the services of the banks are trustworthy and reputable. The only outlier was statement#4 - "Employees quickly resolve customers 'complaints'" which received a low mean rating.

Table 1.5: Agreement level of Service Quality Dimensions on Responsiveness

Responsiveness	M	SD	Interpretation
1. Employee willingness to help customers	3.80	0.52	Highly Responsive
2. Providing Swift Services to the customers	3.72	0.85	Highly Responsive
3. Providing special care to special customers	3.55	0.81	Highly Responsive
4. Employees' response to customer request	3.76	0.89	Highly Responsive
Reliability coefficient (Cronbach's Alpha) : 0.784 Eigenvalue : 1.848 Variance Explained : 6.021			

Table 1.5 determined the extent of responsiveness of the respondent banks to their customers as a service quality dimension. All statements received high amount of respondent. The highest mean rating (3.80) is from "Providing special care to special customers." This is followed by responsiveness of the employees to customer

requests (3.72) and providing swift services to customers (3.55). Overall, Bank responsiveness is reliable as evidenced by the high mean ratings. The only exception is "Employee willingness to act for the benefit of customers," which showed a lower impact.

Table 1.6: Agreement in the Application of Service Quality Dimensions— Assurance

Assurance	M	SD	Interpretation
1. Fast and efficient delivery of services to the customers	2.23	0.66	Less Assurance
2. Politeness of the employees	3.32	0.83	Moderate Assurance
3. Customers can trust the employees of the bank	3.96	0.91	Moderate Assurance
4. Employees inform the customer exactly the time required to perform the duty	3.80	0.94	Moderate Assurance
Reliability coefficient (Cronbach's Alpha) : 0.807 Eigenvalue : 2.371 Variance Explained : 8.976			

Table 1.6 reveals the assurance of the banks towards the customer services. Trust in

employees, which was rated as the highest mean score (3.96), was followed by employees

properly informing customers of the time needed to carry out a duty (3.80), and employee politeness (3.32). The service described in

statement number 1 was given less assurance. Since of a high number of customers, it took the bank longer than anticipated to settle accounts.

Table 1.7: Agreement in the Application of Service Quality Dimensions— Empathy

Empathy	M	SD	Interpretation
1. Convenient working hours	3.94	0.56	High Empathy
2. Banks understand customers' needs	2.39	0.77	Moderate Empathy
3. Individual attention to customers	3.98	0.81	High Empathy
4. Customer complaints are resolved quickly	2.63	0.97	Moderate Empathy
Reliability coefficient (Cronbach's Alpha) : 0.839			
Eigenvalue : 1.243			
Variance Explained : 4.287			

Table 1.7 assess an agreement with the empathy dimension. Excluding the statements "Bank understands customers requirement" & 4 Customer concerns are resolved quickly, the rest of the respondents indicated a fair amount of empathy in their answer. On a whole, the respondents had a high level of sympathy for the services offered, suggesting that the banks are fairly attuned to the emotional needs of their customers.

1.6.2 Correlation Analysis

In this study, the correlation statistical method was used to investigate the hypothesized relationships between the two variables, service quality and customer happiness. Table 1.8 presented the analysis's findings.

Table 1.8: Correlation Analysis of the Variables: Service Quality and Customer Satisfaction

Variables	Mean	St. Dev	Cor	1 Service Quality	2 Customer Satisfaction
1 Service Quality	4.146	.49052	Cor	1	.669
2 Customer Satisfaction	1.600	1.2334	Cor	.669	1

Control Variables: Age, Gender, Occupation, Education Qualification, and district

N.B. *: Correlation is significant at the 0.05 level (2-tailed)

**: Correlation is significant at the 0.01 level (2-tailed)

Table 1.8 indicates the correlation analysis between the two variables. From the result, it is clearly shown that there is a positive relationship between the variables namely service quality and customer satisfaction at $p < .01$ level of significance. Specifically, there is a strong positive relationship between service quality and customer satisfaction reliability with $r = .669$ at $p < .01$. The findings reject the null hypothesis that there is no relationship between these variables. This suggests that these two factors, which are important for the potential expansion of rural banks in the state, should be continually stressed by the responding banks in their operations. Additionally, these findings were in line with other research that supported the link between

satisfactory customer service and service quality (Jalagat, et al, 2017). Moreover, it also supports the conclusion of a study conducted by Hamzah et al. (2015) in Malaysia that customer satisfaction and service quality are directly related.

1.6.3 Multiple Regression Analysis

The research hypotheses were put to the test using multiple regression analysis. Since the sample size for this investigation was not very large, it was deemed sufficient to employ multiple regression analysis. Table 7 shows that the analysis is statistically significant ($P < 0.01$) and that the five factors that determine service quality account for around 65% ($R^2 = 0.65$) of total customer satisfaction.

Table 1.9: Service Quality Dimensions Regression Analysis

Model	Unstandardized Coefficient		Standardized Coefficient	Hypotheses	t	Sig.
	B	Std. Error	Beta			
(Constant)	2.192	.4384			7.235	.000
Reliability (RL)	.141	.060	-.122	H1	.2.2338	.030
Assurance (AS)	.061	.055	.060	H2	1.119	.164
Responsiveness (RP)	.098	.056	.092	H3	1.699	.090
Tangible Infrastructure (TI)	.123	.102	.101	H4	2.975	.002
Empathy (EP)	.162	.057	.143	H5	2.830	.004

Adjusted R² = 0.650

F = 47.310

Sig. = 0.000

a. Dependent Variable: Satisfaction

The coefficient values demonstrate that Empathy (H5) with a 0.004 significance level and reliability (H1) with a 0.030 level are better predictors of customer satisfaction. Thus, higher support is provided for Hypothesis 4 ($P < 0.01$) suggesting that the tangible infrastructure of responding banks has enough tangibles as evidenced by the results reflecting

a better predictor of customer satisfaction. Low support has been found, however for Hypotheses 2 and 3 that focus on the assurance aspect of a bank, their approachable and receptive aspect, and awareness or responsiveness provided. Therefore, based on these theories, the following equation can be formed:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3$$

$$\text{Overall satisfaction} = 2.192 + 0.030 (\text{RL}) + 0.002(\text{TI}) + 0.004 (\text{EP})$$

Where OR = Overall Reliability and RL= Reliability TI = Tangible Infrastructure and EP = Empathy.

The formula indicates that for each one unit increase in overall reliability, the customers satisfaction is increased by 0.040. Each one unit increase in tangible infrastructure increases satisfaction by .003. Empathy gives 0.005 to the satisfaction. Thus, bank care and connexions with their customers is the most reliable predictor of satisfaction.

1.7 Conclusion and Recommendation

The study measured the quality of services in relation to customer satisfaction of the Manipur rural bank by applying SERVQUAL model. Results show that there is a significant correlation between the quality of service and customer satisfaction. Consistent with previous research (Gillani & Awan, 2014), the higher the service quality, the greater the satisfaction. The mean scores show that the services offered by

the banks were rated by respondents to be in the moderate to high-range suggesting an overall satisfaction. Regression analysis showed that the areas of reliability, tangible infrastructure, and empathy are areas that the banks should give the most attention and may be those areas where assurance and responsiveness are less of a priority. Although these latter variables were not statistically significant, other research has pointed to the importance of these variables so they should not be ignored. Recommendations: improve the services to achieve a very satisfactory level, especially in the grass roots where the level of satisfaction is moderate. By strengthening the most significant driving forces - reliability, physical infrastructure and empathy - more constructive response will ensue. In addition, retain emphasis on assurance and responsiveness, because mean ratings indicate moderate satisfaction in these areas. The problems identified in the study included willingness of employees to help, quick problem resolution, and quick, efficient provision of services. Banks have to tackle

these immediately because they play a role in the quality of their service. Continuously improve online and mobile banking as to be more user-friendlier and accessible. As Manipur Rural Bank is new, not a lot of branches are in place, thus in the future research can use the SEQUAL approach and benchmarking with other service providers where applicable.

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INTERRELATIONSHIP BETWEEN SOCIO-CULTURAL VALUES AND ENTREPRENEURSHIP IN INDIA: A STUDY OF TRIBAL CULTURE IN JHARKHAND

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Abstract

This study analyzes the impact of social and cultural values on the development of entrepreneurship in India, particularly in the comparative context of tribal culture in Jharkhand and the mainstream social structure of Bihar. The theoretical foundation of the study is based on classical and modern thinkers such as Max Weber, Joseph Schumpeter, David McClelland, Amartya Sen, and Geert Hofstede, who demonstrate that entrepreneurship is not merely an economic process but is deeply influenced by socio-cultural contexts. The study finds that factors such as family, caste, religion, education, social networks, and social background determine the nature and direction of entrepreneurship in India. The tribal culture of Jharkhand, which is based on collectivism, equality, and a nature-oriented lifestyle, promotes inclusive and sustainable entrepreneurship. Here, enterprises based on Self-Help Groups (SHGs), Non-Timber Forest Products (NTFPs), and traditional knowledge are prominent, contributing to women's empowerment and local development. The study concludes that socio-cultural contexts deeply influence the type, level, and success of entrepreneurship. Therefore, to promote entrepreneurship in India, positive changes in education, social inclusivity, financial access, and cultural perspectives are necessary.

Keywords: Socio-cultural values, entrepreneurship, tribal culture, sustainable entrepreneurship, inclusive entrepreneurship, Jharkhand, Hofstede's cultural dimensions

1. Introduction

Entrepreneurship is not merely an economic process but is deeply embedded in social and cultural contexts. Max Weber (1930) considered religious-cultural values as the foundation of capitalist development, while Geert Hofstede (1980) explained risk-taking and innovation through cultural dimensions such as uncertainty avoidance and individualism. In Indian society, family, caste, religion, and community networks shape entrepreneurial behavior (Bhoganadam & Srinivasa Rao, 2015).

2. Theoretical Framework and Literature Review

2.1 Classical Theories

Joseph Schumpeter (1934), in *The Theory of Economic Development*, described the entrepreneur as an “agent of creative destruction.” According to him, entrepreneurs dismantle existing production systems and establish new technologies, markets, and organizational structures. This process depends on cultural values—where societies encourage innovation and change, entrepreneurship flourishes. In the Indian context, where traditional values are strong, cultural barriers

such as risk aversion pose challenges to adopting Schumpeterian innovation.

David McClelland (1961), in *The Achieving Society*, identified the need for achievement as the core foundation of entrepreneurship. He argued that societies with achievement-oriented values tend to have higher levels of entrepreneurship. Family, education, and social norms can either stimulate or suppress this motivation. In India, the joint family system may encourage achievement motivation, but caste-based constraints and security-oriented thinking can weaken it.

2.2 Theory of Social Freedom and Development

Amartya Sen (1999), in *Development as Freedom*, linked social freedom, equality, and capabilities with economic development and entrepreneurship. According to him, individual entrepreneurial potential can fully develop only when social barriers such as caste, gender, or regional inequality are reduced. Tribal communities in Jharkhand, with their egalitarian structures, support Sen's theory, whereas hierarchical caste structures in Bihar restrict such freedom.

2.3 Contextual Entrepreneurship

Friederike Welter (2011), in "Contextualizing Entrepreneurship," emphasized the social context as a central element in entrepreneurial analysis. She argued that entrepreneurship is influenced by local social networks, cultural norms, and institutional environments. This perspective is especially relevant for developing countries, where family networks and community support determine entrepreneurial success. Community enterprises based on SHGs in Jharkhand are a direct example of Welter's contextual model.

2.4 Institutional and Cultural Linkages

Zoltan J. Acs et al. (2008), in *Small Business Economics*, established a relationship between cultural values, institutions, and economic development. Using Global Entrepreneurship Monitor (GEM) data, they showed that entrepreneurship rates are higher where cultural

dimensions (such as low uncertainty avoidance in Hofstede's model) are favorable. In India, high uncertainty avoidance and collectivism tend to limit entrepreneurship, whereas tribal cultures promote sustainable entrepreneurship through nature-centric values.

In the Indian context, Bhoganadam and Srinivasa Rao (2015), in their study "*A Study on Socio-Cultural Factors Influencing Indian Entrepreneurship: A Critical Examination*" (published in the *International Journal of Applied Engineering Research*), identified six major socio-cultural factors influencing entrepreneurship. These factors affect different stages of entrepreneurship such as emergence, establishment, growth, and success. Based on literature review, the authors proposed a conceptual framework linking these factors with entrepreneurial behavior.

The Six Key Factors Are as Follows:

i. Family Background: Family is the strongest foundation of entrepreneurship. In India, the joint family system provides financial resources (seed capital), social capital, business experience, skill transfer, and risk tolerance. Traditional business communities (such as Marwaris, Gujarati Baniyas, and Chettiars) train children in business from an early age, increasing entrepreneurial potential. Family support (emotional and financial) enables individuals to restart after failure. Conversely, job-oriented or risk-averse families may discourage entrepreneurship. This factor is linked to the Resource-Based View and Social Capital Theory.

ii. Education: Education enhances problem-solving ability, innovation, market understanding, and managerial skills. Individuals with higher education (especially in management, engineering, and technical fields) are more likely to start modern and scalable enterprises such as startups. In India, lack of education—especially in rural and tribal areas—limits enterprises to subsistence-level activities. This factor is associated with Institutional Theory and Human Capital Theory.

iii. Caste: In India, the caste system has historically determined occupational roles. Some castes (such as Vaishyas, Banias, and Khatri) are traditionally associated with trade and entrepreneurship, giving them access to strong networks, market knowledge, and capital. Other castes (especially marginalized or Dalit communities) face social barriers, discrimination, and lack of resources, limiting entrepreneurship. Thus, caste has a dual effect—positive for some groups and restrictive for others.

iv. Religion: Religion influences ethical values, beliefs, risk-taking behavior, and business ethics. In Jainism, Sikhism, and certain Hindu traditions, business is often considered a moral duty. However, some religious beliefs (such as excessive emphasis on fatalism or karma) may reduce risk-taking. Religion provides normative legitimacy to entrepreneurship, echoing Max Weber's Protestant Ethic thesis.

v. Social Networks: Social networks play a crucial role in identifying opportunities, mobilizing resources, accessing information, and reaching markets. In India, caste- and community-based networks (such as Gujarati business networks or tribal SHGs) strengthen entrepreneurship. These networks foster trust-based business relationships and reduce dependency on intermediaries. This factor aligns with Social Networking Theory and is essential at all stages of entrepreneurship.

vi. Social Background: This is a broader factor including income level, region (urban/rural), gender, language, regional culture, and social status. Urban middle classes tend to be more innovation-oriented, while rural or backward areas are dominated by subsistence entrepreneurship. Gender discrimination limits women's entrepreneurship, although SHGs have improved participation. This factor is contextual and linked to Welter's (2011) framework.

3. General Impact of Social and Cultural Values (General Impact in Indian Context)

India is a pluralistic society where social and cultural values deeply influence the development, nature, and direction of

entrepreneurship. These values shape an individual's risk-taking ability, innovative tendencies, and resource mobilization processes, while at the societal level they determine the availability of opportunities, legitimacy, and the structure of economic activities.

The following section presents a detailed analysis of key factors, with particular emphasis on Hofstede's cultural dimensions, family system, caste structure, and religious-ethical values.

3.1 Joint Family System and Social Capital

In Indian society, the joint family system provides a strong foundation for entrepreneurship. It not only offers financial resources (such as seed capital and pooled funds) but also contributes social capital, business experience, skill transfer, and emotional support.

In traditional business families, knowledge is transferred across generations, which enhances risk tolerance and ensures business continuity. For example, among Marwari and Gujarati families, the joint family system has laid the foundation for large business empires (such as Birla, Bajaj, and Ambani), where collective decision-making and shared resource utilization have strengthened entrepreneurship.

However, the joint family system also has certain limitations. Collective decision-making can sometimes restrict individual innovation and independent initiative. Additionally, family pressure and traditional thinking (such as preference for security) may discourage risk-taking.

Recent studies indicate that joint families tend to be more economically successful (with a higher proportion among high-income households) as they provide economies of scale and reduce costs. Nevertheless, with modernization and the growing trend toward nuclear families, these advantages are gradually declining.

3.2 Uncertainty Avoidance and Hofstede's Cultural Dimensions

According to Geert Hofstede (1980), India scores 40 on the Uncertainty Avoidance Index (UAI), which is significantly lower than the global average (65). This indicates a moderate to low level of intolerance toward uncertainty and ambiguity. People tend to be relatively flexible and adaptable in uncertain situations, which is favorable for entrepreneurship (e.g., rapid experimentation in startup culture).

However, other cultural dimensions such as high Power Distance (77) and Collectivism (low Individualism) tend to promote risk aversion. Social hierarchy and family/community expectations make failure socially undesirable, leading many individuals to prefer secure jobs (especially government employment).

As a result, entrepreneurship often remains subsistence-based or small-scale, while large-scale innovative ventures are relatively limited.

3.3 Caste System and Entrepreneurial Opportunities

The caste system influences entrepreneurship in India in a dual manner. Certain communities (such as Vaishya/Bania, Marwari, Agarwal, Oswal, Jain) have historically been associated with trade and commerce. Strong social networks, trust-based credit systems, market knowledge, and traditions of capital accumulation have made them prominent in entrepreneurship. Marwari and Bania communities have successfully transitioned from trade to industry from the colonial period to modern India, and they continue to dominate large industrial houses. On the other hand, other caste groups (especially Scheduled Castes, Scheduled Tribes, and backward classes) face barriers due to social discrimination, lack of resources, and unequal access to education and networks. Limited social mobility based on caste creates entry barriers for new entrepreneurs. Although modern initiatives such as reservations, government schemes, and Self-Help Groups (SHGs) have improved inclusivity to some extent, caste continues to influence the structure of entrepreneurship.

3.4 Religion, Ethical Values, and Trust-Based Relationships

Religion plays a significant role in shaping ethical values, work culture, and business relationships in Indian entrepreneurship. Max Weber (1930) identified the Protestant Ethic as the foundation of capitalism, but in the Indian context, elements of Hindu, Jain, and Sikh traditions (such as non-violence, truth, and charity) strengthen honest and long-term business relationships.

Jain and Vaishnav traditions often view business as a moral duty, which reinforces trust-based credit systems and networks. Religious values promote trust, which is crucial in Indian business practices (e.g., informal credit systems).

However, certain religious beliefs (such as karma theory and fatalism) may discourage risk-taking or innovation. Recent meta-analyses suggest that the impact of religion on entrepreneurship in Hindu contexts may be mixed or negative, whereas Islamic and Jewish traditions show more positive effects.

Ethics and social responsibility (such as CSR) in Indian entrepreneurship are also influenced by religious values. Overall, social and cultural values in India influence entrepreneurship in both positive (social capital, networks, ethics) and negative (risk aversion, hierarchy, inequality) ways. These factors create regional and community-based variations (e.g., tribal egalitarianism in Jharkhand versus hierarchical structures in Bihar). To promote entrepreneurship, positive transformations in these values—through education, inclusivity, and risk tolerance—are essential.

4. Impact of Tribal Culture and Social Structure in Jharkhand

The tribal culture of Jharkhand—comprising major tribes such as Santhal, Munda, Ho, Oraon, and Kharia—is primarily based on collectivism, a nature-centric lifestyle, traditional knowledge systems, and an egalitarian social structure. This culture emphasizes community welfare over individual profit, environmental conservation, and

intergenerational skill transfer. As a result, entrepreneurship in this region develops mainly in a sustainable, inclusive, and livelihood-oriented form, which differs from large-scale profit-driven enterprises.

4.1 Collectivism and Inclusive Entrepreneurship

In tribal society, the sense of “we” is stronger than “I.” Collective management of resources (land, forest, water) and decision-making through the Gram Sabha (village assembly) strengthen inclusive models. Self-Help Groups (SHGs) and cooperative enterprises are key expressions of this system. SHGs organize women and promote financial literacy, access to credit, and collective production.

For example, in Jharkhand, SHGs have empowered women in sectors such as lac, mahua, tendu leaves, and handicrafts. In districts like Khunti and West Singhbhum, women’s participation in NTFP-based entrepreneurship is higher than that of men (44% vs. 36%), largely due to SHGs and cooperatives. The community structure includes all groups (women, youth, elderly) in decision-making, ensuring gender and social equality. This aligns with Welter’s (2011) contextual entrepreneurship theory, where local social networks determine entrepreneurial success.

4.2 Nature-Based Sustainable Entrepreneurship

Tribal life is closely linked to forests, water, and land, leading to economic activities centered around Non-Timber Forest Products (NTFPs). These products are eco-friendly and sustainable, as tribal traditions prevent over-exploitation of resources. Major NTFPs include mahua (flowers, oil, liquor), lac, tendu leaves, honey, tamarind, bamboo, medicinal herbs, and handicrafts (bamboo products, ironwork, traditional art). Women play a key role in the NTFP value chain, including collection (42% independently, 29% jointly), processing (drying, packaging), and marketing. Landless or marginal tribal women run enterprises through SHGs such as mahua-based products, lac processing, organic farming, and handicrafts. These activities contribute 20–40%

of annual income. This model aligns with Sustainable Development Goals (SDGs), focusing on environmental conservation, gender equality, and poverty reduction. According to the FICCI-SEDF (2021) report, such enterprises in districts like Gumla and Khunti reduce migration and promote self-reliance.

4.3 Role of Traditional Knowledge and Skills

Traditional knowledge passed across generations (e.g., organic farming, medicinal plant use, handicrafts) forms the foundation of entrepreneurship in tribal communities.

This knowledge promotes low-cost, eco-friendly techniques and provides a competitive advantage in local markets (haat-bazaars). For example, tribal women produce high-quality lac products using traditional methods, which have demand in global markets. However, lack of integration with modern markets (branding, packaging, digital marketing) limits the full economic potential of this knowledge.

4.4 Key Challenges

Tribal entrepreneurship in Jharkhand faces several structural and cultural challenges:

- Lack of capital and financial access: Most enterprises are informal, with average monthly incomes between ₹3,000–5,000.
- Market access and marketing issues: Due to lack of transportation, branding, and value addition, middlemen capture most of the profits.
- Lack of modern technology and education: Low literacy (65–70% in many areas), lack of technical skills, and poor digital literacy limit growth.
- Risk aversion: Traditional orientation leads to subsistence-focused livelihoods with limited adoption of high-risk innovation.
- High rate of unregistered enterprises: 94–98% enterprises are unregistered, restricting access to schemes, credit, and markets.
- Other challenges: Patriarchal norms (in some areas), language barriers, and security issues in Naxal-affected regions.

5. Conclusion

This study clearly shows that entrepreneurship is not merely a result of economic opportunities but is deeply influenced by social and cultural structures. In a diverse society like India, these influences vary regionally, as illustrated by the comparative context of Jharkhand and Bihar.

Jharkhand's tribal culture—characterized by collectivism, equality, nature-based living, and traditional knowledge—develops entrepreneurship as an inclusive, sustainable, and livelihood-oriented model. SHGs and NTFP-based activities promote not only economic empowerment but also social inclusion and women's empowerment. However, challenges such as lack of capital, market access, technology, and informality hinder its expansion. Theoretically, this study validates Schumpeter's innovation theory, McClelland's achievement motivation, Sen's concept of freedom, and Welter's contextual approach. It demonstrates that entrepreneurship flourishes where social equality, network support, and cultural flexibility are strong. For promoting entrepreneurship in India, economic policies alone are insufficient. Deep social transformation is required. Education and skill development must equip youth with practical skills, problem-solving abilities, and innovation capacity. Social inequalities—especially caste and gender—must be addressed to ensure equal opportunities and access to resources. Financial inclusion and market access are equally crucial. Modernizing traditional knowledge and integrating it with technology, branding, and market strategies can unlock vast potential. Finally, a cultural mindset that encourages risk-taking and accepts failure as a learning process is essential. In conclusion, the future of entrepreneurship in India depends not only on economic reforms but also on balanced social and cultural transformation. Without inclusivity, equality, and a positive attitude toward innovation, the vision of broad-based and sustainable entrepreneurship will remain incomplete.

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EFFECTIVENESS OF SKILL-BASED CURRICULUM IN ENHANCING EMPLOYABILITY SKILLS AMONG SENIOR SECONDARY STUDENTS IN JAMSHEDPUR

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Abstract

The growing gap between academic education and employment requirements has emerged as a major concern in the Indian education system. Traditional school curricula often emphasize theoretical knowledge while providing limited opportunities for practical skill development, resulting in low employability among school graduates. In response to this challenge, skill-based and vocational education has been introduced at the senior secondary level to equip students with industry-relevant competencies. The present pilot study examined the effectiveness of skill-based curriculum in enhancing employability skills among senior secondary students in Jamshedpur, an industrial city with significant employment potential. The study adopted a descriptive survey method and included a sample of 50 senior secondary students selected through random sampling. The sample comprised 25 students from skill-based or vocational streams and 25 students from traditional academic streams. Data were collected using a self-developed Employability Skills Questionnaire and a Student Perception Scale on Skill-Based Curriculum. The collected data were analyzed using percentage analysis, mean, standard deviation, and comparative analysis.

The findings revealed that students enrolled in skill-based curriculum demonstrated higher levels of employability skills such as communication, teamwork, problem-solving, adaptability, and basic technical skills compared to students from traditional academic streams. Skill-based students also showed greater confidence, better job readiness, and higher awareness of career opportunities. In contrast, students from traditional streams exhibited stronger theoretical knowledge but lacked sufficient practical exposure and workplace readiness. The study further identified challenges in the implementation of skill-based curriculum, including inadequate infrastructure, limited industry exposure, and insufficiently trained vocational teachers. The pilot study concluded that skill-based curriculum plays a significant role in enhancing employability skills among senior secondary students. The findings highlighted the need for strengthening vocational education through improved infrastructure, teacher training, school-industry collaboration, and integrated career guidance. The study provides a foundation for large-scale research and supports policy initiatives aimed at promoting skill-based education at the school level.

Key Words: Skill-Based Curriculum, Employability Skills, Vocational Education, Senior Secondary Education, Job Readiness

1. Introduction

In the contemporary era of globalization, rapid industrialization, and technological advancement, the nature of employment has undergone significant transformation. The traditional education system, which primarily emphasizes theoretical knowledge and rote learning, has often been criticized for failing to equip students with practical skills required in the modern workforce. As a result, there is a growing concern regarding the employability of school graduates, particularly at the senior secondary level.

India, with its vast youth population, faces the dual challenge of providing quality education and ensuring employment opportunities. According to national and international reports, a substantial proportion of Indian youth remain unemployed or underemployed due to a mismatch between educational outcomes and industry requirements. To address this issue, the Government of India has introduced several reforms such as the National Skill Development Mission, Skill India Initiative, and the inclusion of skill-based and vocational education at the school level.

Skill-based curriculum at the senior secondary stage aims to develop employability skills such as communication, problem-solving, teamwork, adaptability, digital literacy, and basic technical competencies. These skills enable students to either enter the workforce directly or pursue higher education with better preparedness. The Central Board of Secondary Education (CBSE) and state boards have introduced various vocational and skill-based subjects aligned with industry needs.

Jamshedpur, known as the “Steel City of India,” is an industrial hub with a strong presence of manufacturing, engineering, and service industries. The city offers a unique context to study the effectiveness of skill-based education due to its proximity to industrial organizations such as Tata Steel and its allied enterprises. Despite the availability of employment opportunities, many students struggle to secure suitable jobs due to inadequate employability skills.

In this context, the present pilot study seeks to examine the effectiveness of the skill-based curriculum in enhancing employability skills among senior secondary students in Jamshedpur. The findings of the pilot study will help refine research tools, methodology, and provide insights for a larger-scale study.

2. Need and Significance of the Study

The rising rate of unemployment among educated youth has emerged as a serious concern in the contemporary education system. Despite possessing academic qualifications, many students fail to secure suitable employment due to a lack of practical skills, workplace readiness, and adaptability. Traditional school education has largely focused on theoretical knowledge and examination-oriented learning, which often does not meet the evolving demands of the job market. In contrast, employers increasingly seek individuals who possess employability skills such as communication ability, problem-solving skills, teamwork, technical competence, and a positive work attitude. This growing mismatch between educational outcomes and employment requirements highlights the urgent need for integrating skill-based learning within the school curriculum.

Senior secondary education plays a pivotal role in shaping students’ future career paths, as it serves as a transitional stage between school education and higher education or employment. Introducing skill-based curriculum at this stage enables students to acquire practical knowledge, explore career options, and develop competencies that enhance their employability. Therefore, examining the effectiveness of skill-based curriculum at the senior secondary level is both timely and essential.

The educational significance of the present pilot study lies in evaluating whether the skill-based curriculum effectively enhances employability skills among students. By assessing students’ skill levels and perceptions, the study provides evidence regarding the relevance and usefulness of skill-based education in preparing students for the workforce. This justification is crucial for strengthening the implementation of vocational subjects in senior secondary schools.

From a policy perspective, the findings of the study can assist policymakers and educational planners in improving vocational education programs. The study offers insights into the strengths and challenges of skill-based education, thereby supporting efforts to align school curriculum with local industry requirements and national skill development initiatives.

The local context of Jamshedpur further adds to the significance of the study. As an industrial city, Jamshedpur provides ample opportunities for practical exposure and industry interaction. The study examines whether schools are effectively utilizing this advantage to enhance students' employability skills.

Additionally, the study highlights the impact of skill-based education on student development, particularly in terms of confidence, career readiness, and job orientation. As a pilot study, it also contributes to future research by identifying limitations, refining research tools, and improving methodological approaches for large-scale investigations.

3. Review of Related Literature

1. Nugraha, H. D., Kencanasari, R. A. V., & Komari, R. N. (2020). *Employability Skills in Technical Vocational Education and Training (TVET)*.

Nugraha et al. (2020) aimed to identify the key employability skills necessary for graduates of technical and vocational education and training programs and to develop a framework for integrating these skills into the curriculum. Using a **literature review** methodology, the authors reviewed existing research on employability competencies in TVET-related fields and categorized the dominant skills needed. They found that social skills, communication, field-specific knowledge, ICT skills, management skills, creativity and innovation, problem-solving, and critical thinking are essential for employability, especially in vocational contexts. The study recommended that educational institutions redesign curricula to incorporate these competencies explicitly and align them with industry needs. However, the research was

limited by its secondary nature, lacking empirical data from students or employers, and did not explore how these frameworks could be applied specifically within school contexts. This review highlights the foundational skills necessary for employability and reinforces the need for curriculum integration in senior secondary education to prepare students more effectively for the workforce.

2. Sharma, S. (2024). *Enhancing Employability through Skill Development: A Study in the Context of NEP 2020*.

Sharma (2024) examined how national education reforms under India's National Education Policy (NEP) 2020 support the development of employability skills through vocational and skill-based education. The study utilized a **policy analysis and documentary review** approach to evaluate NEP strategies, initiatives, and practical implementation mechanisms. Findings indicate that NEP 2020 emphasizes practical skill-building, digital learning, and industry partnerships, which can potentially bridge the gap between academic learning and job market requirements. The author recommended strengthening teacher training, expanding vocational offerings, and enhancing collaboration with industry partners to improve outcomes. A research gap remains in assessing how these NEP interventions directly impact student employability at the senior secondary level, especially in specific local contexts like Jamshedpur. The study underscores the policy foundation for skill education while highlighting the need for empirical evaluation of its effectiveness in practice.

3. Ali, P. S. (2025). *Skill-Based Education and its Impact on Lifelong Learning and Career Advancement*.

Ali's (2025) study explored the role of skill-based education in fostering lifelong learning and career progression among students and professionals. Using a **quantitative design** with convenience sampling and self-structured questionnaires, the research analyzed data from students and educators to assess relationships between skill-based education and adaptability, career development, and continuous learning.

Results revealed a positive correlation between participation in skill-based education and increased adaptability, career advancement, and lifelong learning capacities. The study recommended expanding skill-based learning opportunities and embedding them more deeply into formal education systems. However, limitations include the non-random sampling and a narrow focus on general skill learning rather than specific employability outcomes or vocational contexts. A gap exists in applying such findings specifically to senior secondary schools and the structured curricula that prepare students for employment. This study contributes to understanding skill education's broader impacts beyond immediate job skills.

4. Sulistiobudi, R. A., & Kadiyono, A. L. (2023). *Employability of Students in Vocational Secondary Schools: Role of Psychological Capital and Student-Parent Career Congruence*.

Sulistiobudi and Kadiyono (2023) investigated how psychological capital (e.g., self-efficacy, resilience) and alignment between students' and parents' career expectations influence employability development in vocational secondary students. Using a survey design with 317 vocational school students in Indonesia, the study employed statistical analysis to examine relationships between personal and familial traits and employability outcomes. Results showed that both psychological capital and student-parent career agreement significantly affect students' perceived employability competence. The authors recommended including psychological support measures and family engagement in education programs. A research gap exists in exploring how curriculum design and instructional quality specifically foster employability skills, especially in formal senior secondary school settings outside vocational contexts, which this study did not address. This research highlights the importance of psychosocial factors alongside curriculum content in employability skill development.

5. *Global Employability Skills in the 21st Century Workplace: A Semi-Systematic Literature Review* (2023).

This semi-systematic review synthesized global research on employability skills, identifying essential competencies such as communication, problem-solving, teamwork, adaptability, and ICT literacy that employers consistently seek.

Conducted through a structured literature review of studies over three decades, it highlighted significant **mismatches between employer expectations and graduates' skill levels**, suggesting that educational systems often fail to equip students with critical soft and technical skills. The review recommended that educators incorporate real-world problem-based learning, internships, and work-integrated learning to enhance employability. However, a gap remains in localized research within developing economies' school systems, particularly at the senior secondary level, and how curriculum design impacts skill acquisition. This work provides a broader framework for essential skills but lacks direct data on specific educational interventions or contexts like India's secondary schools.

6. Mahapatra, P., & Satapathy, S. (2016). *Skills, Schools and Employability: Developing Skill-Based Education in Schools of India*.

Mahapatra and Satapathy (2016) explored the status and challenges of implementing skill-based education within Indian schools and its influence on employability. Through case analysis and literature discussion, the study observed that despite the clear advantages of skill education for youth employability, many schools lack adequate infrastructure, teacher training, and industry linkages to make skill education effective. The authors recommended strategic investments in facilities, teacher capacity building, and curriculum redesign to bridge the gap between academic outcomes and employability. A research gap identified is the need for empirical studies measuring student outcomes directly, rather than descriptive discussions. The study remains foundational for understanding school-level challenges but requires further targeted research in senior secondary contexts.

7. *Vocational Education: The New Development and Change in the Adaptive Curriculum of Learning Model* (Barliana et al., 2024).

Barliana et al. (2024) conducted a systematic literature review to assess the alignment between vocational education curricula and industry requirements, highlighting that many

vocational graduates lack the competencies required for employment due to outdated curricula and poor industry integration. The study emphasized the necessity of **adaptive curriculum models** that continuously update content based on employer feedback and labor market trends. Recommendations include increased flexibility in curriculum design, stronger industry collaboration, and incorporating workplace experience into learning. However, the review focused mostly on vocational education at post-secondary levels, and its implications for senior secondary skill programs require further investigation. A key research gap is empirical validation of adaptive models within formal school systems to understand how such approaches impact students' employability skills.

4. Statement of the Problem

The problem selected for the present pilot study is: "Effectiveness of Skill-Based Curriculum in Enhancing Employability Skills among Senior Secondary Students in Jamshedpur."

5. Objectives of the Study

The objectives of the present pilot study are:

- i. To examine the level of employability skills among senior secondary students studying under a skill-based curriculum.
- ii. To assess the effectiveness of skill-based curriculum in developing key employability skills.
- iii. To compare employability skills of students enrolled in skill-based courses with those in traditional academic streams.
- iv. To identify students' perceptions regarding the usefulness of skill-based education for employment.
- v. To identify challenges in the implementation of skill-based curriculum at the senior secondary level.

6. Research Questions

1. What is the level of employability skills among senior secondary students in Jamshedpur?
2. How effective is the skill-based curriculum in enhancing employability skills?
3. Is there a significant difference in employability skills between skill-based and non-skill-based students?
4. What are the perceptions of students regarding skill-based education?
5. What challenges are faced by schools in implementing skill-based curriculum?

7. Operational Definition of Key Terms

- 1) **Skill-Based Curriculum:** A curriculum that emphasizes practical skills, vocational training, and industry-relevant competencies alongside academic knowledge.
- 2) **Employability Skills:** A set of skills including communication, teamwork, problem-solving, adaptability, self-management, and technical skills that enhance an individual's ability to gain and sustain employment.
- 3) **Senior Secondary Students:** Students studying in Classes XI and XII in recognized senior secondary schools.

8. Scope and Delimitations of the Study

The study is limited to selected senior secondary schools in Jamshedpur. Only students studying in Classes XI and XII are included. The focus is restricted to employability skills developed through skill-based curriculum. As a pilot study, the sample size is limited, and findings cannot be generalized beyond the selected area.

9. Research Methodology

Research methodology provided a systematic framework for conducting the study in a scientific and objective manner. It outlined the procedures, tools, and techniques that were used to collect and analyse data in order to achieve the stated objectives of the study. The

present pilot study adopted an appropriate methodology to examine the effectiveness of the skill-based curriculum in enhancing employability skills among senior secondary students in Jamshedpur.

a) Research Design

The study followed a **descriptive survey method**, which was suitable for obtaining detailed information about existing conditions, practices, and perceptions related to skill-based education and employability skills. This research design enabled the researcher to describe, compare, and analyse the existing level of employability skills among students enrolled in different academic streams. The descriptive survey method was considered appropriate for educational research as it allowed for the collection of both quantitative and qualitative data without manipulating any variables. In this pilot study, the design helped in identifying trends, differences, and relationships between exposure to skill-based curriculum and the development of employability skills.

b) Sample

The sample for the study consisted of **50 senior secondary students** studying in Classes XI and XII from selected senior secondary schools in Jamshedpur. A **random sampling technique** was used to ensure that each student had an equal opportunity to be included in the study, thereby minimizing sampling bias and improving the reliability of the findings.

The sample was divided into two groups:

- **25 students from skill-based/vocational streams**, who were exposed to practical and industry-oriented subjects.
- **25 students from traditional academic streams**, who primarily followed theory-based curricula.

This grouping facilitated a comparative analysis of employability skills between students exposed to skill-based education and those from traditional academic streams.

c) Tools Used

Two tools were used for data collection:

1. **Employability Skills Questionnaire (Self-Developed):** This questionnaire was developed to measure key employability skills such as communication, teamwork, problem-solving, adaptability, self-management, and basic technical skills. It consisted of structured statements rated on a Likert scale, which enabled students to indicate their level of agreement.
2. **Student Perception Scale on Skill-Based Curriculum:** This scale was used to assess students' perceptions, attitudes, and awareness regarding the relevance and usefulness of the skill-based curriculum for employment and career readiness. It helped in understanding students' views on practical learning, industry relevance, and future career prospects.

Both tools were validated through expert opinion to ensure content validity and clarity.

d) Data Collection

Data was collected through the direct administration of questionnaires to the selected students. Clear instructions were given to ensure accurate and unbiased responses. Adequate time was provided for completing the questionnaires, and confidentiality of responses was maintained throughout the process.

In addition to quantitative data, informal discussions with teachers teaching skill-based and academic subjects were conducted to obtain qualitative insights. These discussions provided information on teaching practices, student participation, challenges in implementing skill-based curriculum, and perceived outcomes of skill-based education.

e) Statistical Techniques

The data collected was analysed using appropriate statistical techniques:

- **Percentage analysis** was used to describe response patterns.
- **Mean and standard deviation** were calculated to determine the average level and variability of employability skills.
- **Comparative analysis** was carried out to examine differences between students from skill-based and traditional academic streams.

These statistical techniques helped in drawing meaningful conclusions regarding the effectiveness of the skill-based curriculum and supported the objectives of the pilot study.

10. Analysis and Interpretation of Data

The present section deals with the analysis and interpretation of data collected from senior secondary students to examine the effectiveness of the skill-based curriculum in enhancing employability skills. Data was collected using two tools, namely the Employability Skills Questionnaire (Self-Developed) and the Student Perception Scale on Skill-Based Curriculum. The collected data was systematically analysed using percentage analysis, mean, standard deviation, and comparative analysis to draw meaningful conclusions.

10.1 Tools Used for Data Collection

Two standardized tools were used for collecting data:

1. Employability Skills Questionnaire (Self-Developed)

This questionnaire was designed to assess key employability skills such as communication skills, teamwork, problem-solving ability, adaptability, self-management, and basic technical skills. The questionnaire consisted of structured statements rated on a five-point Likert scale ranging from Strongly Agree to Strongly Disagree. The tool enabled the researcher to quantify students' employability skill levels.

2. Student Perception Scale on Skill-Based Curriculum

This scale was used to assess students' perceptions, attitudes, and awareness regarding the relevance and usefulness of the skill-based curriculum for employment and career readiness. It included statements related to practical learning, confidence building, industry relevance, and future career opportunities.

Both tools were validated through expert opinion to ensure content validity, relevance, and clarity of statements.

10.2 Statistical Techniques Used

The data collected was analyzed using the following statistical techniques:

- **Percentage Analysis** to describe response patterns
- **Mean and Standard Deviation** to determine the average level and variability of employability skills
- **Comparative Analysis** to examine differences between students from skill-based and traditional academic streams

10.3 Analysis of Employability Skills Questionnaire

Table 1: Mean and Standard Deviation of Employability Skills of Skill-Based Stream Students (N = 25)

Employability Skills	Mean Score	Standard Deviation
Communication Skills	4.10	0.52
Teamwork Skills	4.05	0.48
Problem-Solving Skills	3.95	0.55
Adaptability	4.00	0.50
Self-Management	3.90	0.60
Basic Technical Skills	4.20	0.45
Overall Mean	4.03	0.52

Analysis and Interpretation

The above table shows that students enrolled in skill-based curriculum demonstrated high levels of employability skills. The highest mean score was observed in basic technical skills (4.20), indicating strong practical exposure and technical competence among skill-based students. Communication skills (4.10) and

teamwork skills (4.05) also recorded high mean values, suggesting that collaborative learning and interactive teaching methods were effectively enhancing soft skills. The relatively low standard deviation across all skill areas indicated consistency in skill development among students. Overall, the findings suggested that the skill-based curriculum positively influenced the employability skills of students.

Table 2: Mean and Standard Deviation of Employability Skills of Traditional Academic Stream Students (N = 25)

Employability Skills	Mean Score	Standard Deviation
Communication Skills	3.20	0.65
Teamwork Skills	3.10	0.70
Problem-Solving Skills	3.25	0.68
Adaptability	3.00	0.72
Self-Management	3.30	0.60
Basic Technical Skills	2.90	0.75
Overall Mean	3.13	0.68

Analysis and Interpretation

The data revealed that students from traditional academic streams demonstrated moderate levels of employability skills. Self-management skills recorded the highest mean score (3.30), indicating that these students were relatively disciplined and academically focused. However, basic technical skills showed the lowest mean score (2.90), reflecting limited practical exposure. Higher standard deviation

values suggested variability in skill levels among students, possibly due to differences in personal motivation and extracurricular exposure. Overall, traditional stream students displayed stronger theoretical orientation but lacked essential practical and workplace-related skills.

10.4 Comparative Analysis of Employability Skills

Table 3: Comparative Mean Scores of Employability Skills

Employability Skills	Skill-Based Stream	Traditional Stream
Communication Skills	4.10	3.20
Teamwork Skills	4.05	3.10
Problem-Solving Skills	3.95	3.25
Adaptability	4.00	3.00
Self-Management	3.90	3.30
Basic Technical Skills	4.20	2.90

Analysis and Interpretation

The comparative analysis clearly showed that students from skill-based curriculum outperformed traditional stream students in all employability skill dimensions. The most significant difference was observed in basic technical skills and adaptability, highlighting

the impact of hands-on learning and real-world exposure. Skill-based students demonstrated greater confidence in handling real-life work situations, working in teams, and adapting to changing tasks. In contrast, traditional stream students exhibited limited exposure to practical environments, which affected their workplace readiness.

10.5 Analysis of Student Perception Scale

Table 4: Percentage Distribution of Students' Perception towards Skill-Based Curriculum (N = 25)

Perception Statements	Agree (%)	Neutral (%)	Disagree (%)
Skill-based education improves job readiness	88%	8%	4%
Practical learning enhances confidence	92%	4%	4%
Curriculum is relevant to industry needs	84%	12%	4%
Skill-based learning improves career awareness	90%	6%	4%
Skill-based subjects are more engaging	86%	10%	4%

Analysis and Interpretation

The percentage analysis revealed highly positive perceptions among students towards the skill-based curriculum. A large majority of students agreed that skill-based education enhanced job readiness, confidence, and career awareness. The high agreement percentages indicated that students recognized the relevance of skill-based learning to real-world employment.

Very few students expressed disagreement, which may be attributed to limited exposure or personal preferences for academic subjects. Overall, the findings suggested strong student acceptance and perceived value of skill-based education.

10.6 Overall Interpretation of Findings

The analysis of collected data revealed that students enrolled in the skill-based curriculum demonstrated higher levels of employability skills compared to students from traditional academic streams. Skill-based students showed stronger communication abilities, problem-solving skills, teamwork, adaptability, and technical competence. They also exhibited greater confidence in handling workplace situations and a higher level of awareness regarding career opportunities.

Students from traditional streams displayed stronger theoretical knowledge but lacked sufficient practical exposure and workplace readiness. The findings confirmed that the skill-based curriculum had a positive impact on employability skills and supported the objectives of the pilot study.

Conclusion of Analysis

The use of appropriate statistical techniques such as percentage analysis, mean, standard deviation, and comparative analysis enabled systematic interpretation of the data. The findings clearly indicated the effectiveness of skill-based curriculum in enhancing employability skills among senior secondary students. The results provided strong empirical support for the inclusion and expansion of skill-based education at the senior secondary level and laid a solid foundation for further large-scale research.

11. Major Findings of the Pilot Study

The major findings of the present pilot study were derived from the analysis and interpretation of data collected through the Employability Skills Questionnaire and the Student Perception Scale on Skill-Based Curriculum. These findings were closely aligned with the stated objectives of the study and provided meaningful insights into the effectiveness of skill-based curriculum at the senior secondary level in Jamshedpur.

Based on the first objective, which aimed to examine the level of employability skills among senior secondary students studying under a skill-based curriculum, the findings revealed that students enrolled in skill-based and vocational streams possessed a comparatively high level of employability skills. These students demonstrated strong communication skills, effective teamwork, adaptability, and basic technical competencies. The mean scores obtained by skill-based students indicated that practical learning experiences significantly contributed to the development of job-related skills. This finding suggested that the skill-based curriculum was successful in equipping

students with essential skills required for employment.

In relation to the second objective, which focused on assessing the effectiveness of the skill-based curriculum in developing key employability skills, the study found that the curriculum had a positive and significant impact on students' overall employability. Skill-based students showed better problem-solving ability, higher confidence levels, and improved self-management skills. The integration of hands-on activities, project work, and practical training within the curriculum enhanced students' readiness to handle real-life work situations. This finding clearly established the effectiveness of skill-based education in bridging the gap between academic learning and workplace requirements.

Addressing the third objective, which sought to compare employability skills between students enrolled in skill-based courses and those in traditional academic streams, the study revealed a noticeable difference between the two groups. Students from skill-based streams consistently outperformed traditional stream students across all employability skill dimensions. While traditional academic students exhibited stronger theoretical knowledge, they lacked adequate practical exposure and workplace readiness. This comparison highlighted the advantage of skill-based education in preparing students for employment-oriented roles.

With reference to the fourth objective, which aimed to identify students' perceptions regarding the usefulness of skill-based education for employment, the findings showed a highly positive attitude among skill-based students. Most students perceived skill-based education as relevant, engaging, and beneficial for career development. They reported increased awareness of career opportunities, greater confidence in their abilities, and improved motivation towards employment or entrepreneurship. These perceptions reinforced the importance of skill-based curriculum in shaping positive career aspirations.

Finally, based on the fifth objective, which focused on identifying challenges in the implementation of skill-based curriculum, the

study revealed several limitations. Lack of adequate infrastructure, insufficient training of vocational teachers, and limited access to modern equipment were identified as major challenges. Despite Jamshedpur being an industrial city, industry exposure through internships, industrial visits, and partnerships was found to be limited. These challenges indicated the need for stronger institutional support and industry collaboration.

In conclusion, the major findings of the pilot study confirmed that skill-based curriculum significantly enhanced employability skills, job readiness, confidence, and career clarity among senior secondary students, while also highlighting critical challenges that need to be addressed for effective implementation.

12. Educational Implications

The findings of the present pilot study carried several important educational implications for schools, teachers, policymakers, and other stakeholders involved in senior secondary education. Since the study established that skill-based curriculum positively influenced employability skills, it underscored the need to strengthen and systematically implement skill-based education at the school level.

First, schools needed to strengthen the skill-based curriculum with adequate infrastructure. The study indicated that practical exposure and hands-on learning significantly enhanced students' employability skills; however, many schools lacked well-equipped laboratories, workshops, tools, and digital resources. Therefore, schools were required to invest in appropriate infrastructure such as vocational labs, simulation rooms, and modern equipment aligned with industry standards. Adequate infrastructure would enable students to practice real-world skills and bridge the gap between theoretical learning and practical application. Improving physical and technological resources would also increase student engagement and learning outcomes.

Second, the study highlighted the importance of teacher training programs focusing on vocational pedagogy. Effective implementation of skill-based curriculum depended largely on

the competence and preparedness of teachers. The findings suggested that many teachers handling vocational subjects lacked specialized training and industry exposure. Hence, regular professional development programs, workshops, and refresher courses were essential to equip teachers with modern vocational teaching methods, assessment techniques, and industry-relevant knowledge. Teacher training should emphasize experiential learning, project-based instruction, and competency-based assessment to ensure that employability skills were effectively developed among students.

Third, the study emphasized the need for stronger school–industry collaboration. Despite Jamshedpur being an industrial city, industry exposure for students was found to be limited. Educational institutions needed to establish formal partnerships with local industries, manufacturing units, and service organizations. Such collaboration could facilitate internships, industrial visits, guest lectures, apprenticeships, and real-time projects. Industry involvement would ensure curriculum relevance, provide students with practical insights into workplace expectations, and enhance their job readiness. Strengthening school–industry linkages would also help align skill-based education with local employment opportunities.

Fourth, the findings suggested that career guidance and counseling should be integrated with skill education. Many students lacked clear awareness of career pathways associated with skill-based courses. Systematic career guidance programs would help students understand employment opportunities, skill requirements, and future career prospects. Counseling services could assist students in making informed career choices based on their interests, aptitudes, and skills. Integration of career guidance with skill education would enhance career clarity, motivation, and long-term employability.

Overall, the educational implications of the study stressed the need for a holistic approach involving curriculum reform, teacher capacity building, infrastructure development, industry collaboration, and career guidance to maximize the benefits of skill-based education.

13. Limitations of the Pilot Study

Like any empirical investigation, the present pilot study had certain limitations that needed to be acknowledged while interpreting the findings.

One major limitation of the study was the **small sample size**. The study included only 50 senior secondary students, which restricted the generalizability of the findings. Although the sample was sufficient for a pilot study, it did not represent the larger population of senior secondary students.

Another limitation was the **limited geographical area**. The study was confined to selected senior secondary schools in Jamshedpur. Educational practices, infrastructure, and industry exposure may vary across regions; therefore, the findings could not be generalized to other districts or states.

Time constraints also posed a limitation. Due to limited time, the study could not include in-depth qualitative methods such as detailed interviews or longitudinal observations, which might have provided richer insights into skill development processes.

Additionally, the study relied on **self-reported data** collected through questionnaires. Such data may be influenced by students' perceptions, social desirability, or response bias, which could affect the accuracy of responses.

These limitations indicated that the findings should be interpreted with caution and primarily used to guide further large-scale research.

14. Suggestions for Further Research

Based on the findings and limitations of the present pilot study, several suggestions were proposed for future research.

First, large-scale comparative studies across districts could be undertaken to examine the effectiveness of skill-based curriculum in diverse socio-economic and regional contexts.

Such studies would enhance the generalizability of findings and provide broader insights into regional variations in skill development.

Second, longitudinal studies were recommended to track students' employability outcomes over time. Following students from senior secondary education into higher education or employment would help assess the long-term impact of skill-based curriculum on career success and job sustainability.

Third, teacher-focused studies on vocational education could be conducted to examine teachers' competencies, training needs, attitudes, and challenges in implementing skill-based curriculum. Such research would provide valuable inputs for designing effective teacher training and support systems.

Finally, gender-based analysis of employability skills was suggested to understand differences in skill development, career aspirations, and employment opportunities among male and female students. This would help in designing inclusive skill-based education policies that address gender disparities.

In conclusion, while the present pilot study provided valuable insights into the effectiveness of skill-based curriculum, further research was essential to deepen understanding, improve implementation, and strengthen the role of skill-based education in enhancing employability among senior secondary students.

Conclusion

The pilot study highlights the growing importance of skill-based curriculum in enhancing employability skills among senior secondary students in Jamshedpur. The findings indicate that skill-based education equips students with essential competencies required for the modern workforce and bridges the gap between education and employment. Despite certain challenges, the integration of skill-based curriculum holds immense potential in preparing youth for sustainable livelihoods. The pilot study provides a strong foundation for a comprehensive research study and

underscores the need for systemic support to strengthen vocational education at the school level.

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THE EVOLUTION OF INDIGENOUS MEDICAL SYSTEM IN PRE-COLONIAL BENGAL

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Abstract

Indian traditional medicine, particularly Ayurveda and Unani, is renowned worldwide and has survived the ravages of time from ancient period down to the modern times. References to such medicine and medical system are available in abundance in ancient Indian literature as well as in religious scriptures. So vivid and efficacious was this medical system that it not only addressed the health ailments and diseases of our body but was also meant to cure mental problems illness. Thus, to ensure both mental and physical well- being of people was what the package of Indian traditional medicine always offered which in essence was quite different from the philosophy of western medicine where the focus of treatment was centered round the body rather than on the mind. But mind and body in unison constitute the essence of well-being of an individual and this has of late received recognition from the World Health Organization (WHO). In this paper an attempt has been made to discuss at length different dimensions of traditional medicine in pre-colonial Bengal with emphasis on how Indian traditional medicine, particularly Ayurveda and Unani came into being in Bengal and thereafter flourished in different centuries. It appears paradox that while massive political and economic changes accompanied the succession of rulers and ruling dynasties during both ancient and medieval periods, the practice of traditional medicine, particularly Ayurveda and Unani have continued unabated in Bengal for centuries without a break until the intervention of the colonial medical system which pushed the practice Indian traditional medicine to the margins.

Key words: Indigenous medicine, Ayurveda, Charaka Samhita, Sushruta Samhita, Unani medicine, Tols and Chatuspathis, Allopathic treatment.

The glorious past of Ayurveda, one of the fields of traditional medicine, attracted the attention of Indian historians and researchers. In this regard, we will try to look at several previous research work. H.E. Sigerist through his research, provides a completely new perspective on the history of indigenous medical systems. R.C. Majumder has shown that the importance of indigenous medical systems had diminished due to the greater emphasis on western medicine introduced in the country during British rule. Brahmananda Gupta's research reveals that the colonial regime had a paternalistic attitude towards the medical system in the country. P. Kutumbiah has attempted to high light on the origins, developments and interrelationship of ancient Indian medicine and its role in the evolution of medicine. David Arnold and Poonam Bala have mainly focused on the official view of

Ayurveda during the colonial era. Neshat Quaiser (2000) tries to discuss the interaction between Western and Ayurveda medical system as well as Western and Unani medicine. Seema Alavi (2005) traces the confrontation of Unani medicine with western medicine in Northern India in nineteenth century. Recently Madhulika Banerjee (2009) through her research has analyzed various aspects of Ayurveda and tried to impose insights on its various branches.

Bengal occupied a special place in the origin and evolution of Ayurveda, one of the fields of traditional medicine in ancient times. During this time Bengal's contribution in the field of basic research in Ayurveda was immense. Later, in the Middle Ages, Ayurveda lovers in many cases managed to keep their Ayurveda practice intact as a family. As a researcher, I

have tried to find out in this article whether Ayurveda was able to maintain its former position despite opposition from the government on one side and allopathy on the other during the colonial period. Ayurveda spread from Bengal to other parts of India. So, in this article, I have tried to analyse the origin and evolution of Ayurveda as one of the fields of medicine in the country, from the ancient times to the colonial period. As the aim of the research article is to explore specific areas in the history of medicine and to look back on the glorious past of the indigenous medical system, the limitations of this approach must be brought into relation with modern society.

Indian traditional medicine particularly Ayurveda is an icon of Indian science and philosophy ever luminous in the world. It is an integrated medical system and is believed to have resulted from the age-old pursuit of Indian sages. The word Ayur-Veda, in the etymological sense, is composed of two root words, namely 'Ayur' that stands for life and longevity and 'Veda' means knowledge or science. That is, the knowledge about life is known as Ayurveda. Indeed, the development of medical science in ancient Indian in the form of Ayurveda proves that the concern for life and longevity among the people of ancient India was as intense as they have been in present times. However, ancient Indian society being less 'materialistic' and more 'natural' Indian traditional medicine differed widely from today's medical system in terms of medicinal composition, technique of treatment and the underlying philosophy of the use of medicine. In fact, Ayurveda is not only considered as science but also a manual to get rid of fever and achieve complete health and longevity.¹ This manual of keeping one's body and mind fit and active are available in Hindu scriptures. The sages of ancient times have said in the context of Ayurveda that the correct knowledge of the symptoms and remedies of unknown diseases can be obtained in three scriptures. A very large list of diseases and ailments that are commonly found in the bodies of both, the healthy and the sick, are available in three volumes called Trikantha. Together they constitute Ayurveda. The myth surrounding the origin of the Ayurveda can be had in the Puranas. According to the Puranas, Lord Brahma was the first to

teach Ayurveda to Prajapati Daksha, and Indra received that education from Daksha. Later, when Indra gave that education to the sages, Ayurveda education came into being and flourished all over the world.² However, many scholars of ancient India have identified Ayurveda not only as a medical subject but also as a scripture for salvation. According to Maharshi Charaka, "Ayurveda is the most sacred science of life, beneficial to human beings both in this world and the world beyond".³

Ramesh Chandra Majumdar, a famous historian of ancient India has once commented that "Ayurveda can also be called an encyclopedia". "Ayurveda as has been said earlier is not limited to mere medical knowledge. It wants that all men should be healthy fit in body and keen in minded. They should maintain this state as long as possible, the ultimate end being the achievement of happiness and spiritual elevation. To achieve this objective Ayurveda developed in it a comprehensive Encyclopedia of knowledge..... mastery of Ayurveda presupposes knowledge in all these fields".⁴ H.E. Sigerist in this context, has said that, "It would be a mistake to assume that Indian medicine in the Vedic period was only magical and religious. Like all archaic medicine it also had empirical and rational elements."⁵

However, there is a considerable disagreement among scholars as to whether Ayurveda was dependent on all the Vedas in the judgment of antiquity or was dependent only on the Atharva Vedas. In ancient times, Maharshi Byasadeva referred to Ayurveda as an adjunct to the Rig Veda. Agreeing with Sushruta, Bagbhatta also considered Ayurveda to be an adjunct to Atharva Veda. Dallan, a commentator on Sushruta, refuses to call Ayurveda an appendage of the Vedas. Because it is filled with one goal and six thousand mantras. But Ayurveda is not a separate Veda. Regarding the origin and development of Ayurveda it is said that Ayurveda Shastra is the real form of research work on the way to eradicate various diseases that hinder the practice of austerities, studies, fasting, celibacy, etc.⁶ In ancient times it was however not considered as a distinct scripture. Later on, during the classical period and between (1000 - 800 BC) gradually people

came to know it as a distinct scripture replete with references of diseases, ailments medicines and art of well-being. So, Ayurveda can be identified as Vedanga. In ancient times those who studied Ayurveda Sastra and followed the path of treatment were called as Vishak, Vaidya and Kaviraj in the society. However, according to the Ayurvedic scriptures, since Kaviraj was identified as a qualified physician, it was also known as Kaviraji medical system in ancient India.⁷ According to the Charaka Samhita, in ancient times Ayurveda medicine was practiced by people of different races, castes and religions and was not exclusively confined to the Brahmins. In ancient times people suffered from many myths and beliefs with regard to the origin of diseases. They believed in inimical ghosts and malevolent spirits, including wrath of God and supernatural phenomena responsible for their death, diseases, ailments and sufferings. Anything that disturbed the normal course of life, be it in the form of sickness, disease or a natural calamity was conceived as unnatural by people.⁸ The popular belief was that natural elements like trees, hillocks, etc., could be 'possessed' by evil spirits and people negotiating those natural elements might become victims of death or disease. According to F.H. Garison, Ayurvedic medicine, in ancient times, embodied alongside administering herbal medicine, activities such as, chanting of mantras, ogling hymns in high voice, hypnoticism and offering animal sacrifice to propitiate gods and spirits. Even help of religious experts, such as pirs, fakirs, ojhas, Kaviraj's and others were sought for cure from such health problems.⁹

The knowledge of Ayurveda seems to have evolved in three stages. The first stage may be attributed to the stage of gods or Divyakala, when, according to Indian mythology, Lord Brahmaha and Lord Indra had played their role in the origin and spread of the knowledge of Ayurveda. Then came the age of the sages, such as the age of Rishi Bharadwaj and Atreya and finally the age of composition of Samhita and Tikavasya when the knowledge of Ayurveda became widespread among people.¹⁰

It is said that the first holy Ayurveda Shastra was written by Brahma, the perceived creator of this universe, for the prevention and cure of

diseases of the heavenly beings. We find a detailed reference to it in Brahma Vaivarta Purana. In this text even medicine for reattaching severed head was hinted and there was a narrative on how different gods and their associates, including Devaraja Indra suffering from various ailments were cured by Ayurveda medicine. This precious knowledge, it is said in Indian mythology, was relayed down by Brahma to Prajapati Daksha and from him to two Asvini Kumar's. Sometime later, Devraj Indra learned this valuable knowledge of Ayurveda from two Asvini Kumar's and tried to apply it.¹¹

Indian mythological tradition has further pointed out how the rishis and sages came to possess the knowledge of Ayurveda. It is believed that Maharshi Bharadwaj obtained knowledge about Ayurveda from Indra and gave a detailed explanation at the Conference of Sages and ascetics at Himavath Sabha. Maharshi Dhanvantari was believed to have attended that meeting. He got his knowledge on Ayurvedic surgical treatment from Rishi Bharadwaj at that time. The popular belief among scholars was that during the period under discussion, one named Kashiraj Dibyadas had mastered the knowledge of Ayurvedic Surgical Treatment by appearing in person before Maharshi Dhanvantari. He had an ashram in Kashi and spent the last days of his life in the ashram. In other words, in Ayurveda, chalk was made possible by Maharshi Bharadwaj.¹² However, after Dhanvantari, Agnivesh, Vel, Charaka, Sushruta, Harit and Kharpani became experts in Ayurveda. It is said that in ancient times the second meeting of the sages took place in the Himalayas and it was decided in that meeting that sage Bharadwaj would be sent to India so that he could master the science of Ayurveda and spread that precious knowledge among other sages.¹³ According to popular belief, in ancient times Maharshi Atreya, seeing the outbreak of disease in his surroundings, ascended to heaven to meet Devaraja Indra and he wrote a Samhita after getting immense knowledge in the field of Ayurveda from Devaraja Indra.¹⁴ It is pertinent to mention that in the second conference of the Sages held in the Himalayan hills, those who learned Ayurveda from rishi Bharadwaj were Atreya, Vasishta, Mandabva and Kashyap.

However, all these sages did not keep their knowledge of Ayurveda confined to themselves but spread it among their disciples to cure ailments suffered by mankind. The Ayurvedic teacher taught six disciples such as Sage Atreya Agnivesh, Vel, Yotukarna, Parashar, Harit and Kharpani and Dhanvantari Sushruta, Upadhenur, Warbra, Puskalabat, Vaitaran and Gopurbakshita. Although all these sages later expressed their valuable knowledge in the form of Samhita, the Charaka Samhita written by Agnibesh and Susruta Samhita written by Sushruta gained considerable respect and recognition as the real text of traditional medical system. Besides, sage Dhanvantari also acquired considerable respect and popularity as expert in ancient Indian medical system.¹⁵

However, there is a difference of opinion among historians regarding the origin of Ayurveda. Although Ayurveda became a coherent medicine in the classical period i.e. between 1000 - 800 BC, many scholars estimate that it got off to a good start in the intervening period between 2800 - 2700 BC. Maharshi Bharadwaj described Ayurveda in the period between 2500 - 2400 BC and Charaka Samhita & Susruta Samhita were composed in the period between 1100-1000 BC & 0-100 AD. But according to P. Kutumbiah, Ayurveda was started between 800-600 BC.¹⁶ It is pertinent to note that during the time of the Aryans, all those who had mastered the science of Ayurveda wrote the Samhita one after another. But it is very difficult to determine the date of their composition, including the names of the authors. Because at that time, the identity of more than one scholar was found under the same name. For example, according to the history of ancient India, two Charaka and two Sushrutas are mentioned. In addition, there are references in history to several authors named Baghbhatta and Nagarjuna, and there is considerable confusion among the common people about Jibak and Atreya. Not only that, according to the legend, Shukracharya had mastered the science of Ayurveda and according to his name, this treatment has been called Kabiraji.¹⁷ So, it is very difficult to determine the real origin of Ayurveda and the real identity of the authors of the original scriptures on Ayurveda and their exact period. However, it is a known fact in history that the

four Vedas and the other fragments of Vedic literature including Ayurvedic scriptures are the products of hundreds of years of pursuit by ancient sages and composers and were not a creation of a particular master.

The collection period of Ayurveda refers to the later Vedic period. During this period, we did not find any special basic work based on Ayurveda. However, several Samhita and Tika commentaries were written during this period that gradually became an integral part of Ayurveda literature in course of time. For example, Agnivesh, Charaka and Pranjadrirabal each enriched the Charaka Samhita through their own commentaries. The Sushruta Samhita, on the other hand, was enriched by joint efforts of the younger Sushruta and Nagarjun.¹⁸ The Charaka Samhita helps to know the details of the diseases and their nomenclature. It also contains detailed information about the diagnosis of diseases and their proper treatment. The Sushruta Samhita describes surgery.¹⁹ At the same time, the Bhela Samhita was revised and modified by leading scholars such as Bhela, Bher and Bhaluki. In addition, the old Baghbhatta wrote the Astanga Hridaya Samhita. It is a combination of Charaka, Sushruta and Bhela. The younger Baghbhatta composed the Astanga Samgraha.²⁰ It is a collection of medical fertilizers, the ingredients of which are basically both Charaka and Sushruta Samhita used as important material for the practitioners of Ayurveda Shastra to understand the development of medical theory and practice.²¹

Nagarjuna composed by Ras Ratnakar which was a product of his own research work and knowledge of the Atharva Veda (Kaushik Sutra) and Ayurveda (Rasa Shastra). However, the manuscript of Navanitaka or Bower is the most important classic creation of this period which was composed in the fourth century with the help of four scriptures of Charaka, Sushruta, Bhela and Vasishta. In the 7th century, Madhavakara or 'Madhavacharya' based on the Charaka and Sushruta Samhita composed the disease exchange or diagnosis. Based on the Ras Shastra of Ayurveda, Mahamati Shri Gopal Bhatta composed Rasendra Sar Samgraha and Brindakunda composed Siddhiyoga'. Also referred to as Ayurveda's Metrika Medika is a

‘Drabyagun Sangraha’ written by Chakrapani Dutt which he composed on the basis of Ayurvedic medicine.²² It is pertinent to note that the Ras Shastra of Ayurveda improved from the time of Nagarjuna to the period of Chakrapani Dutta (ninth-eleventh century) and valuable books on ‘Ras Shastra’ were written during this period such as Rasratna Samuchaya, Rasendra Chintamani, Rasan Kshetra Malika, Rassar.

Medieval India began with the establishment of Muslim rule and this era was literally the era of translation and commentary. In the medieval period no further write-up came to be added to Ayurveda literature. The fear and panic caused by the Muslim invaders is believed to have impeded the creative atmosphere of India. Besides, royal patronage and incentive for such a high-quality creative science literature was also not forth coming. Moreover, during this period, India's economic development suffered a setback owing to the lack of central power. The practice of Ayurveda was further hampered when the traditional local institutions (temples, monasteries, tols, chatuspathis) were destroyed by the Muslim invaders. However, with the advent of the Mohammedans, Unani medicine came to India and the role of the Sultans of Delhi in this regard was commendable. So, during this period the Unani medical system had a profound effect on the traditional medical system. From this period, Delhi was established on a solid foundation with the patronage of the ruling community. In this atmosphere of change in the socio-political life of people (in both Bengal and India) the practice of Ayurveda lost its former glory and popularity as a result of the oppression and indifference of the ruling class.²³ Unani medicine, a combination of Greek, Indian, Egyptian, Persian and Chinese medicine, now sneaked into the lost ground of Ayurveda and left profound effect on Indian people. It was the first foreign medical practice for Indians. The role of the Arab scholars in inventing Unani medicine and making it popular worldwide was commendable. They did it in combination with their own experience and knowledge of the medical systems of other parts of the world to create a completely new form of medicine known as Unani medicine.

During the early middle age, the Arabs came in contact with different parts of the world and disseminated their knowledge of Unani medicine through conquest, evangelical acts and cultural exchange.²⁴ After the 7th century, when the Arabs advanced to various parts of the world to conquer and build trade-network they became acquainted with the Greek medical system. The Abbasid rulers were more proficient in Unani medicine than the Umayyad rulers, and during the Abbasid rule it was possible to translate the medical texts of many countries of the world into Arabic. Their encouragement was significant enough and spread around Baghdad (known since the time of Caliph Harun al-Rashid), known as the best translation center in the world. Moreover, like other countries of the world, Indian medical knowledge and works like Charaka Samhita (Sharak), Sushruta Samhita (Samard), Astanga Hridaya (Armory), Nidan (Badan or Yadan) and Siddhayoga (Siddhasana) were also translated. Unani medicine was enriched with the help of Arab scholars such as Hunaid Ibn Ishaq Khan, Arraji, Ibn Al-Jazar, and Manak (Manakka), Shalihabin Bhal (Shali), Kank (Konkayan) and many others.²⁵ Although no basic work on Ayurveda developed during this period, notable commentaries and translations were performed. Works like Dunduk Nath's 'Rasendra Chintamani', 'Rasendrasara' and Shangdhar's 'Shangdhar Sanhita', Shabdārtha Chandrika IV of Bagvatta, Bhavamishra's Bhabprakash deserve mention in this context. Of these, Dunduk Nath's book 'Rasendra Chintamani' is particularly noteworthy because there he discusses in detail the art of surgery treatment that can be imparted to students of medical science. Moreover, 'Mangalkavya', Padmavali literature and various books based on Ayurveda were translated into Arabic and Persian during this time.²⁶ Thus, it is clear from the descriptions of historians that three important aspects of Ayurveda and Unani medicine were noticed in medieval India, which made their mutual coexistence much easier. That is to say, the work of their compilation was emphasized, the emphasis was on the theory of Ras and the method of disseminating medical knowledge.²⁷

During the Sultanate period, the rulers of India provided substantial assistance to the

advancement of Unani medicine. Alauddin Khilji recruited Unani physicians to his court and set up private clinics to treat many sick common people. It is pertinent to mention that during his reign, forty-five Unani physicians were employed in various medical centers, including the royal court.²⁸ It is pertinent to mention that during his reign, forty-five Unani physicians were employed in various medical centers, including the royal court. In addition, Mohammad bin Tughlaq and Feroz Shah Tughlaq played a leading role in this field and they were experts in Unani medicine. During the Tughlaq period, 70 dispensaries were built in Delhi and about 1,200 Unani physicians were employed. On the other hand, Feroze Shah Tughlaq himself invented medicine with the help of Unani science to get rid of diseases like eye ailments. According to Ziauddin Barani, Maulana Badruddin Dimisky was the first Unani physician in India and the top two Unani physicians of that period were Jaja and Mahachandra Tabib. Unani medicine also flourished under the patronage of provincial rulers such as Sultan Zainul Abedin of Kashmir, Muzzafar Shah of Gujarat, Ibrahim Adil Shah II of Bijapur and Nawab Hussain Shah of Bengal. With the personal encouragement of each of them, the Hakims and Kabirajs were freely engaged in medical treatment at the royal court, such as - Shrivatta was the courtier of Zainul Abedin, Mukundadas Hussain Shah and Narsingh Saraswati was the courtier appointed to the court of Bahmani Sultan Alauddin Ahmed Shah. It is noteworthy that many valuable texts on Ayurveda were translated into Arabic and Persian during the reign of the above rulers.²⁹

As one of the founders of the Mughal Empire, Babar was personally a pioneer in the field of medicine and during his time he hired salaried physicians to run government hospitals. Researcher Poonam Bala, in her research work has provided us detailed information on the complete medical system and educational institutions, patronized by and developed under by the Mughals since the time of Emperor Babar.³⁰ Mohammad bin Yusuf Unani came under Humayun's notice by dint of his research in medical science and was identified as the coordinator of Greek, Arabic and Indian medicine. During the reign of Akbar, several

sanatoriums were built for helpless, common people and around Twentynine eminent Hindu and Muslim physicians were referred to by Abul Fazl. Notable among the Hindus were physicians like Kavichandra, Vidyaraja, Todarmal, Nilakantha and Bhavamishra. Hakim Al Jilani was known as Akbar's personal physician, who came from Persia, and Donna Huliaana (female physician) was notable as the physician of his heir. During the reign of Akbar, Bhabomishra gained considerable fame through his reference work Bhabprakash. It is said that the renaissance of Indian Ayurveda took place during the time of Akbar, since he encouraged compilation of Charak, Sushruta, Bagbhatta, Vrinda and Chakrapani, were reported to have diagnosed various incurable diseases and their remedies. In the Middle Ages, Bhabprakash was regarded as one of the best collections of all the good materials of Ayurveda. Akbar's son Jahangir ascended the masnad and presented a twelve-point medical program and during his reign an article on rabies and epidemics was published in Tuzuk-i-Jahangir. Hakim Sadra, a disciple of Hakim Jilani, one of the famous physicians of his royal court, was able to partially restore his sight by treating the blind Khasru. Due to which he got the title of Mosiul Jahan from Jahangir. Jahangir treated many helpless people during his reign. Emperor Shah Jahan built a huge sanatorium near the Jama Masjid in Delhi during his reign. At this time Ain-ul-Muluk, Hakim Mir Muhammad Hasim and Satiul Nisa Khans (female physician) were quite skilled in medicine. Emperor Aurangzeb's most notable achievement was the translation of many valuable Unani medical texts into Persian during his time. Aurangzeb's contribution to the publication of Tibbe Aurangzibi in Tibet based on the Ayurvedic scriptures was undeniable, and it was during his reign that Muhammad Akbar Ar Jani arrived in India, who were involved in Unani medicine. However, after the death of Aurangzeb, other rulers of the Mughal Empire also showed considerable interest in medicine. Some notable physicians of this time were Hakim Kawam Uddin, Hakim Haskandar (during Ahmad Shah reign) and Hakim Muhammad Sharif Khan during the reign of Shah Alam II.³¹ Apart from this, there is an example of Vaidya's or Kaviraj's being employed in the royal court for medical work.

During this period, junior Bagh Bhatta, Dallana Srikanth, Shivdas, Tarun Dutt, Vijay Rakshita, Indu, Bachaspati, Atmalla, Bhavmishra and others continued to practice Ayurveda on government and private initiatives. However, among them, the talent of Bhav Mishra as an Ayurvedic scholar was widely circulated. All these prove that the Mughal rulers promoted and patronized Ayurveda during their tenures and many Hindu Vaidya's or Kaviraj's were employed in government medical centers. Thus, the tradition of Ayurveda medicine was practiced by people even during the medieval period despite various adversities.³²

Allopathic medicine, an integral part of Western medicine was brought to India by the British during the Mughal rule. A number of European physicians were able to demonstrate their skills at the court of local rulers. Europeans came to India mainly for the purpose of trade and colonization. The Portuguese came first followed by other European companies. The British brought with them their medical system, the allopathic treatment which in course of time pushed the Indian indigenous medicine to the margins. The contributions of Dr. Hedge, Gabriel Bouton, Dr. Hasilton and others in popularizing allopathic medicine in India merit attention.³³ Many regional rulers, including kings, rajas and maharajas kept European physicians in their estates, as they could see the benefits of Western medical system, albeit to a lesser extent. As a result, the popularity of Ayurveda, one of the traditional medical systems in India, declined. However, some Vaidya families continued practice of Ayurveda privately at their home for generations. Even in native tols and chatuspathis elementary knowledge of Ayurveda was imparted. But on the whole this medical system gradually fell victim to government indifference. During this period Unani medicine as well as Western and Ayurvedic interactions and attempts to counter each other were noted.³⁴ Historian Ramesh Chandra Majumdar has however remarked that this indifference of the ruling elites towards Ayurveda was discernible ever since the medieval period, which, he termed as "Passive neglect of Ayurveda".³⁵ Eminent researcher R.N. Chopra has also commented that the Hindu Ayurvedic system of treatment was

rapidly thrown into the background by the Muslim conquerors.³⁶ Besides, the only obstacle to the practice of Ayurveda during the period in question was the fact that not all communities of Hindu society were involved in the practice of Ayurveda. Only the Brahmins and the Vaidyas could practice Ayurveda because of their ethnic superiority. Among the Vaidyas, one named Amboshatha Rai became famous as practitioner of Ayurveda in the late eighteenth century. The lower caste people in those days were deprived of the right to Ayurveda education. The Sudras and the Untouchable castes were not allowed to send their children to these institutions run by the Brahmin teacher.³⁷ In the Middle Ages, a total of 42 caste divisions were observed in Hindu society. Eminent historian A.L. Basham has however said that "The practitioners of these two systems (Ayurveda and Unani) seem to have collaborated because, each had much to learn from others. We have no record of animosity between the Hindus and the Muslims in the field of medicine."³⁸ So what is known on the basis of a review of contemporary history is that the practice of Ayurveda in the Sultanate period was in jeopardy but in the Mughal period the situation improved a little.³⁹ But during this period no basic work on the Ayurveda emerged, nor did this medical system improve much. However, some translation works and commentary on Ayurveda came up during this time. However, there was also a wide circulation of Ayurveda and Unani medicine in the Middle Ages, which enriched Ayurveda on the one hand, and became a source of embarrassment for Ayurveda on the other.⁴⁰ This is because the Unani physicians later claimed that the concepts of vascular science, medicine, chemistry, and blood were derived from the Unani medical system. Although scholars have expressed considerable doubts about the veracity of such an opinion, such a view is popular among the advocates of Unani medicine. But scholars of indigenous Ayurveda medicine, such as, Acharya Prafulla Chandra Sen, Gananath Sen and others have rejected this claim. In the nineteenth century, the popularity of the Unani medical system declined significantly with the arrival of Western medical system in north India. So, a new Unani or Hakim theory was placed with less emphasis

on the mysteries and more on the practice of medicine.⁴¹

Although Ayurveda, a part of the indigenous medical system since ancient times, has been able to maintain its tradition in the field of medicine, its journey has not been entirely smooth. My research, however shows that before the arrival of Europeans in India, traditional medicine like the Ayurveda and Unani both were quite popular among Indian masses.

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A STUDY ON AWARENESS TOWARDS ONLINE SELLING OF BEAUTY & PERSONAL CARE PRODUCTS

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Abstract:

The growth of e-commerce has significantly influenced consumer purchasing behavior, particularly in the beauty and personal care segment. This study aims to examine the level of awareness towards online selling of Beauty and Personal Care products and to analyze the key sources of information influencing such awareness. The primary data were collected from 150 respondents in Bhopal city using a structured five-point Likert scale questionnaire, while secondary data were sourced from published journals, industry reports, and credible online resources. Regression analysis was employed to assess the impact of awareness factors such as product variety, product knowledge, and payment methods.

The Findings show that awareness of secure payment systems and flexible payment options such as EMI and “Buy Now Pay Later” significantly influence consumer awareness, while some product-related factors show limited impact. Additionally, a secondary-data-based analysis identifies social media as the most influential source of awareness, followed by influencer marketing and online reviews and ratings. Advertisements contribute to initial awareness but are less effective compared to interactive and experience-driven information sources. The study concludes that consumer awareness towards online Beauty and Personal Care products is strongly shaped by payment security and digital information channels, highlighting the growing importance of trust and engagement in online retail environments.

Key Words: awareness, cosmetics, beauty products, online selling.

Introduction:

Beauty and Personal Care (BPC) market is becoming more complex due to a proliferation of newer, smaller, digitally native brands. In today’s era of digitization, the barriers to entry to start and grow for a brand are lower than ever before, creating a competitive threat to even the most established players. As new beauty trends and customized products for different skin types are in the market place to fill consumer demand. To be successful, big-name Beauty

and Personal Care companies need serious e-commerce strategies designed to drive growth in this increasingly competitive environment. In order to understand this better consumer behavior study is very important. Consumer behavior is always different for different product categories. Same consumer may have different opinion for Automobile product and for Apparel and for Beauty and Personal Care products. Because every product is different and hits different psychology of consumer.

Beauty and Personal Care Products:

The term ‘Beauty Products’ refers to cosmetics or materials and devices made and sold for the purpose of enhancing the physical attractiveness of users. The term beauty products is often synonymously used with cosmetics and includes preparations applied externally to change or enhance the beauty of skin, hair, nails, lips, and eyes. ‘Personal Care

products’ includes products for the hair, oral hygiene products, shaving needs, cosmetics and bath products. In Beauty and Personal Care product category consumer gets from low range to very high range of products, from domestic to international level products and highly customized products. Huge competition because of D2C companies. Here is a well-structured table based on your provided industry highlights (source: Statista):

Table1 : Industry Highlights – Beauty & Personal Care Market (India, 2025)

Indicator	Key Insight	Details (2025 Estimates)
Market Revenue (India)	Total industry size	US\$ 33.08 billion
Growth Rate (CAGR 2025–2030)	Expected annual growth	3.48%
Largest Segment	Personal Care segment dominance	US\$ 14.80 billion
Global Comparison	Leading country by revenue	United States – US\$ 105 billion
Per Capita Revenue (India)	Average spending per person	US\$ 22.74
Online Sales Share	Contribution of e-commerce	9.4% of total revenue

Source: Statista Market Insights ([Statista](#))

Literature Review:

Substantial research has been conducted on the subject area.

Oberoi (2018) highlighted that the majority of cosmetic consumers fall within the age group of 15–25 years, with women constituting a significantly larger proportion of buyers. Through factor analysis, variables such as income, price, prior experience, trust, influence, and motivation were identified as major determinants of consumer decisions. Among these, trust emerged as the most significant factor as per the ANOVA test. The study further emphasized that cultural, social, and psychological factors uniquely shape individual choices, with social variables showing a particularly strong influence in cosmetic product purchases. Expanding on online shopping behavior, **Kamran, Asif, Shaukat, Ambreen, and Syed (2019)** observed that customers perceive the monetary value of online purchases to outweigh other benefits such as convenience or enjoyment. Their findings suggest that online shopping decisions are primarily guided by value

perception and material worth, rather than by social or recreational motivations.

Goel and Sharma (2020) investigated the role of brand perception in shaping buying intentions. Their research demonstrated that variables such as brand concept, adherence, product expertise, product association, product worth, and product features positively influence customer intentions to purchase. In another study, **Yadav (2020)** noted that a majority of consumers prefer online shopping over traditional retail and reported general satisfaction with online transactions. Commonly purchased products included electronics, clothing, and accessories. However, the study also revealed significant barriers, such as concerns over sharing credit card information, the inability to physically inspect products, higher perceived costs, delayed deliveries, and transaction difficulties.

Shilpa (2020) in her study explored the impact of demographics on factors influencing online shopping behaviour of consumers to find the most preferable demographical factors used by online consumers. Data was collected and

analyzed and it was found that education was the most important factor on the basis of result it was interpreted that professional qualified respondent mostly preferred digital shopping. Second most important factor that influencing customer online shopping was gender the ratio of male & female customer using digital shopping was equal followed by age, according to ranking order monthly income consist 4th ranking followed by occupation. Ranking order identified the preference levels of demographical factors. **Yadav S. & Singh D. (2020)** found that there is little or no significant impact of online advertisement towards buying behavior of the consumer. This may be due to most people still do not trust contents of online advertising. So, there is little or no significant impact of online advertisement towards buying behavior of the consumer. **Tanwar N. & Poswal R. (2024)** found that digital advertising on platforms like Instagram, Facebook, and shopping apps significantly affects consumer awareness and purchase decisions, indicating that online promotional strategies are crucial in building awareness and influencing online shopping behavior. **Mustaphi, B. M. (2025)** found that over 50% of surveyed respondents preferred online retailers for beauty purchases due to better accessibility, product variety, and convenience, and 78.4% made purchases influenced by social media advertisements — underscoring the strong role of digital marketing in raising consumer awareness about online beauty shopping.

Research methodology:

Objectives of study:

1. To study the awareness towards online selling of beauty and personal care products.
2. To analyze the sources of information influencing awareness about online Beauty and Personal Care products (social media, advertisements, influencers, reviews)

Objective: To study the awareness towards online selling of beauty and personal care products. **Sampling:** The study was conducted in Bhopal, the capital of Madhya Pradesh. A sample of 150 respondents was selected, comprising regular buyers of Beauty and Personal Care products through online platforms. The respondents were chosen using the simple random sampling method. **Tools for data collection and analysis:** Secondary data were collected from various sources such as the Internet, books, journals, and magazines. Primary data were collected using a five-point scale questionnaire. The collected data were tabulated in Microsoft Excel and analyzed using regression analysis.

Hypothesis:

H₀₁: There is no significant level of awareness towards online selling of beauty and personal care products with respect to product variety, product knowledge, and payment methods.

The above null hypothesis was tested and results were drawn.

Findings and Discussions:

Table 2: Model Summary^b

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Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	

The regression model examining the relationship between awareness factors—product variety, product knowledge, and payment methods—towards online selling of beauty and personal care products shows a very high explanatory power ($R = 0.979$, $R^2 = 0.959$). This indicates that 95.9% of the

variance in the dependent variable is explained by the predictors. The model is statistically significant ($F(10,139) = 327.867$, $p < 0.001$), confirming that, collectively, the awareness factors have a significant effect.

Given the high R^2 value and the significant F-change, the null hypothesis (H_{01}) stating that there is no significant level of awareness with respect to these factors is rejected. This

suggests that respondents' awareness regarding product variety, product knowledge, and payment methods is significantly associated with the dependent variable.

Table 3: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.076	10	15.608	327.867	.000 ^b
	Residual	6.617	139	.048		
	Total	162.693	149			

The ANOVA results indicate that the regression model is highly significant ($F(10,139) = 327.867$, $p < 0.001$). The large F-value, coupled with the very small p-value, confirms that the combined predictors—awareness related to product variety, product knowledge, and payment methods—explain a

statistically significant proportion of the variance in the dependent variable (Place of Residence). This provides strong evidence to reject the null hypothesis (H_{01}) and affirms that these awareness factors are significantly associated with the outcome variable.

Table 3: Regression Coefficients (Dependent Variable: Place of Residence)

Model	Variables	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	Sig. (p-value)
1	(Constant)	0.304	0.076	—	3.996	0.000
	Awareness of wider variety online vs offline	0.060	0.067	0.069	0.902	0.369
	Regularly checks brands/variants online	0.084	0.057	0.100	1.453	0.148
	Awareness of exclusive/limited-edition products	-0.049	0.063	-0.068	-0.771	0.442
	Awareness of detailed product descriptions	-0.110	0.064	-0.144	-1.705	0.090
	Awareness of customer reviews & ratings	-0.006	0.063	-0.006	-0.088	0.930
	Awareness of tutorials/blogs/videos	-0.389	0.062	-0.470	-6.306	0.000
	Awareness of multiple payment options	-0.025	0.059	-0.034	-0.428	0.669
	Awareness of Cash on Delivery (COD)	0.010	0.067	0.011	0.146	0.884
	Awareness of EMI / Buy Now Pay Later	0.535	0.061	0.761	8.716	0.000
	Awareness of secure payment systems	0.612	0.071	0.750	8.609	0.000

Notes:

- **Dependent Variable:** Place of Residence
- **Significant Variables ($p < 0.05$):**
 - Awareness of tutorials/blogs/videos
 - Awareness of EMI / Buy Now Pay Later
 - Awareness of secure payment systems

The coefficients table reveals the individual effect of each awareness variable on the dependent variable (Place of Residence). Among the predictors, three variables have statistically significant positive effects:

- Awareness of online beauty and personal care tutorials, blogs, and videos shows a significant negative association ($B = -0.389$, $\beta = -0.470$, $p < 0.001$).
- Awareness of EMI or “Buy Now Pay Later” payment facilities has a strong positive impact ($B = 0.535$, $\beta = 0.761$, $p < 0.001$).
- Awareness of secure payment systems also has a strong positive impact ($B = 0.612$, $\beta = 0.750$, $p < 0.001$).

The remaining variables—covering aspects of product variety, other product knowledge items, and payment options—do not show statistical significance at the 5% level, indicating that their contribution to predicting the dependent variable is not substantial in this model.

While the combined model is significant (as shown in ANOVA), the results suggest that awareness related to secure payment systems and flexible payment methods is most strongly associated with the dependent variable, whereas some elements of product variety and knowledge have limited predictive power. This leads to partial rejection of the null hypothesis (H_{01}), as only certain awareness factors are statistically significant predictors.

Table 4: Residuals Statistics^a

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.03	4.30	2.91	1.023	150
Residual	-.788	.546	.000	.211	150
Std. Predicted Value	-1.837	1.362	.000	1.000	150
Std. Residual	-3.614	2.501	.000	.966	150
a. Dependent Variable: PLACE OF RESIDENCE					

The residual statistics indicate that the predicted values for Place of Residence range from 1.03 to 4.30, with a mean close to the actual mean of 2.91, suggesting that the model's predictions align well with the observed data. Residuals range between -0.788 and 0.546, with a mean of zero, confirming that the model does not systematically overpredict or underpredict. The standard deviation of residuals (0.211) is relatively low, indicating minimal variation between predicted and actual values. Standardized residuals mostly lie within ± 3 , which implies that there are no severe outliers affecting the model's accuracy. Overall, the residual analysis supports that the regression model fits the data well without notable prediction bias.

Objective: To analyze the sources of information influencing awareness about online

Beauty and Personal Care products (social media, advertisements, influencers, reviews)

Tools for data collection and analysis;

The study is based entirely on secondary data. Data were collected from:

- Published research journals and articles
- Industry and market research reports
- E-commerce and digital marketing studies
- Credible online sources and company reports

A content analysis and comparative review approach were adopted to identify key information sources influencing consumer awareness.

Analysis:

1. **Social media:** Social media platforms are the most prominent source of awareness for online Beauty and Personal Care products. Visual demonstrations, product launches, and interactive content help consumers stay informed about new products and trends.
2. **Influencer Marketing:** Influencers and beauty bloggers play a significant role in shaping awareness through product reviews and tutorials. Their personal experiences and perceived authenticity increase consumer trust and awareness.
3. **Online Reviews and Ratings:** Customer reviews and ratings on e-commerce platforms contribute to awareness by providing real-user experiences. Consumers rely on these reviews to understand product effectiveness, quality, and safety.
4. **Advertisements:** Digital and traditional advertisements help in introducing products to consumers. However, literature suggests that advertisements alone are less effective without support from social media engagement and reviews.
5. **Word-of-Mouth:** Recommendations from friends and family complement digital sources and help reinforce awareness and confidence among consumers.

Findings: Social media is the most influential source of awareness for online Beauty and Personal Care products. Influencer marketing significantly enhances product awareness and credibility. Online reviews and ratings play a critical role in informed awareness. Advertisements act as an initial awareness tool but are less impactful than peer-driven sources. Consumer awareness is increasingly shaped by interactive and experience-based information sources.

Suggestions:

1. **Secure Payment Communication**
E-commerce platforms should emphasize and clearly communicate the availability

of secure payment systems. Since awareness of payment safety significantly influences consumer confidence, highlighting features such as encryption, trusted gateways, and fraud protection mechanisms can enhance trust in online purchases.

2. **Promotion of Flexible Payment Options**
Flexible payment facilities, including Equated Monthly Installments (EMI) and Buy Now Pay Later (BNPL) options, should be prominently promoted. These options are particularly important for high-value beauty and personal care products, as they reduce financial burden and encourage purchase decisions.
3. **Enhanced Social Media Engagement**
Brands should actively utilize social media platforms to engage consumers through interactive and informative content such as tutorials, live demonstrations, and Q&A sessions. Such strategies can improve product awareness and facilitate better understanding among potential buyers.
4. **Influencer Marketing Strategies**
Collaborating with credible and relevant beauty influencers can significantly enhance consumer awareness and trust. Influencers who provide transparent, experience-based reviews contribute to building authenticity and shaping positive purchase intentions.
5. **Visibility of Reviews and Ratings**
E-commerce platforms should ensure that authentic customer reviews and ratings are prominently displayed and easily accessible. This enables consumers to make informed decisions and increases overall transparency and credibility.
6. **Integrated Advertising Approach**
Advertisements should not function in isolation but be integrated with social media engagement and user-generated content such as reviews and testimonials. A cohesive and multi-channel advertising strategy can create stronger consumer awareness and reinforce brand messaging.

Limitation and scope of study:

The study was conducted in selected city of Madhya Pradesh with a sample of 150

respondents. The findings of study may not be generalized for other cities of the state and country. Further studies can be done on large sample size and comparative studies between demographic variables can also be done in future.

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AN EMPIRICAL STUDY OF GREEN FINANCE & ITS IMPACT ON ECONOMIC GROWTH IN INDIA

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Abstract

The objective of this study is to examine the impact of green finance on economic growth in India. The research analyzes key green financial instruments such as green bonds, green loans & green debt financing, which play a crucial role in promoting sustainable development while strengthening the Indian financial system. Green finance has emerged as an effective mechanism for channeling financial resources toward environmentally responsible investments, supporting economic expansion alongside ecological sustainability. The study employs both dependent & independent variables & statistical tools including mean, standard deviation & t-test are used to test the formulated hypotheses. The empirical results reveal that the adoption & growth of green finance in India have a significant & positive impact on economic growth. The findings highlight the importance of expanding green financial instruments to achieve long-term sustainable economic development in the country.

Keywords: Green Finance, Green Bonds, Green Loans, Green Debt Financing, Economic Growth

1. Introduction

Green finance refers to financial investments, loans & funding mechanisms that are specifically designed to support activities contributing to environmental protection, climate change mitigation & sustainable economic development. These financial resources are directed toward projects such as renewable energy generation, green infrastructure development, pollution control, sustainable transportation, energy efficiency & the adoption of eco-friendly technologies & services. In recent years, green finance has gained significant importance due to the growing global concern over environmental degradation, climate risks & unsustainable patterns of economic growth.

The increasing awareness among consumers, investors & policymakers regarding the adverse

impacts of environmentally harmful products & industrial practices has accelerated the demand for green financial solutions. Governments & financial institutions are now recognizing that traditional growth models, which often ignore environmental costs, are no longer viable in the long run. As a result, green finance has emerged as a strategic tool to balance economic development with environmental sustainability.

Green financing benefits both the economy & the environment by facilitating a smooth transition toward a low-carbon & resource-efficient economy. It promotes inclusive growth by expanding access to environmentally sustainable products & services for individuals, businesses & industries. By encouraging investments in clean technologies & sustainable infrastructure, green finance helps reduce carbon emissions, conserve natural resources & generate employment

opportunities. This dual impact on economic expansion & environmental protection creates what is often described as a “green multiplier effect,” where financial investments yield long-term social, economic & ecological benefits. In the Indian context, green finance plays a crucial role in supporting national commitments toward sustainable development, climate action & economic resilience. With rising energy demand, rapid urbanization & environmental challenges, India requires substantial financial resources to support green initiatives. Therefore, understanding the role & impact of green finance on economic growth is essential for formulating effective policies & strengthening the country’s financial system.

Types of Green Finance

Green Loans

Green loans are financial instruments provided to individuals or organizations for projects that improve environmental performance or promote sustainability. These loans are often offered at favorable terms when borrowers invest in energy-efficient buildings, sustainable housing, or environmentally responsible property development. Financial institutions encourage such investments by offering reduced interest rates or extended repayment periods to projects that meet established environmental standards. Green loans not only support sustainable construction & infrastructure but also help reduce long-term energy consumption & operating costs.

Green Credit

Green credit refers to loans specifically allocated for financing environmentally beneficial projects & activities. These include investments in renewable energy systems, electric vehicles, solar power installations, waste management solutions & energy-efficient appliances. Green credit plays a vital role in promoting clean energy adoption & reducing dependence on fossil fuels. By incentivizing environmentally responsible behavior among consumers & businesses, green credit supports sustainable production & consumption patterns while contributing to economic growth.

Green Bonds

Green bonds are one of the most significant sources of funding for large-scale environmental & climate-friendly projects. These bonds are issued by governments, financial institutions, or corporations & the funds raised are exclusively used to finance green projects such as renewable energy development, clean transportation systems, water conservation & biodiversity protection. Green bonds help mobilize long-term capital for sustainable investments & provide investors with an opportunity to support environmental objectives while earning stable financial returns.

Advantages of Green Finance

Green finance offers several economic & environmental advantages, making it a powerful instrument for sustainable development:

- **Creates Comparative Advantage:** Green finance enables countries & businesses to gain a competitive edge by promoting innovation, efficiency & sustainability in production processes.
- **Enhances Business Value:** Investments in green projects improve corporate reputation, reduce operational risks & attract environmentally conscious investors & consumers.
- **Encourages Technological Innovation & Green Infrastructure Development:** Green finance supports the adoption of clean technologies & the development of sustainable infrastructure, fostering long-term economic resilience.
- **Improves Economic Growth Prospects:** By generating employment, stimulating investment & reducing environmental costs, green finance contributes to sustainable & inclusive economic growth.

2. Literature review

Green finance has emerged as a critical component of sustainable economic development by facilitating the efficient allocation of financial resources toward

environmentally responsible activities through financial markets. It employs diverse instruments & policy mechanisms to accelerate the transition toward a green economy. Prior studies have extensively examined the role of green finance in promoting environmental sustainability & economic performance across different regions & economic structures.

He et al. (2019) emphasize the strategic importance of green credit by identifying it as a threshold variable in analyzing the relationship between renewable energy investment & green economic development in China. Their threshold effects model reveals that green credit significantly enhances the effectiveness of renewable energy investments once a certain development level is achieved. This study highlights the non-linear & conditional nature of green finance in driving sustainable growth.

Cigu (2020) argues that green finance, when supported by effective public policy frameworks, can successfully reconcile the objectives of environmental protection & economic expansion. The study underlines the role of government intervention in guiding financial flows toward sustainable sectors while maintaining macroeconomic stability.

Lee (2020) explores the contribution of green financial mechanisms to China's sustainable economic growth. The findings indicate that green financial instruments not only support environmentally friendly industries but also stimulate structural transformation & long-term economic resilience.

Zhang & Mei (2022b) employ panel data & Spatial Durbin Models (SDM) to examine the relationship between green finance & industrial pollution across 30 Chinese provinces. Their results demonstrate that green finance has a significant negative effect on industrial emissions, both directly & through spatial spillover effects, thereby reinforcing its role in environmental regulation & emission control.

Similarly, **Zhang et al. (2022)** analyze the interaction between digital finance, green finance & environmental protection within G-20 economies using a panel quantile regression

approach. Their empirical evidence confirms that green finance contributes meaningfully to emission reduction, particularly in economies with higher levels of financial development.

Alharbi et al. (2023) extend the scope of analysis by examining a panel dataset covering 44 countries, focusing on green bonds as a representative instrument of green finance. The study finds that green bonds play a significant & positive role in fostering renewable energy development over the long term, emphasizing their importance in global energy transition strategies.

The expansion of the green economy is further reinforced by the implementation of green-oriented public policies. Several studies have explored both theoretical & empirical dimensions of policy interventions in promoting green economic outcomes. **Campiglio (2016)** highlights the positive influence of monetary policy tools on low-carbon industries, suggesting that credit creation mechanisms can provide enhanced financial support to green sectors, particularly in developing economies.

Razmi et al. (2021), using empirical data from Iran spanning 1984 to 2016, provide evidence of a strong association between monetary policy measures & sustainable energy production. Their findings suggest that supportive financial policies can stimulate renewable energy output in emerging markets.

Wang et al. (2021) examine the impact of green finance reform policies on regional green growth & conclude that technological innovation & optimization of industrial structures serve as key transmission channels through which green finance enhances sustainable development.

Muganyizi et al. (2021) utilize a Semi-parametric Difference-in-Differences (SDID) model based on panel data from 290 cities & textual policy analysis. Their results underscore the effectiveness of green finance policies in significantly reducing industrial emissions, thereby strengthening environmental governance.

Li et al. (2022) broaden the discussion by highlighting the complementary role of other green policy instruments, such as environmental taxation, in encouraging renewable energy investments. The study also reveals that the intensity of environmental regulation moderates the relationship between green finance & renewable energy investment, indicating the importance of policy coordination.

Finally, **Lee et al. (2023)** assert that green finance is indispensable for achieving economic decarbonization. The study emphasizes that green financial policies—including carbon taxes, green subsidies & environmental regulations—work synergistically to promote sustainable economic transformation.

3. Research Methodology

Research Design

The present study adopts a **descriptive research design** to analyze the impact of green finance on economic growth in India. This design is appropriate as it helps in systematically describing the characteristics of green financial instruments & examining their relationship with economic growth indicators over a specific period.

Period of Study & Sample Size

The study is based on eight years of data, covering the period from 1 April 2017 to 31 March 2025. This time frame is selected to capture recent developments & trends in green finance initiatives in India.

Data Collection

The research is entirely based on secondary data. The required data have been collected from authenticated & publicly available sources, including official websites & publications of recognized statistical & research institutions, particularly those published by the Statistics Research Department & related financial authorities.

Statistical Tools for Hypothesis Testing

To analyze the collected data & test the formulated hypotheses, the following statistical tools are employed:

Correlation Analysis to examine the degree & direction of the relationship between green finance variables & economic growth & **t-test** to assess the significance of the impact of green finance instruments on GDP growth.

Objectives of the Study

- To examine the impact of green finance on economic growth in India.
- To analyze major components of green finance in India, such as **green bonds, green loans & green debt financing** & their relationship with **GDP growth**.

Hypotheses of the Study

- **H₀₁**: Green finance through green bonds has no positive impact on the economic growth (GDP) of India.
- **H₁₁**: Green finance through green bonds has a positive impact on the economic growth (GDP) of India.
- **H₀₂**: Green finance through green loans has no positive impact on the economic growth (GDP) of India.
- **H₁₂**: Green finance through green loans has a positive impact on the economic growth (GDP) of India.
- **H₀₃**: Green finance through green debt financing has no positive impact on the economic growth (GDP) of India.
- **H₁₃**: Green finance through green debt financing has a positive impact on the economic growth (GDP) of India.

Limitations of the Study

- The study is subject to **time & cost constraints**, which limit the scope of analysis.
- The analysis is confined to an **eight-year period**, which may not fully capture long-term trends in green finance.
- The study focuses only on selected **green finance instruments** & does not include other macroeconomic or policy-related variables that may influence economic growth.

4. Data Analysis & Interpretation

4.1 Green Bonds Growth rate

Table 1: Green Bonds Growth rate

Year	Green Bonds (₹ Billion)	Growth Rate (%)
2017–18	169.1	6.62
2018–19	269.1	59.13
2019–20	303.0	12.60
2020–21	582.4	92.21
2021–22	487.1	(16.36)
2022–23	520.0	6.75
2023–24	610.0	17.31
2024–25	725	18.85

Source: Computed from secondary data (Statistics Research Department & National Accounts Statistics)

Interpretation: Green bonds serve as an important self-financing instrument for both public & corporate entities to fund environmentally sustainable projects. Table 1 presents the growth trend of green bonds in India over an eight-year period. The data reveal significant fluctuations in growth rates, with a sharp increase during 2020–21, reflecting heightened policy support & investment in green projects. However, a decline is observed in 2021–22, largely due to market uncertainty & post-pandemic financial adjustments. From 2022–23 onwards, the estimated figures indicate a gradual recovery & stabilization in green bond issuance, supported by renewed investor confidence, policy incentives &

India's long-term commitment to climate finance. The overall trend suggests that despite short-term volatility, green bonds have demonstrated strong potential for sustained growth, reinforcing their role in supporting environmentally sustainable economic development in India.

Hypothesis Testing:

First Hypothesis:

- **H₀₁:** Green Finance (Green Bonds) usage has no positive impact on economic growth (GDP) of India.
- **H₁₁:** Green Finance (Green Bonds) usage has positive impact on economic growth (GDP) of India.

Table 2 : Hypthesis results

Year	Green Bonds Growth rate	Economic Growth Rate	Correlation Results	t-test results	Hypothesis Results
2017–18	6.62	6.8	-0.819	p:0.012 & t-test-(3.47)	H₀₁ Accepted
2018–19	59.13	6.5			
2019–20	12.60	3.9			
2020–21	92.21	-5.8			
2021–22	(16.36)	9.1			
2022–23	6.75	7.2			
2023–24	17.31	8.2			
2024–25	18.85	7.0			

Interpretation:

The correlation analysis reveals a **strong negative correlation** ($r = -0.819$) between green bond growth & India's economic growth during the study period. This indicates that increases in green bond issuance do not correspond with increases in GDP growth. The negative relationship can be attributed to external shocks such as the COVID-19 pandemic, macroeconomic instability & the

time lag between green investment & its economic returns. The t-test results further confirm the statistical significance of this relationship, with a **p-value of 0.012**, which is less than the 5% significance level. This indicates that the relationship between green bond growth & economic growth is statistically significant but **not positive**.

4.2 Green Loans Growth rate

Table 2: Green Loans Growth rate

Year	Green Loans (₹ Billion)	Growth Rate (%)
2017–18	1597.58	13.42
2018–19	1811.17	13.36
2019–20	2107.78	16.38
2020–21	2365.22	12.21
2021–22	1811.17	13.36
2022–23	1980.00	9.32
2023–24	2245.00	13.38
2024–25	2550.00	13.58

Source: Computed from secondary data (Statistics Research Department & National Accounts Statistics)

Interpretations: Table 2 presents the growth trend of green loans in India over the period from 2017–18 to 2024–25. The data indicate a steady expansion of green lending during the initial years of the study, reflecting increased financial support for environmentally sustainable projects such as renewable energy, energy-efficient infrastructure & clean transportation. The growth rate remained consistently positive between 2017–18 & 2019–20, suggesting growing institutional & policy support for green credit.

During 2020–21, although the volume of green loans increased, the growth rate moderated due to economic disruptions caused by the COVID-19 pandemic. In 2021–22, a contraction in green loan volume is observed, which may be attributed to financial market uncertainty, delayed investment decisions & cautious lending behavior by financial institutions. From 2022–23 onwards, the estimated figures show a

gradual recovery in green loan disbursement, supported by renewed economic activity, government incentives & increasing awareness of sustainable finance. The improving growth rates in 2023–24 & 2024–25 indicate strengthening confidence in green investments & the growing role of green loans in supporting India's transition toward sustainable economic development. Overall, the trend suggests that green loans have demonstrated resilience & long-term growth potential despite short-term economic fluctuations.

Hypothesis Testing:

Second Hypothesis:

- **H02:** Green Finance (Green Loans) has no positive impact on economic growth (GDP) of India.
- **H12:** Green Finance (Green Loans) usage has positive impact on economic growth (GDP) of India.

Table 3: Correlation Results

Year	Green Loans Growth rate	Economic Growth Rate	Correlation Results	t-test & p-value results	Hypothesis Results
2017–18	13.42	6.8	0.023	t=0.056 p=0.956	H ₀₂ Accepted
2018–19	13.36	6.5			
2019–20	16.38	3.9			
2020–21	12.21	-5.8			
2021–22	13.36	9.1			
2022–23	9.32	7.2			
2023–24	13.38	8.2			
2024–25	13.58	7.0			

Interpretation:

The correlation analysis shows a very weak positive relationship between the growth rate of green loans & India's economic growth, with a correlation coefficient of **0.023**. This value indicates that changes in green loan growth are almost unrelated to short-term variations in GDP growth during the study period.

The t-test results further reveal that the relationship is statistically insignificant, as the p-value (0.956) is much higher than the 5 percent significance level. This suggests that

green loan growth does not have a measurable positive impact on economic growth within the selected time frame. Although green loans play an important role in financing sustainable & environmentally responsible projects, their contribution to overall economic growth may be indirect & long-term in nature. Factors such as implementation delays, sector-specific allocation & external economic shocks may weaken the immediate linkage between green lending & GDP growth.

4.3 Green Finance (Debt Financing) Growth rate**Table 4: Green Finance (Debt Financing) Growth rate**

Year	Green Finance (Debt Financing) (₹ Billion)	Growth Rate (%)
2017–18	217	2.57
2018–19	229	5.53
2019–20	258	12.66
2020–21	248	(3.88)
2021–22	229	5.53
2022–23	240	4.80
2023–24	268	11.67
2024–25	295	10.07

Source: Computed from secondary data (Statistics Research Department & National Accounts Statistics)

Interpretations:

Table 3 illustrates the growth pattern of green finance through debt financing in India during the

period from 2017–18 to 2024–25. The data indicate a gradual increase in green debt financing from 2017–18 to 2019–20, reflecting growing institutional participation in environmentally

sustainable projects. The highest growth rate during this period is observed in 2019–20, suggesting increased reliance on debt instruments to support green initiatives. In 2020–21, green debt financing experienced a decline, as indicated by the negative growth rate. This reduction can be attributed to economic disruptions & cautious borrowing behavior during the COVID-19 pandemic. Although a slight recovery is observed in 2021–22, the pace of growth remained moderate due to lingering financial uncertainties. From 2022–23 onward, the estimated data show a steady improvement in green debt financing, supported by economic recovery, improved credit conditions & enhanced policy focus on sustainable finance. The increasing growth rates in 2023–24 & 2024–25 highlight the

strengthening role of debt financing in mobilizing resources for green projects. Overall, the trend suggests that green debt financing has the potential to contribute to long-term sustainable development, despite short-term fluctuations caused by external economic shocks.

Hypothesis Testing:

Third Hypothesis:

- **H03:** Green Finance (Debt Financing) has positive impact on economic growth (GDP) in India.
- **H13:** Green Finance (Debt Financing) has positive impact on economic growth (GDP) in India.

Table 5: Hypothesis Results

Year	Green Finance (Debt Financing) Growth rate	Economic Growth Rate	Correlation Results	t-test results	Hypothesis Results
2017–18	2.57	6.8	0.5768	t- 1.22 and p-0.3087	H₀₃ Accepted
2018–19	5.53	6.5			
2019–20	12.66	3.9			
2020–21	(3.88)	-5.8			
2021–22	5.53	9.1			
2022–23	4.80	7.2			
2023–24	11.67	8.2			
2024–25	10.07	7.0			

Interpretation:

The correlation coefficient of 0.5768 indicates a moderate positive relationship between green debt financing growth & economic growth in India during the study period. This suggests that increases in green debt financing tend to move in the same direction as GDP growth. However, the strength of this relationship is not sufficiently strong to establish a decisive economic impact.

The t-test results further reveal that the relationship is statistically insignificant, as the calculated p-value (0.3087) is greater than the 5 percent significance level. This implies that the observed positive association between green debt financing & economic growth may be influenced by external economic factors rather than a direct causal relationship. The findings indicate that although green debt financing

supports environmentally sustainable investments, its contribution to short-term economic growth remains limited. The long gestation period of green projects & sensitivity to macroeconomic conditions may delay the translation of such investments into measurable GDP growth.

5. Findings & General Discussion:

Findings:

- The analysis of green bonds reveals a statistically significant relationship with economic growth; however, the relationship is negative, indicating that higher growth in green bond issuance did not translate into immediate GDP growth during the study period.
- Green loans show a very weak & statistically insignificant positive

relationship with economic growth. This suggests that variations in green loan growth have little short-term influence on India's GDP.

- Green debt financing exhibits a moderate positive correlation with economic growth, but the relationship is not statistically significant, implying that the observed association may be influenced by external macroeconomic factors.
- Across all three instruments, green finance demonstrates growth & resilience, but its impact on economic growth appears to be indirect & delayed rather than immediate.

6. Conclusion

The study concludes that green finance in India—through green bonds, green loans & debt financing—has expanded steadily over time, reflecting growing institutional support for sustainable development. However, empirical results indicate that green finance does not exert a strong or statistically significant short-term positive impact on economic growth. This may be due to factors such as the long gestation period of green projects, sector-specific allocation of funds & disruptions caused by external shocks like the COVID-19 pandemic. Therefore, while green finance is essential for environmental sustainability, its contribution to GDP growth is more long-term & structural in nature.

Suggestions:

- Policymakers should focus on strengthening the linkage between green finance & productive sectors that generate higher economic output & employment.
- Greater emphasis should be placed on monitoring & efficient utilization of green funds to ensure timely project completion & economic spillovers.
- Financial institutions should develop innovative green financial products & improve credit access for small & medium green projects.
- Future research may adopt a longer time horizon & include additional

variables to capture the delayed economic impact of green investments more accurately.

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REVIEW OF LITERATURE ON ECONOMIC AND SOCIAL DETERMINANTS OF CRIME

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Abstract

The economics of crime, pioneered by Gary Becker's seminal 1968 work, treats criminal behaviour as a rational choice where individuals weigh expected benefits against costs, including the probability of apprehension and punishment. This paper presents a comprehensive review of the empirical and theoretical literature on the economic and social determinants of crime. Key economic factors examined include unemployment, poverty, income inequality, real wages, labour market conditions, education levels, and per capita income/GDP growth. Social and demographic factors such as urbanisation, family structure, peer influences, neighbourhood effects, age composition, and deterrence mechanisms (policing, conviction rates, and severity of punishment) are also analysed.

The review reveals that while the direction and magnitude of effects vary across studies and contexts, several consistent patterns emerge: income inequality and poverty often exhibit a positive association with property and violent crimes; unemployment tends to increase property crimes through motivational effects, though opportunity effects can sometimes produce countervailing results; higher education and improved legitimate earnings opportunities generally reduce criminal propensity by raising the opportunity cost of crime; and stronger deterrence (higher clearance and conviction probabilities) consistently lowers crime rates. Urbanisation and weakened family structures are frequently linked to higher crime, particularly in large cities. Studies from both developed (e.g., USA, Europe, Canada) and developing countries (e.g., India, Nigeria, Pakistan, South Africa) highlight that crime imposes substantial direct and indirect economic costs on society, including victim losses, criminal justice expenditures, lost productivity, and reduced investment. The literature underscores that effective crime reduction requires a balanced "carrot and stick" approach: improving legitimate economic opportunities (especially for the less skilled and youth), expanding access to quality education, reducing inequality and poverty through inclusive growth, and strengthening the criminal justice system. Policies ignoring these socio-economic roots while relying solely on punitive measures often yield limited long-term success. This review synthesises divergent findings, highlights methodological issues (such as endogeneity and measurement challenges), and identifies gaps for future research, particularly in the Indian context.

Keywords: Economics of crime, crime determinants, unemployment and crime, income inequality and crime, education and crime, poverty and crime, deterrence theory, Becker's model, property crime, violent crime, socio-economic factors, India

Introduction

In this paper, detailed and extensive review of literature has been made on empirical studies related to economic determinants of crimes.

Study of crime in other subjects is relatively old, but the economic approach to study crime is relatively new phenomenon. It started with the seminal work of Becker (1968) who placed crime in economic framework. This approach

was further developed by Ehrlich (1973). Their study presumed criminal as economically rational decision maker who always tries to maximise their utility. Criminal maximises his utility function after incorporating positive utility from crime, negative utility from incarceration and probability of getting caught and punished. Their prescription were mainly based on reduction of benefit of crime and increasing negative utility through tougher punishment and strengthening the criminal justice system. This will discourage them to commit crime. There have been numerous empirical studies to check and verify this presumption and to ascertain impact of various socio economic factors on crime.

Literature review

As discussed above it is Becker which started the core economic method to analyse crime. Becker developed a theoretical model of crime and criminal behaviour. His approach to look at criminal as rational economic agent who tries to maximise his expected utility through crime initiated a novel way and created a new paradigm to analyse criminal activity. This approach has further refined and developed by many economists. Further empirical and theoretical studies have identified various socio economic factors as determinant of crime. Their direction of influence and significance of influence however have not been uniform throughout the studies. Economic factors which are found to be affecting crimes are labour market conditions, unemployment, poverty, income inequality, education etc. There are other factors like drug and alcohol use, availability of supporting factors of crime, peer pressure, poor policing and security, inefficient criminal justice system, socio demographic factors, corruption etc also found to be influencing crime. Influence of these factors found in various studies is being further enumerated below.

The essential tenet of the economics of crime is that, crime is an industry just like any other industry. The only difference is that this industry is not recognised as legal by the state and society. Similar to other industry it also requires labour, capital and new innovative ideas in order to get a return. It also has its own

revenue and cost. For people with deviant behaviours crime is one of the easiest ways to obtain economic gains and to maximise utility. According to Becker an individual will engage in criminal activities as long as the expected utility of committing crime is greater than the expected utility of engaging in any other activities. Therefore, deteriorations in labour market opportunities make crime relatively more attractive. It is also seen that individuals who commit crime have lower perceptions of the riskiness of crime, higher assessments of the relative earnings of criminal behaviour and lower legitimate hourly pay. Moreover, many youths combine crime and work or shift between them readily. Because most criminals are self-employed. The pecuniary returns to crime depend on legitimate earnings opportunities, criminal earnings opportunities, the likelihood that crime will succeed, and the penalty that a criminal will pay if caught. The pecuniary returns to crime also depend on an additional factor: the probability that the individual succeeds with the crime. If a youth is caught, he is likely to gain little from the crime. If he is incarcerated, he obtains no legitimate earnings during his sentence and, likely as not, will have fewer legitimate earnings opportunities upon release. According to Freeman (1996), it is presumed that incarceration shall have deterrent effect on the criminal behaviour. However, many offenders sentenced to prison may eventually return to society with their labour market skills and opportunities reduced and their criminal skills and opportunities enhanced. This may explain the higher recidivism amongst them. As policy prescription, a combined carrot and stick policy—increased resources for police to prevent crime; incarceration of criminals during their most crime-intensive years (not at ages 40–60); and increased legitimate opportunities for the less skilled—would seem to offer a way to deter at least some young men from committing crimes (Freeman 1996).

Becker profoundly changed the way criminal behaviour was hitherto being conceived. Criminal choice, rather than being reflection of mental illness or bad attitude, is considered as economic choice and maximisation problem. Criminals, as rational agent assess expected returns of crime, i.e. compare costs and benefits

of legal and illegal activities based on their assessment of probability of being arrested and punished.

Economically, thus it can be formulated that criminal follows their income maximisation model in which they consider various factors affecting their income through crime and make a decision like a rational agent. He can also be following his utility maximisation model in which he is trying to maximise utility from the crime after incorporating negative utility from potential imprisonment and conviction. Crime for him is like easy money. It is a business venture where there is largely no requirement of seed money, working capital and fixed capital.

Block and Heineken (1975) further improved the Becker's model and they included time spent in legal and illegal activities in the utility function of their model.

David Sioquist (1973) opined that under certain conditions criminals can also be treated as rational economic agents, who allocate their time between legitimate and illegitimate activities. Using Von Neumann-Morgenstern utility function this agents maximise their expected utility function subject to the time constraint. He concludes in his study that an increase in the ratio of arrests to the number of crime reduces the expected utility from crime. He also found a positive effect of unemployment on property crime.

In economics effect of incentives on criminal behaviour can be studied. It can study the way in which decisions of criminals interact in a market setting. Knowledge of this can be used to make a cost-benefit analysis to assess alternative strategies to reduce crime and criminal behaviour. However, it is not necessary that economic growth and crime or violence may be positively correlated. Protection from violence is not a natural by-product of economic growth. There are many cases where violence has risen against a background of rapid improvement in per capita income and other development indicators. Therefore, dealing with crime in a society is intrinsically a matter of public policy. This calls for careful investigation of the causes of violence (Drèze, J., & Khera, R. 2000).

Ehrlich I (1973) in his study tries to see to what extent illegal behaviour can be explained by the effect of opportunities given preference. He found that even if those who violate certain laws does not differ much in various respects from those who abide by the same laws, the former, like the latter, do respond to incentives. It was that the law enforcement activity had a deterrent effect on offenders. There has been positive association between income inequality and the rate of crimes against property. It was explained that reason for participation in illegal activity even after apprehension and punishment was relative opportunities available to offenders in legitimate and illegitimate activities. Empirically it has also been found that crimes against property are positively related to degree of community's income inequality. This suggests a social incentive for equalising training and earning opportunities across persons. (Ehrlich I, 1973)

Witte and Witt (2000) in their study opine that economists see criminal activity as being similar to paid employment and therefore it requires time and it produces an income. They further emphasise that the dichotomy between *either* criminal activity *or* legal activity is also an oversimplification. According to them a person can engage in crime even when he is working, as he may have greater opportunities to commit crime. He may also, supplement work income with crime income in order to satisfy his needs. The basic model has another problem with explaining juvenile crimes. Because, young people are more likely to participate in crime before they actually participate in the labour market. They have also argued that the economic models could not directly address the role of education in crime. Though they accept that education has been taken care of indirectly through unemployment and its influence on crime. However, juvenile crime has forced economists to incorporate education, peer group effects and the influence of family and community on crime in their model.

Fall in real wage rate and increase in economic inequality have also been assigned as economic factors affecting crime. Freeman (1994) concludes that "the continued crime high rate in

the U.S., despite massive imprisonment of criminals, may be one of the costs of the rising inequality in the country, and in particular of the falling real earning of the less educated” and “perhaps the widely increase in earnings inequality and the fall in the real earnings of the less skilled men who commit most crimes gave young men a job market push into crime”.

Cantor and Land (1985) in their paper developed a theoretical framework to explain the link between unemployment and crime. They postulated two important links: opportunity and motivation. The motivation hypothesis, like the analysis by the Becker (1968), postulated that a decrease in viable economic prospects will increase the incentive to engage in crime; so the unemployed persons are more likely to engage in criminal activities. Therefore, there is a positive relationship between crime and unemployment. On the other hand, according to the opportunity hypothesis a decrease in economic activity will lead to a decrease in the availability of criminal targets. The unemployed persons are also more likely to stay at home thus decreasing their vulnerability to crime, especially property crime. Hence it reduces the incentive to engage in crime. This suggests a negative relationship between crime and unemployment. These two hypothesis are expected to work differently based on the type of crime. It has been postulated that the motivation hypothesis is more important for property crime and opportunity hypothesis is relevant for both property and violent crimes. However, under opportunity hypothesis the effect is still expected to be stronger for the property crimes.

Crime situation in a particular area is also influenced by the other conducive factors for crime. If policing is weak, investigation agency is not effective and instruments of crime are easily available crime will also be high. According to Levitt et al (1998) propensity to commit crime is also affected by the availability of fire arms and prevalence of illicit drugs and related activities.

According to Freeman (1991) the higher income level of the “already rich” has had two important effects on crime; first, “the more money in the hands of the wealthy, the more lucrative is robbery or burglary, and the greater

is the potential demand by wealthy for illegal consumption items such as drugs” and second, “the exogenous growth of criminal opportunities due to innovation and expansion of the drug business is also likely to have contributed to rise in youth crime”. Freeman suggests that to improve less educated skills and to increase their legitimate opportunities should be part of any crime reduction programs.

According to Glaeser et al (1996) family background and neighbourhood peers are strongly related with the decisions of youth. Disadvantaged youths, living in suburb or high-poverty or high-crime areas, are more likely to imitate bad attitudes of their parents and neighbours. Therefore he also suggests that it appears to be crucial an effective policy (i.e. schooling, education,) aimed at giving different perspectives to disadvantaged youths. In fact, education may provide an alternative source of information about the returns from criminal actions and parents or positive example may send messages that interrupt the messages from one’s neighbours. Their result suggests that the amount of social interactions are highest in petty crimes (such as larceny and auto theft), moderate in more serious crime (assault, burglary and robbery) and almost negligible in murder and rape. The index of social interactions is also applied to non-criminal choices and we find that there is substantial interaction in schooling choice.”

Glaeser and Sacerdote (1999), attempted to explain why crime rate is much higher in big cities than in either small cities or rural areas. They decomposed the relationship between cities and crime in four category: 1) higher pecuniary returns to crime in urban areas, 2) lower probability of arrest, 3) characteristics exogenous with respect to location, 4) characteristic endogenous with respect to location. Using data from the National Crime Victimization Survey they empirically test their hypothesis. They have found that: 45% of this connection can be explained by the fact that families are much less intact in cities; 26% by higher benefit levels in cities and 12% by lower probability of arrest. It can be largely said that family system in the urban area is relatively weaker in nature.

In their study Imrohoroglu et al(2000) they did not find any effect of unemployment on property crime. To address the problem of inconclusive relationship between unemployment rate and crime few suggestions have also been made. Gould, Weinberg and Mustard (2002) opined that “previous works on the relationship between labor markets and crime focused mainly on the relationship between unemployment rate and crime, and found inconclusive results. In contrast” it is important to “examine the impact of both wages and unemployment on crime, and use instrumental variables to establish causality”.

According to Kelly (2000) in the economics theory of crime, areas of high inequality place poor individuals who have low returns from market activity next to high-income individuals who have goods worth taking, thereby increasing the returns to time allocated to criminal activity” furthermore “strain theory argues that, when faced with the relative success of others around them, unsuccessful individuals feel frustration at their situation. The greater the inequality, the higher this strain and the greater the inducement for low-status individuals to commit crime. Kelly also shows that for violent crimes the impact of inequality is large, even after controlling for the effects of poverty, race, and family composition. Although most crimes are committed by the most disadvantaged members of society, these individuals face greater pressure and incentives to commit crime in areas of high inequality.

Education and availability of skills are also important determinant of crime. According to Lochner (1999) crime is primarily a problem among young uneducated men. Individuals with low skill level are more likely to participate in criminal activities because the returns they can earn from work or school are low. Both high school graduation and ability directly lower criminal propensities. He has further prescribed that policies which raise the skills and abilities of children and adolescent as well as encourage them to finish high school can have sizeable impacts on crime.

Lochner and Moretti (2001) in their study conclude that the estimated effects of education on crime cannot be easily explained away by

unobserved characteristics of criminals, unobserved state policies that affect both crime and schooling, or educational differences in the conditional probability of arrest and imprisonment given crime. Evidence from other studies regarding the elasticity of crime with respect to wage rates suggests that a significant part of the measured effect of education on crime can be attributed to the increase in wages associated with schooling. They further argue that the impact of education on crime implies that there are benefits to education not taken into account by individuals themselves, so the social return to schooling is larger than the private return. The estimated social externalities from reduced crime are sizeable.

They further concluded that the economic returns from an appropriate and effective policy are massive and outstanding. In fact, “a 1% increase in the high school completion rate of all men ages 20-60 would save the United States as much as \$1.4 billion per year in reduced costs from crime incurred by victims and society at large. Such externalities from education amount to \$1,170-2,100 per additional high school graduate or 14-26% of the private return to schooling”. It appears to be socially convenient to promote and pursue policies aimed at preventing high school drop out and increasing schooling participation.

Impact of education on crime has also been studied by Usher (1997). He has submitted that education tends to reduce the incidence of criminal activities through its civilisation effect. He argues that education may also have a “civilization” effect, tending to reduce the incidence of criminal activity. Education conveys a civic externality, a benefit to society over and above the benefit to the student in enhancing his future earning power. Students are taught not only to be productive, but to be law abiding and loyal to their country. Estimates of the return to education are biased down when the civic externality is overlooked. He opines that education promotes good citizenship. Education does more than teach skills to enhance one’s capacity to earn income. It perpetuates the values of society, enculturates people to serve their communities, and promotes the virtues of hard work and honesty.

Wilson and Herrnstein (1985) have further concluded that criminals tend to be less educated and are from poorer economic backgrounds than non-criminals. Therefore, identification of low education as determinant of deviant behaviour would help in designing policies for increasing the level of education and schooling in order to lessen crime rate.

Janko and Popli (2015), in their study of Canada, have found no evidence of a long-run relationship between crime and unemployment, both when they look at disaggregation by type of crime and disaggregation by region. They concluded that the lack of evidence for a long-run relationship indicated that they had no evidence of motivation hypothesis. For property crimes they found some evidence of a significant negative short run relationship between crime and unemployment, lending support to the opportunity hypothesis. While at the national level they found a significant relationship between unemployment and fraud and robbery, at the regional level the relationship is significant between unemployment and breaking and entering and auto theft.

Witte (1980) used a variant economic model of crime on the data collected from the post release activities of men released from the North Carolina Prison. He found in his study that the expected certainty and severity of punishment both deter criminal activity in majority of cases. He also found that increase in certainty of punishment has greater effect in general than the same increase in severity of punishment. His study also found that for relatively minor offenders certainty of punishment had larger effect and severity of punishment had relatively greater effect on adult offenders. The higher legal wages found to deter crime, but their impact was found to be weak in nature.

Kizilgol and Selim (2017) in their study of EU 28 and Turkey by using fixed effects negative binomial model have found that GDP per capita, unemployment rate and urbanisation has a positive and important effect on the number of crimes in EU 28 and Turkey. They also observed high crime rates in highly urbanised areas. They also concluded that the increases on

the enrolment rate and the number of the police seem to have decreased the number of crimes in the direction of expectations. Their study also observed that the effect of the growth rate and inflation is not clear or significant on the crime rate.

In several countries studies have been made on economic losses due to crimes. McCollister, French and Fang, 2010 have calculated that in the United States in 2007, there have been economic losses of nearly 15 billion US dollars to the victims and about 179 billion US dollars spent by the government on legal and judicial activities, police protection and corrections. Therefore, programs that directly or indirectly prevent crime can generate substantial economic benefits by reducing crime-related costs incurred by victims, communities, and the criminal justice system. (McCollister, French and Fang, 2010)

Cost of crime to the society is multifarious. Beyond the costs of the legal system, victim losses, and crime-prevention agencies, the crime burden includes the costs of deterrence (locks, safety lighting and fencing, alarm systems, and munitions), the costs of compliance enforcement, implicit psychic and health costs (fear, agony, and the inability to behave as desired), and the opportunity costs of time spent preventing, carrying out, and serving prison terms for criminal activity. (Anderson D, 1999)

The aggregate cost of crime to legitimate society would then be the loss of property, lives and misery due to crime. At the other extreme, imagine a society that spends so much for crime control that no crimes are committed. The cost of crime would then be the opportunity cost of crime control resources—prison, police, private spending— that could be spent on other activities. (Freeman, 1996)

The analysis of crime by female and male criminality bring to light that the crimes are the product of their circumstances ; poverty and the consequent sense of frustration coupled with illegitimate opportunity structures could lead to crime. In India where a large segment of the population exists below poverty line, most of the offenders were invariably poor. A sense of deprivation leads to criminal behaviour.

Among the motives for crime economic motive seems to be the main motivating factor for committing crime. (Santhanalakshmi, 2008)

The potential losses from crime lead to some spending on crime control. The costs of crime control lead to some "acceptable" level of crime. At the social optimum, society would spend just enough on crime control so that the marginal dollar spent (adjusted for deadweight loss of raising the dollar) equals the marginal reduction in social costs of crime. This requires knowledge of how social costs vary with the number of crimes and of the effectiveness of different crime control programs. (Freeman, 1996)

Calculating the impact and the effect of crime and criminal behaviour in an economy is a challenging and complex task. Criminal activity has severe and far reaching negative and harmful impact on every society and the economy. It affects everyone with varying degree. Nobody in the society is free and immune from its impact. Hence, all crimes directly or indirectly effect the day to day life of every human being. It has direct impact on the economic growth and stability of the nation. It results in the reduction of quality of human life, breeds insecurity, creates anarchy, threatens claim on private property and basically shakes the belief in the law of the land. All these can lead to the fall in the saving and investment in the economy, which in turn reduces production and income generation and increases unemployment, poverty and inequality in the economy. These can further increase the crime rate in the economy, setting in motion the "vicious circle of crime" in an economy. Therefore it can be said that crimes breed crimes and social tensions. A society with high crime rate witnesses a massive flight of capital from the country to a foreign country with lesser crime rate. Security is sine qua non for the economic development and growth. It will ultimately result in the reduction of Foreign Direct Investment (FDI) and Foreign Institutional Investment (FII) in the economy. Crimes have two types of impact on the economy, firstly it will reduce the level of output and secondly it influences the rate of growth of the economy.

Anderson (1999) in his study of USA calculated the burden of crime. He concluded that criminals acquire an estimated \$603 billion worth of assets from their victims, they generate an additional \$1,102 billion worth of lost productivity, crime-related expenses, and diminished quality of life. The net losses represent an annual per capita burden of \$4,118.42 Including transfers, the aggregate burden of crime is \$1,705 billion. In the United States, this is of the same order of magnitude as life insurance purchases (\$1,680 billion), the outstanding mortgage debt to commercial banks and savings institutions (\$1,853 billion), and annual expenditures on health (\$1,038 billion).

In USA approximately 2 percent of GDP is allotted to crime control activities. From one perspective, this is simply part of the overhead of running a modern society and trying to enforce rules of conduct and protect citizens. From another perspective, it is pure waste. Measured in terms of spending, if we could make contracts with potential criminals to forego crime or devise policies to train them or to subsidize their employment so that they would forego crime, one might think that we could spend up to 4 percent of GDP—that is, the 2 percent presently lost to crime and the 2 percent spent on controlling crime—and still improve social well-being. (Freeman, 1996)

Crimes have both direct and indirect effect on public revenue and public expenditure. When crime rate increases it will reduce production, output and income. Reduction in the government revenue will reduce public expenditure on various social welfare programmes. Fall in welfare expenditure aggravates social tensions and problems in the economy. Direct cost of government on crime prevention strategy includes maintenance of police force, salary, allowances of police, jail and court officials, training, vehicles, buildings and other administrative expenses. It is a very huge unproductive expenditure of the government (Mehta, 2009). Private expenditure made for safeguarding from crime is another important area of our concern. Freeman (1996) has estimated individuals and firms spend approximately 0.6% of GDP in the USA to safeguard them from criminal activity. It includes the cost of locker facility, security

alarms, Close Circuit Tele Vision, Security guard, salary to watchman and security measures among others. According to Anderson (1999) with zero crime in an economy or society, the government and individuals can utilise the entire amount that they devote for crime prevention strategy for other development purposes. Crime has some indirect costs created in the society which cannot be measured using economic criterion. Crimes create a sense of insecurity and discomfort in the society.

İmrohoroglu, A., Merlo, A., & Rupert, P. (2004) studied drop in crime between 1980 and 1996 USA. They found that unlike violent crimes, property crimes are typically motivated by the prospect of direct pecuniary gain. Economic considerations are therefore most likely to guide individual decisions of engaging in these types of criminal activities. During the period of study they also found that the most important factors that account for the observed decline in property crime are (in order of importance): the higher apprehension probability, the stronger economy, and the aging of the population. In their study they found that the effect of unemployment on crime is negligible. They also concluded that the increased inequality prevented an even larger decline in property crime and holding everything else constant, the increase in income inequality between 1980 and 1996 would have caused a substantial increase in property crime.

It is not the case that the crime is committed by only unemployed person. As per İmrohoroglu, A., Merlo, A., & Rupert, P. (2004) model prediction about 79 percent of the people engaging in criminal activities are employed and only the remaining 21 percent are unemployed. It has also predicted that about 76 percent of the people who commit property crimes are 18 years of age or younger. Reinforcing the belief that young persons are more prone to commit crime.

In their study they also found that the three most important components of the decrease in the crime rate are the higher apprehension probability, the richer economy, and the aging of the population. When income inequality increases, relatively more people find it profitable to engage in criminal activities. The

decrease in the unemployment rate on the other hand does not seem to have any impact on the crime rate. Another factor which increases recidivism is stigma attached with the conviction. After a conviction individuals may face lower wages than if they had not been convicted. This additional component of punishment is not legislated but occurs as a societal outcome that stigmatizes the ex-prisoner. This stigma may force the individual onto an earnings path that is lower than their pre conviction path (İmrohoroglu, A., Merlo, A., & Rupert, P, 2004).

Dutta, M., & Husain, Z. (2009) hypothesised in their paper that crime rates depend upon the deterrence effect and on the socio-economic structure like economic growth, inequality, urbanisation, education. They used the presence of more police personnel per square kilometre, fewer IPC cases per policemen, high rate of charge sheeting as proxy for deterrence factors and found that these are associated with lower crime rates. Their result also shows that high conviction rates will actually increase crime rates. This reveals inherent flaws in the criminal detection and corrective system, they concluded. Therefore they advised need for reforming the penal system to enable this system to rectify the behavioural pattern of criminals through education and the imparting of technical and vocational training, so that they can return to the mainstream after their release. In their study they also found that growth rate is positively associated with high crime rates and for that they suggested growth process to be participatory and create opportunities for the entire population in order to control crime rates.

Aalton et al examined the socio-economic status (SES) differences in violent crimes, property crimes and driving while intoxicated amongst Finnish citizens of the age group of 19 to 30 years old. SES has been measured in term of education, occupation, income and unemployment. Their study has concluded that “in addition to male gender, SES is strongly associated with all three types of crime, and the predictors are largely similar for all the offence types. Long-term unemployment and having only a basic education, in particular, were the most robust predictors of offending.” Their study has also found that the effect of low income on crime was primarily attributable to

prior involvement in crime. They found that the offenders belonging in the lower SES groups also committed more crimes per offender than the average. This association was strongest with property crime, but other types of crime also revealed strong socio-economic gradients in all four SES dimensions. Study also found that different crime types do not have vastly different social correlates. The results also indicated that low SES is an even stronger predictor for females than for males. They concluded that education is the strongest aspect of SES in crime causation. Their study has also concluded that involvement in any type of crime in the past correlated with future offending. Low education found to be the most powerful predictor of crime, and its impact appeared to spread over all crime types. They conclude that it is safe to say that dropping out of school and delinquency goes together.

Aduralere et al (2019) examined the determinants of crimes in Nigeria from economic and socioeconomic perspectives. They conducted macro level analysis using a time series data covering the period of 1990 to 2014. They have used economic factors like GDP per capita, male unemployment rate, female unemployment rate and poverty rate in this study. As socioeconomic-demographic factors they have used higher education enrolment, urban population and rural population. Their study has found that “ the results of the short-run indicated that gross domestic product per capita and higher education was found to have a negative significant effect on crime rate in Nigeria while urban population, male unemployment rate and poverty rate were found to have a positive significant effect on crime rate in Nigeria in the short-run.”

They have advised that the result of their study suggests that to reduce criminal activities in country like Nigeria there must be an increase in the income of the people. The government should also make more investment in the education as educated people are rational and more risk averse. Education reduces the propensity to commit crime. They have also advised higher education as cure for criminal activities in Nigeria. As higher unemployment rate also induces people to commit crime,

therefore more job opportunities should also be created by the government. They have also suggested that there should be higher budgetary allocation for poverty alleviation programme as higher poverty may lead to higher crime rate.

Bhushan, Phool Singh in his research paper has studied the socio-economic bases of changing crime patterns in the National capital of India using the crime data for the period 1971 to 1992. His study has found that crime rate remained low in the rural areas or in the areas where people with high literacy rate lived and were engaged in the tertiary activities. This study also found that about 69% of the total criminals were living in the slum area and 21% of them were living in the rural area. 8% of the total criminals were coming from good socio economic background and status and living in good localities. It has also been found that criminals prefer to commit crimes in the vicinity preferring their own police stations or adjoining police stations. In case of property crimes criminals can travel to long distances. His study has also concluded “ the effect of density of population on the crime and criminals residence is no so much as generally felt by the public. The myth that higher the density of population, higher the rate of crime is therefore false.” His study has also concluded that low socio economic status of the people of an area is accompanied by high rate of crime and number of criminals. His study also found positive correlations between slum and crimes. Tertiary occupations were also found to be negatively correlated with the crimes and criminals. In densely populated areas violent crimes are more prevalent than the property crime. Literacy has the negative impact on criminality. Number of persons per house hold influences the violent crime. Rate of unemployment and slum affects the violent crime. On the other hand density of population and slums has average impact over the property crimes. Property crimes were more prevalent in the areas with high socio economic status people as they were found to be better target. In slum area and where socio economic status was low, incidences of institutional crimes like gambling, use of narcotics use of alcohol and prostitution were found to be high.

Brosnan(2018) studied the socioeconomic determinants of property crime and violent crime in Ireland for the period 2003 and 2012. The objective of his study is to determine whether individuals respond to incentives while making a decision to engage in crime and whether this decision to commit crime is dependent on the type of crime he commits. His study has concluded that criminals respond to incentives, especially for property crimes. He has found that higher detection rates reduce the crime rates across all property crimes. However the impact of detection rate on violent crimes was not significant. Impact of detection rate on theft, burglary and fraud rates were quite significant. His study has also found the self-reinforcing processes of crime. That is regions with high incidences of property crime in the previous year were found to see high rates of property crimes in the succeeding year also. It has also been found that evidence of potential career criminals and knowledge has spread effect in the region. In his study, He has found that the socio economic determinants of crime to be more ambiguous. Theft rate has the greatest impact of socio economic factors. May be due to more lucrative illegal opportunities, increases in income per capita are tend to increase theft rates. Increases in both relative income and unemployment have been found to reduce the theft rate. The income variables are found to have statistically significant effect for crimes against the body. Increases in the income are found to have increased the number of assaults but reduced the number of sexual offences.

Buonanno et al (2008) studied the socio-economic and demographic determinants of crime in Spain. They have found that lagged crime rate, urbanisation rate and fraction of foreigners are positively correlated to crime rates. Socio economic variable like youth unemployment rate and education explains property crime better.

Bhorat et al (2017) combined published crime statistics with demographic data from the 2011 South African Census Community Profiles to investigate which socio-economic factors attract crime at a police precinct level. They investigated whether, and to what extent, precinct-level unemployment and income and

intra-precinct inequality are related to reported crime rates within a particular precinct. The expectation was that resource-acquisition driven crimes (i.e. property and robbery crimes) would be attracted by high levels of income and inequality in a precinct, and low levels of unemployment.

Further, they hypothesised that at some high level of both income and inequality, crime levels would decrease due to individuals beginning to take protective measures against crime. Through a combination of nonparametric and parametric analyses, including an IV regression design, they found support for this protection hypothesis in the case of property crime but not in the case of robbery crime. No socio-economic factors were significantly related to robbery crime in their analyses. They also investigated violent crime, which, due to the interpersonal and psychological nature of such crime, They hypothesised to vary positively with inequality and unemployment and vary negatively with income. They did find positive relationships between violent crime and income, they found that at high levels of precinct-level income, violent crime decreased. They did not detect any relationship between inequality and violent crime, nor between unemployment and any crime type. They concluded that where significance was found, certain socio-economic factors attract certain types of crime. Chiricos (1987) earlier had also concluded that “since the late ‘70s, many social scientists had concluded that the unemployment-crime relationship, measured at aggregate level, is both inconsistent and insignificant”.

Case and Katz (1991) in their study examined the effects of family background and neighbourhood peers on the behaviours of youth living in low-income Boston neighbourhoods. They have concluded that “family adult behaviours are strongly related to analogous youth behaviours. The links between the behaviour of older family members and youth are important for criminal activity, drug and alcohol use, schooling”. They also found that the behaviours of neighbourhood peers appear to substantially affect youth behaviour. Residence in a neighbourhood in which a large proportion of other youths are involved in crime

is associated with a substantial increase in an individual's probability of the being involved in crime. They assigned significant neighbourhood peer effect as reason because of drug and alcohol use, and the propensity of youths to be out of school and out of work".

Chiu and Madden (1998) studied the relationship between the level of crime particularly the level of burglary and the distribution of income. They showed that the number of burglaries increases as the income distribution becomes more unequal that is they concluded that increases in relative differential inequality unambiguously increase burglary crime. According Chiu and Madden model "richer neighbourhoods may have lower crime rates than poorer neighbourhoods because they may have a lower relative differential income inequality or because the richest households in the richer neighbourhoods adopt an effective defense technology against burglary". Their result also showed that more regressive income tax increases the level of crime.

Ehrlich in his paper (1973) opines that returns to crime, mainly property offences, depend on the opportunities provided by the potential victims of crime. In his analysis of the determinants of crime rates in the US in 1960 he concludes that higher median family incomes were associated with both higher rate of body crimes such as murder, rape, assault, etc and property crimes like burglary. He also finds that income inequality is also linked with higher rates of crime. However, he has found unemployment rate as less important factor in crime rates.

In his study Ehrlich (1975) after controlling for inequality and median income, deduced positive significant relationship between the average number of school years completed and property crime committed in 1960 in the US. However, he has tried to explain this finding through asserting that education may raise the marginal product of labour in the crime higher than in legitimate activity, it may be linked with under reporting of crimes, education may be associated with higher potential gains from property crimes and crime rates can be directly related to inequalities in schooling. However, the above explanations by Ehrlich do not seem

to be very plausible in itself. However, Ehrlich found the effects of police presence, convictions and the severity of punishment to have strong and negative impact on crime rates.

According to Ehrlich (1981) deterrence aims at modifying the cost of crime for offenders, while incapacitation and rehabilitation remove the offenders from the offence scene either by relocating in legal job markets or excluding them from the scene for some time. He also concludes that effectiveness of rehabilitation and incapacitation depends on the rate of recidivism amongst offenders and effectiveness of economic incentives amongst them. He has also concluded that "in practice the overwhelming portion of the total preventive effect of imprisonment is attributable to its pure deterrent effect." However, effectiveness of deterrence shall also depend upon the risk aversion or risk affinity or neutrality of the offenders.

There has been studies in which multifarious determinants of crime have been projected. Fajnzylber et al (2000) in their paper concludes that there are different and heterogeneous determinants and factors of crime. These can be poverty, income inequality, low wage, level of education, cultural and family background, social exclusion

Fleisher (1963) through his paper "The effect of unemployment on juvenile delinquency" attempted to empirically trace the relationships between unemployment and crime committed by juvenile. Perhaps, this was first effort to detect economic determinant of individual's criminal behaviour. Fleisher emphasised upon the importance of understanding the relationship between delinquency and labour market condition for public policy. He also focussed on determination of levels of distribution of wages and determination of population distribution which may have effects on the allocation of time on legal and illegal activities. Fleisher concluded that "an examination of delinquency rate and other variables by age and through time suggests that the effect of unemployment on juvenile delinquency is positive and significant. However, this statement is easier to support

when it refers to individual who are over sixteen years of age”.

Fleisher (1966) also studied the role of income on the decision to commit criminal acts by any person. He opines that “the reason for believing that low income increases the propensity to commit crime is that it raises the relative cost of engaging in legitimate activity. The cost of getting apprehended is also low as they view their lifetime prospects of earning from legal source as low and therefore view little cost for acquiring criminal records. Low income also reduces the opportunity cost for spending time in prison. Fleisher also incorporated the income level of potential victims of property crimes. The higher the level of income of potential victims higher the incentive to commit crimes. As per Fleisher “income has two conceptual influences on delinquency which operate in opposite directions, although they are not necessarily equal in strength.”

Gholam et al made an assessment of the relationship between crime against properties and violent crimes as functions of deterrent, social, economic and demographic factors in Iran using a panel data model. They concluded that deterrence hypothesis had been confirmed for both property crime, murders and assault. Economic factors have also been found significant for crime against property and threat. They also concluded that “Although deterrent factors did not affect committing violent crime, improvement in educational factor was considered to be a main determinant of crime rates.” Economic factors do not affect murders. Average family income has negative effect on crime against Property. Their study has found that economic growth has positive effect on the crime. They have also advised that the government policy should incorporate crime reducing factors in the process of economic growth. The study has also found that unemployment has a positive effect on crimes. Migrations do not explain violent crime, however it is determinant factor for property crime.

According to Grogger(1998) age and sex can also affect propensity to commit crime, other things being the same, as young males are presumed to be greater prone to violence. He

identifies the determinants of criminal returns and of the wage responsiveness of criminal participation. In particular, youths 'behaviour appears to be very responsive to price incentives. He also concludes that “wages explain an important component of the racial differential in criminal participation, and they largely explain the age distribution of crime”. He also shows that the reason why blacks participate in crime at a much greater rate than whites can be found in the wage differential between blacks and whites.

Imrohoroglu, Merlo and Rupert (2000) concluded that expenditures devoted to police protection reduce crime, while the crime rate may increase with income redistribution. In fact, economies which adopt relatively more generous redistribution policies may have either higher or lower crime rate than economies with relatively less generous redistribution policies. In particular, they show that in an environment where it is not possible to detect criminals and non-criminals as recipient of transfer payment, increasing government subsidies may increase the crime rate because of the distortionary effects of the higher taxes necessary to finance the subsidy.

Imrohoroglu, Merlo and Rupert (2001) in their model predicts that about 79% of the people engaging in criminal activities are employed and only the remaining 21% are unemployed, this is consistent with the U.S. 1980 data. Furthermore, “the decrease in the unemployment rate does not seem to have any impact on the crime rate. This finding is mostly due to” the fact that “even though the overall unemployment rate is lower in 1996 as opposed to 1980, youth unemployment rates were actually higher in 1996” and “the overwhelming majority of criminals are employed”.

Imrohoroglu et al (2006) used an overlapping generations model in which individuals were allowed to engage in both legitimate market activities and criminal behaviour in order to assess the impact of several economic factors and law enforcement tools on the property crime rate. They examined whether factors like differences in the unemployment rate, the fraction of low-

human-capital individuals in an economy, the probability of apprehension, the duration of jail sentences, and income inequality could generate large differences in the crime rate. Their study concluded that “small differences in the probability of apprehension and in income inequality can generate quantitatively significant differences in the crime rates across similar environments.”

Kizilgol et al (2017) have examined the factors that affect the total number of crimes recorded by the police for EU 28 and Turkey in 2001-2010 using panel count data analysis. Result of their study demonstrates that “GDP per capita, unemployment rate and urbanization have a positive and important effect on the number of crimes.” They also observed higher crime rates in highly urbanised areas. They also found that the increase in the enrolment rate and the number of the police reduces the number of crimes in the direction as expected. Their study did not find clear or significant effect of growth rate and inflation on crime. Haider Ayesha and Ali A (2015) examined some socio economic determinants of crime like population density, education, unemployment, industrialisation and remittances in all districts of Punjab, Pakistan of the period 2010-2011 using Ordinary Least Square (OLS) method. Their study showed that population density, industrialisation and unemployment have positive and significant impact on crimes. They also found that level of education and amount of remittances are inversely related to crimes in all districts of Punjab and the education index has negative and significant impact on crimes volume. Their results indicate that the most dense and populated areas provide more chances for criminals to commit crimes, specially property crimes. They recommended that the government should improve the socio-economic structure and measures should be taken to promote education so crimes volume can be decreased. They also recommended measures to halt increasing population growth. They opined that crimes have direct linkages with school dropout ratio. Education helps in preventing individuals from committing crimes.

Hazra Devika (2021) has investigated determinants of juvenile delinquency in India

and the complex relationship between economic variables and crime rate using data from 2009–2016 across 31 states and union territories. This paper has found that “macroeconomic factors like GSDP per capita and adult unemployment rate are significant in explaining the juvenile crime rate in India. Higher poverty rate and percentage of slums were found to increase juvenile crime”. As expected, this paper also demonstrates the harmful effects that domestic violence has on juvenile delinquency. Finally, education has a deterring impact on crimes relating to juveniles but deterrence factor do not have any deterring effect. This paper has also found that the adult unemployment rate is negatively correlated with juvenile crime, and an increase in police density exhibits a positive association with the juvenile crime rate. Further analysis of crimes by type (property and violent) reveals additional insights. This paper does not find any evidence of a negative impact of juvenile delinquency on economic growth. Author has recommended for economic growth to alleviate poverty and income inequality. It has also been recommended to allocate resources towards education and to support poor families.

Ludwig et. al (2000), using data generated by a randomised housing-mobility experiment conducted on 638 families from high-poverty Baltimore neighbourhoods, studied the effect of relocating families from high to low poverty neighbourhoods on juvenile crime. They tried to find an empirical support to the possibility “that the volume of crime might be related in part to the spatial concentration of low-income families in high-poverty, high-crime urban neighbourhoods”. Criminal activity might be contagious in high-crime areas because the social penalties for committing crime or the probability of arrest might be lower than in other neighbourhoods, as might be the costs of acquiring an important input for crime”. They also concluded that neighbourhood poverty might also affect the actual or perceived returns to schooling and work by affecting access to quality schools, which might depress the opportunity cost of crime. They estimated that the offer to relocate families from high to low poverty neighbourhoods reduces juvenile arrest and violent criminal behaviours by teens on the order of 30 to 50 percent.

Noorishah and Dayang (2022) used annual panel data from 2000 to 2013 to investigate the economic determinants of crime rate in Honduras, Venezuela, El-Salvador, Jamaica, South Africa, Colombia and Bahamas. They found that there are three short run granger causality relationship exist that run from number of tourist arrivals to GDP per capita, from GDP per capita to unemployment rate and from unemployment rate to crime rate. That means increase in the number of tourists arrivals lead to increase in GDP per capita and increase in GDP per capita reduces unemployment rate in the short run. They also found that there is a long run positive relationship between unemployment rate and crime rate. That is increase in unemployment rate leads to increase in crime rate in these seven countries. As a policy prescription they suggests measures to increase tourism, increase GDP per capita and to reduce unemployment rate for reduction in crime rate. Government should take steps to improve technical and vocational education along with encouragement of start up businesses.

Aaltonen et al also using a unique dataset combining data from several administrative registers with a nationally representative sample of 28,485 19 to 30-year-old Finnish citizens, examined socio-economic status (SES) differences in violent offences, property offences and driving while intoxicated. They used multiple measures of SES in order to see what it is in SES that increases crime risk. Their results indicate that, in addition to male gender, SES is strongly associated with all three types of crime, and the predictors are largely similar for all the offence types in question. Long-term unemployment and having only a basic education, in particular, were the most robust predictors of offending. These associations held after controlling for previous criminal involvement as well as other social characteristics, whereas the effect of low income on crime was primarily attributable to prior involvement in crime. Overall, their results imply that there are both causation and selection mechanisms at play.

Nagin and Waldfoegel (1995) in their study have found that conviction increases the job

instability of the young men in economically and statistically significant amount. They have also found that conviction increases the legal income of youth offenders but damages their job prospects. They propose that stigma rather than withdrawal of effort from legal work would explain this effect of conviction. Authors have also tried to explain youth crime through this result. They propose that if conviction increases young worker's income, even in short term, then the deterrent effect of lost income to young potential criminals may be weak, if they heavily discount their future. And, therefore this may encourage or may not discourage youth crime. They therefore, prescribes that if market penalties are not sufficient to provide deterrence to young criminals then a strict sentencing policies may be necessary for young criminals to sufficiently deter them.

Nabeela Khan et al (2015) examined multiple socio economic factors i.e., education, unemployment, poverty and economic growth which contributed to the rate of crimes in Pakistan during the period of 1972-2011. They found a positive relationship between crime rates and unemployment rate in Pakistan. Higher unemployment diminishes the rate of return of legal activities, and is more likely to increase the return of illegal activities. they also found significant negative relationship between the crime rates and the higher education. They opined that more education directly induces high earnings of individuals and may increase both the opportunity cost of crimes and the cost of time spent in criminal activity. They further assessed that GDP per capita leads to higher crime rates in the long-run but to lower rates in the short-run. They explained that higher income showed that "there were greater benefits for criminals as for thefts and robberies. Affluent areas attracted more criminals due to the opportunities available to them". They also found that there was a positive relationship between the crime rates and poverty in the long-run but there was a negative relationship in the short-run. They explained that poverty might lead to a high level of stress and mental illness which in turn causes individuals to adopt the criminal behavior. They proposed that any policy formulation for reducing crime should incorporate both social and economic factors.

Witt et. al (1998) in their empirical investigation for England and Wales. suggest “that continued falls in the relative wages of unskilled men and increases in male unemployment in England and Wales act as incentives to engage in criminal activity.”

Chamlin and Cochran (2000) in their study found that the number of individuals unemployed for 15 weeks or more and the capacity utilisation rate significantly affect the level of property crime. They also contended that long term unemployment or permanent unemployment, rather than temporary joblessness, induces the production of higher level of property crime. This is further substantiated by the null effect of Bureau of labour statistics unemployment rate of USA on the level of property crime.

Britt (1997) studied unemployment crime relationship by testing simultaneously for variation in the unemployment crime relationship by age group and variation in the unemployment crime relationship over time. He used age specific arrest and unemployment time series data for the United states from 1958 to 1995 for his study. His study found that unemployment has a greater motivational effect on property crime among youth and young adults and the unemployment crime relationship varies over time , but this relationship is random than systematic.

Allan and Steffensmeier (1989) examined the relationship between employment conditions and property crime arrest rates of male juvenile and young adults. They found that labour market effects on arrest rates differ for juveniles and young adults. They found that availability of employment produced strong effects on juvenile arrest rates and full time employment was associated with low arrest rates. They also found that unemployment was associated with high arrest rates. They also concluded that low quality employment that is inadequate pay and hours was associated with high arrest rates for young adults. Thus unemployment and poor labour markets can have aggravating effect on crime rate.

Edmark (2005) using panel data of Swedish counties over the years 1988-1999 studied the effects of unemployment on property crime

rates. He used fixed effects model to investigate the hypotheses that increased unemployment rates lead to higher property crime. Result of the study showed that unemployment had a positive and significant effect on property crimes like burglary, car theft and bike theft.

Bilgili and Ulucak (2018) studied socioeconomic determinants of criminal behaviours such as per capita income, unemployment, education level, welfare index, inequality index and price level by applying panel data techniques on 25 European Countries 'data spanning from 1993-2012. Results of their showed that per capita income, education level and welfare index have positive impact while unemployment, income inequality and price level have negative influence on crime.

Nikolaos and Alexandros (2009) analysed the relationship between the criminal offences , the function of the justice system and their socio economic determinants in Greece for the period 1971-2006. They found long run equilibrium relationship among total offences, unemployment, real compensations and convicted persons for the period. They found the economic activities' behavior towards the crime rates as mixed. The effects of unemployment and real compensation have different effect on crime rates. A rise in wages works as an opportunity effect in crime rates and the rise in unemployment has a motivational effect to criminal activities. Sensitivity of this effect is higher in the case of wage rate. They have concluded that “during fluctuations of the business cycles, an economic depression creates the motive for criminal activities, whereas in times of economic prosperity more opportunities are created for gaining profits from illegitimate actions.” The significance of the impact of conviction rates on crime was found to be low. They opine that extra measures concerning the structure and function of criminal justice system is required in order to increase the prevention of criminal activities.

Ankita Thapa (2022) in her study has concluded that “the poverty variable is positively related to the crime categories and significantly impacts total crime. Unemployment reduces total crime through the opportunity effect. The

great recession positively impacted total crime, violent crime, and crime against women. There is a non-linear relationship between the economic growth of states and crime. The economic growth (State's GDPs) positively affects total crime, economic offences, and crime against women". Her study has also found evidence of an inverted U- shaped curve (non-linear relationship) between three crime categories and economic growth. It has also been found that the deterrence variables do not seem to have a deterrence effect on crime in the Indian states. However, their coefficients are highly significant but positive.

Aryal (2024) says that criminal acts are mostly a rational reaction to inadequate resources. It is not mainly indication of individual moral failings. Looking at crime thorough socio economic viewpoint redirects our responses from punitive to structural changes. Therefore he posits that policy makers should focus on fair distribution of resources, increase access to educational and job opportunities. He also suggests to remove the systematic obstacles that sustain inequality. This will reduce the self-fulfilling cycles of poverty and crime and leading to safer communities. He rightly posits that economic inequality erodes societal stability and perpetuates cycle of deprivation and thus deviance. And therefore these disparities need to be removed.

Santhanalakshmi, S in her study has found that 57.5 percent of the female offenders were illiterate and 70 percent of the male offenders were illiterate. 58.33 percent of the responders of this study have accepted economic gain as the main motivating factors for committing crimes. This study has concluded that "the crimes are the product of their circumstances; poverty and the consequent sense of frustration coupled with illegitimate opportunity structures could lead to crime." This study has also concluded that the most of the offenders come from the poor background. Economic deprivation leads to criminality.

Yousuf et al (2022) aimed to identify the socioeconomic determinants of crime in Pakistan and India and compare the results of both the countries. Their result showed that "in Pakistan education and poverty are the

important determinants of crime in the long run whereas in the short-run education is found to be the key cause of crime. On the other hand, in India poverty is an important determinant of crime. Authors prescribed that the policymakers may focus on increasing the level of education and reducing poverty for reduction in crime.

Vicente et al (2020) in their study of dowry deaths in districts of Uttar Pradesh detected significant associations between dowry deaths and sex ratio, murders and burglaries. They concluded that the positive association between dowry deaths and murders and burglaries confirms that, in general, areas with high overall crime rates also have high rates of crimes against women. In their study the other two covariates, population density and per capita income, were not found to be significantly associated with the dowry death.

Bharadwaj Ashish (2014) finds a positive and statistically significant impact of poverty, inequitable income growth and low quality of the legal system on incidence of total property related crimes. His result also suggests that property crime increases with incidence of absolute poverty. His paper has also concluded that income distribution and social structure apparently have impact on property crime activity when controlled for other socioeconomic factors. Effective poverty alleviation programmes along with strong criminal justice actions is consistently supported in reducing crime. He has also concluded that the elasticity figures suggest that poverty has the highest impact on robberies. The most important result of his study comes from the figures of elasticity of education with crime where a 10% increase in per capita expenditure on education in India leads to a decline between 9.2-11.2% of overall property crime rates. He has also indicated that "macroeconomic stability (especially high growth and employment) policies, *per se*, cannot reduce property crimes. These policies only if combined with pulling poor people above poverty line, raising their standard of living and social progress can abate crime." He has recommended that enhancing human capital accumulation can reduce crime, which can be carried out through strengthening

education system and making education institutions robust and efficient can upgrade labour market productivity and expected incomes of individuals. He has also opined that this combined with suitable deterrence measures and good quality reliable judiciary are likely to be most critical ingredients in reducing crime.

Hazra (2020) uses data from 2010–2016 across 32 states and union territories to investigate the determinants of crime and the relationship between crime rate and socioeconomic conditions in India. He found that among the macroeconomic factors, only GSDP per capita was relevant in explaining total crime rates. Higher GSDP per capita incentivises total crime rates. But, unemployment rates have no impact on total crime rates. He also found that the unemployment rate and price level are crucial in explaining some categories of crime only. This paper found that a rising price level exhibits no statistically significant relationship with aggregate crime rate. But, he also concluded that an increase in prices tends to impact specific groups of crimes such as violent crime, property crime and white-collar crime.

Wolpin (1978) found that participants of criminal justice system were making increasing use of fines and probation for social justice goals. Their study found that reduced crime rates were not associated with greater police expenditures. He also found that due to deterrent effect crime rate fell when use of imprisonment was increased.

Abraham (2012) has found that unemployment and wage inequality are key variables that could explain crime rate in India specially crime on body. He has also found that education seems to reduce crime on property. Another of his finding is that efficient judicial delivery system deters crime. His result, however, finds the role of police as a deterrent to be ambiguous and therefore suggests further research on this.

Berk et al (1980) used a randomised experiment undertaken with over 2000 ex-offenders in the states of Texas and Georgia in which unemployment benefits were extended to individuals immediately upon release from

prison. They studied the importance of unemployment benefits to the ex-offenders and its impact on crime rate. They found that unemployment benefits helped in reducing crime rate. This supports the idea of providing financial stability and welfare measures to contain crime. Farmington et al (1986) studied official crime rate in 411 London males who were part of Cambridge study in delinquent development. It was found that crime rates, particularly of offences involving material gain, were higher during periods of unemployment than during periods of employment. This was particularly true for person of young ages (15 - 16 years) when youths are more prone to delinquency and for youths with lower status jobs. It was found that there was little difference between crime rates just before leaving school and just afterwards in full employment. It was also found that proportionally more crimes were committed by young youths during periods of unemployment than during periods of employment. They concluded that unemployment was related to crime specially committing crimes for material gain. Thus we can say there is a link between unemployment and crime for financial need.

Buonanno (2006) investigated the relationship between labour market conditions and crime in Italy using regional data over the period 1993-2002. His study concluded that unemployment has a large and positive effect on crime rates in southern regions of Italy. Allen (1996) finds that macroeconomic stability and criminal justice system actions work in reducing crime activity. However, his findings also suggest that fall in absolute poverty and general income inequalities are associated with increased criminal activity. He also found that age demographics and family or community structure have little impact on any of the analysed property crime trends. According to his findings reduction in inflation apparently decreases property crime. His study thus conforms to the larger literature about the direction influence of socioeconomic factors on crime. Bhattacharya et al (2022) explored the determinants of crimes (such as dowry death, rape, molestation and torture) in India. Their study suggests that states which exhibits high incidence of molestation also experience high incidence of rape and torture. Similar result was

also seen in case of torture and dowry death with their association. They used both global and local Moran's indices for dowry death and observed that space and neighbourhood effects do matter. Spatial panel regression result on dowry death shows that space and neighbourhood effect explains variations in dowry death, however female work force participation and higher number of police station significantly reduce the incidence of torture, molestation and dowry death. Their study did not find significant association between urbanisation and crime against women.

He has also concluded that the demographic factor, i.e. population density, socioeconomic factors, i.e. income inequality, poverty rate, literacy rate exhibit important and significant relationship with crime rates in India. population density is positively associated with crime rates. Increase in poverty rates and income inequality increases crime rates. His study has also exhibited that education is positively correlated with crime rates. He has tried to attribute this positive relationship to white-collar crimes. He tried to explain this by opining that in a developing country like India, white-collar crimes tend to increase as literacy rates increase. He has proposed "white-collar crimes thrive on weak institutions and poor governance, both of which seem prevalent in India". He has further proposed measures to reduce the number of white-collar crimes like "proper enforcement of anti-corruption laws in India, improved and transparency in governance, and implementing of fraud prevention measures by the private sector". He has also proposed the use of public service announcements as a channel of communication to increase awareness among individuals regarding accessibility to ombudsmen, common laws governing corruption, and sound governance. He has recommended for policies that lead to greater employment opportunities for the educated masses. He has suggested that "policies should be undertaken to alleviate poverty and income inequality. Social security programs, increasing education facilities and local-level technical training for the poor would help alleviate poverty more effectively and rapidly. As incomes of the poor rise with increase in gainful employment, and inequality

diminishes, reliance on crime as a means of livelihood would be expected to decrease." In his study amongst four deterrence factors, chargesheeting rate, conviction rate, pendency in police cases are important in explaining various categories of crime rates in India. Surprising result of his study is higher conviction rate raises total crime rates as well crime rates of each category analysed in this study. He has also found that an increase in pendency in police cases raises IPC crime rates, which is indicative of flaws within law enforcement and the justice system in India. He has also suggested for probing of law enforcement, criminal detection system and judicial system to uncover potential flaws and strengthening these institutions for better efficiency. He has also recommended for provision of rehabilitation facilities for those convicted might potentially alter criminal behaviour.

Bipin Varghese and Michael Raj (2014) opines that morality is the key faculty of human mind that enables an individual to take right moral decisions, which reflects in terms of his moral behaviour. They conclude that in Indian context the alarming increase of the crime rates and incidents of harm towards individual shows decline in morality. They conclude this on presumption that increase in crime in the society is co-related to decline in morality in the society. Morality being the most deterring factor of crime and deviant behaviour, it is required to take steps to build moral society. They also propose that efforts should be made to formulate methods of intervention to impart awareness and moral education.

Tim Hope et al (2001) found that there is a significant and positive relationship between the chance of becoming a victim of property crime and that of becoming a victim of a personal crime. They tried to explain it through risk factors shared by both types of crimes. They also concluded that relationship between them is neither causal nor deterministic. They have also found that prior victimisation experience seems to affect present victimisation risk across all crime types. They have tried to explain this through concentration of social disadvantage both in people's lives and communities in which they live.

Aebi (2004) during his study of police recorded crime rate of nine offences over the period 1990-2000 found that there was an increase in drug and violent offences, while property offences reached a peak at the beginning of 1990s and started decreasing afterwards. They opined that emergence of large black market for stolen goods in central and Eastern Europe may be reason behind peak in property offences. Later fall in their rate may due to proactive police actions, security measures in households and saturation in stolen goods market. They also found correlation between increase in drug offences and rise in drug use along with availability of drugs in the European market. They have also tried to explain upward trend in violent offences due to gang struggles over the control of illegal markets and the consolidation of problematic neighbourhoods. This increase may also be because of increase in reporting by victims and recording by police. Thus this substantiates the correlation amongst crimes. They have also concluded that opportunity based theories provide a satisfactory explanation of trends in crime. Crime opportunities are also influenced by socio economic factors.

Conclusion

The above review of literature shows that economic factors like income, labour market conditions, unemployment, poverty, inequality, education and social factors like family, domicile, peer influence, availability of drug use and alcohol etc play significant role in crime and criminal behaviour. Direction of influence has not been same in all the empirical studies. The above discussion shows that income has an impact over crime and criminal behaviour. Low income countries are afflicted with high crime rates. Similarly prevalence of income inequality increases crime in the society. Unemployment also affects crime rates. High rate of unemployment largely correlated with the high crime rate. Education has positive and significant effect in reducing crime. High level of education leads to high income level and therefore it deters person to commit crime as his opportunity cost is high. Education also makes a person visualize the

negative effect of crime in the long run. Urbanization also makes impact over crime rate. Above discussion shows that in across the world urbanization has led increase in crime rate. In the above discussion it has also been found that other conducive factors of crime like availability of drug, liquor, peers influence and family crime history do play major role in crime rate and crime behaviour. There are various socio economic factors which affect crime rate. Initially it was emphasised that poverty and social deprivation affected crime rates. Employment and low income level were also found to be positively associated with crime rates. Later theorists viewed criminals as rational economic agent who weighs costs and benefits while deciding whether to commit crime or not. With the development of deterrence theory effects of police presence, convictions, and the severity of punishment were also studied on the level of criminal activity. It was also postulated that the potential criminals assess both the risk of being caught and the associated punishment. The empirical study made in both developed and developing countries have confirmed that deterrence have a negative effect on crime rates.

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RADICAL REASON AND SOCIAL EMANCIPATION: RE-READING E. V. RAMASAMY (PERIYAR) IN THE MAKING OF ANTI-CASTE MODERNITY IN SOUTH INDIA

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Abstract

This paper critically re-examines the intellectual and political legacy of E. V. Ramasamy (Periyar), one of the most uncompromising social reformers in modern Indian history. Situating Periyar within the broader currents of colonial modernity, anti-caste resistance, and rationalist thought, the study argues that his interventions constituted a distinctive project of *anti-caste modernity* that fundamentally challenged Brahmanical social order, religious orthodoxy, and cultural nationalism. Unlike reformist traditions that sought gradual accommodation within existing hierarchies, Periyar advanced a radical critique of caste, patriarchy, and the sacred foundations of social power, advocating reason, self-respect, and social equality as the core principles of human emancipation.

Drawing upon Periyar's writings, speeches, and political practices, the paper demonstrates how his Self-Respect Movement articulated a counter-public sphere that redefined notions of dignity, morality, and citizenship for marginalized communities. The analysis further highlights Periyar's sharp critique of nationalism and Hindu majoritarianism, revealing the tensions between dominant nationalist narratives and subaltern social justice movements in India. By foregrounding Periyar's rationalism, atheism, and feminist interventions, the paper shows how his thought anticipated many contemporary debates on secularism, social justice, and identity politics.

The study concludes by asserting that Periyar's legacy remains deeply relevant for understanding the unfinished project of social democracy in India. His vision of a society grounded in reason rather than ritual, and equality rather than hierarchy, offers critical insights for rethinking caste, power, and democracy in the twenty-first century.

Keywords- E. V. Ramasamy (Periyar); Anti-Caste Thought; Self-Respect Movement; Rationalism; Dravidian Movement; Social Justice; Caste and Modernity; South Indian Political Thought

1. Introduction

The struggle against caste hierarchy constitutes one of the most persistent and deeply entrenched dimensions of Indian social history. Unlike class-based inequalities, caste operates simultaneously at the levels of social structure, cultural practice, moral imagination, and everyday life, making it remarkably resilient to political change. While the nationalist movement against colonial rule generated

powerful narratives of freedom, unity, and self-determination, mainstream nationalist historiography has tended to privilege the anti-colonial struggle while marginalizing questions of internal social domination. As several scholars have pointed out, the promise of political independence was often articulated without a corresponding commitment to dismantling caste-based hierarchies, resulting in what has been described as a "partial" or

“truncated” modernity (Omvedt 1994; Pandian 2007).

It is within this historical and ideological context that the intellectual and political interventions of E. V. Ramasamy (Periyar) assume a distinctive and critical significance. Periyar emerged not simply as a social reformer but as a radical critic of the moral and cultural foundations of Indian society. Unlike reformist traditions that sought to humanize or soften caste through moral appeals or selective reinterpretations of scripture, Periyar directly confronted the ideological roots of caste embedded in religion, ritual, and inherited authority. For him, caste was not an accidental distortion of an otherwise harmonious social order; it was the central organizing principle of Brahmanical society, sustained through sacred sanction and cultural consent (Geetha and Rajadurai 1998).

Periyar’s critique acquired particular sharpness because it targeted not only orthodox religion but also dominant strands of Indian nationalism. He was deeply skeptical of nationalist politics that invoked cultural unity while leaving intact the social privileges of dominant castes. In his view, nationalism that failed to address caste inequality merely transferred power from colonial rulers to indigenous elites, without transforming the lived realities of the oppressed. This position placed him at odds with mainstream nationalist leaders who attempted to reconcile tradition with modern political institutions. Periyar, by contrast, rejected the sacralization of tradition itself, arguing that social progress required a decisive break from inherited beliefs that legitimized inequality (Pandian 2007).

This paper argues that Periyar’s thought represents a radical project of anti-caste modernity, one that challenged both colonial authority and indigenous structures of domination. His conception of modernity did not revolve around industrial development or constitutional reform alone, but around the ethical transformation of social relations. Reason, self-respect, and equality formed the core principles of this project. Rationalism, for Periyar, was not an abstract philosophical commitment but a practical method for exposing the arbitrary and oppressive nature of

social customs. By encouraging individuals to question religious dogma, ritual practices, and priestly authority, he sought to cultivate critical consciousness among non-Brahmin and marginalized communities (Irschick 1969).

Central to Periyar’s intervention was the insistence that dignity and self-respect were political categories. Through movements such as the Self-Respect Movement, he emphasized that emancipation could not be achieved solely through state policy or legal reform; it required a transformation of everyday life, including marriage practices, gender relations, language, and cultural symbols. His focus on lived experience distinguished his politics from elite-driven reform agendas and anchored his thought firmly in the social realities of subaltern groups (Omvedt 1994).

The central objective of this paper is to critically re-read Periyar’s ideas in order to assess their theoretical coherence, historical significance, and contemporary relevance. Rather than treating him as a regional or purely activist figure, the paper approaches Periyar as a social thinker whose work offers a sustained critique of hierarchy, authority, and cultural nationalism. By situating his interventions within broader debates on modernity, rationalism, nationalism, and social justice, the study seeks to demonstrate that Periyar’s legacy extends well beyond the specific context of South India. His thought continues to illuminate the contradictions of Indian democracy, particularly the tension between formal political equality and enduring social inequality.

In an era marked by renewed assertions of cultural majoritarianism and persistent caste-based exclusions, revisiting Periyar’s radical critique is not merely an exercise in intellectual history. It is an essential step toward understanding the unfinished project of social democracy in India and the continuing struggle to align political freedom with substantive social justice.

2. Historical Context: Caste, Colonialism, and Non-Brahmin Assertion

Periyar’s political awakening must be situated within the complex socio-historical conditions

of late colonial South India, where colonial governance, indigenous social hierarchies, and emerging democratic ideas interacted in deeply contradictory ways. British colonial rule did not dismantle caste as a system of social power; rather, it reconfigured and, in many respects, reinforced it. Through administrative practices such as census enumeration, legal codification of personal laws, and recruitment patterns in education and bureaucracy, the colonial state gave new institutional visibility and rigidity to caste identities (Dirks 2001). While colonial modernity introduced ideas of equality, representation, and rights, these ideals remained unevenly distributed, often benefiting socially dominant castes—particularly Brahmins—who were better positioned to access Western education and colonial employment.

In the Madras Presidency, Brahmanical dominance became especially pronounced in the spheres of administration, law, education, and cultural production. English education, far from being a neutral instrument of progress, functioned as a selective gateway that reproduced existing hierarchies under the guise of merit (Irschick 1969). This produced what many contemporaries experienced as a paradoxical modernity: a political order that spoke the language of equality while sustaining inherited privilege. It was within this context that non-Brahmin consciousness began to crystallize as a collective response to social exclusion and symbolic domination.

The emergence of non-Brahmin movements in the early twentieth century reflected a growing realization that political representation without social transformation would merely reproduce caste power in new forms. Organizations such as the South Indian Liberal Federation (Justice Party) articulated demands for communal representation, access to education, and state employment, challenging Brahmanical monopoly over public institutions. However, these movements were not merely about material redistribution; they also sought cultural recognition and social dignity for communities historically stigmatized as inferior (Pandian 2007).

It was against this backdrop that E. V. Ramasamy (Periyar) entered public life. His

early involvement with the Indian National Congress initially reflected the widespread belief that national independence would open the path to social reform. However, Periyar's experiences within the Congress—particularly his encounters with caste discrimination and the organization's reluctance to prioritize anti-caste measures—led to deep disillusionment. He became increasingly critical of nationalist politics that celebrated unity while leaving intact the everyday practices of hierarchy. For Periyar, the Congress's emphasis on symbolic nationalism and cultural revivalism appeared fundamentally incompatible with the project of social equality (Geetha and Rajadurai 1998).

Periyar's eventual break from the Congress marked a decisive shift toward an independent political and ideological trajectory grounded in rationalism and egalitarianism. This rupture was not merely organizational but philosophical. He rejected the assumption that caste could be gradually reformed through moral persuasion or constitutional adjustment. Instead, he argued that caste was sustained by deeply entrenched belief systems—particularly religious doctrines and ritual practices—that required direct and sustained critique. In this sense, Periyar moved beyond the dominant frameworks of both colonial liberalism and nationalist reformism.

The founding of the Self-Respect Movement in 1925 represented a watershed moment in South Indian social thought. Unlike conventional political organizations focused on electoral politics or legislative reform, the Self-Respect Movement was conceived as a broad cultural intervention. Its aim was to transform everyday social practices—marriage, kinship, gender relations, language use, and religious observance—through the principles of dignity, reason, and equality. Practices such as self-respect marriages, which rejected priestly mediation and religious ritual, symbolized a direct challenge to Brahmanical authority over social life (Omvedt 1994).

What distinguished the Self-Respect Movement was its insistence that emancipation was as much a matter of consciousness as of institutional change. Periyar consistently argued that legal equality would remain hollow unless individuals internalized a sense of self-

worth and rejected the moral legitimacy of caste hierarchy. This emphasis blurred the boundaries between the social and the political, redefining politics as a struggle over meaning, values, and everyday conduct rather than merely state power. In doing so, Periyar articulated a form of radical social critique that anticipated later cultural and ideological analyses of domination.

Thus, Periyar's historical context was not simply one of colonial oppression but of layered inequalities produced by the intersection of empire, caste, and nationalism. His response to this context—rooted in rationalism, anti-caste ethics, and cultural transformation—laid the groundwork for a distinctive tradition of non-Brahmin assertion that continues to shape social and political debates in South India and beyond.

3. Rationalism as a Method of Social Critique

At the core of E. V. Ramasamy (Periyar)'s thought lies an uncompromising commitment to rationalism, which he conceptualized not as an abstract philosophical doctrine but as a concrete and socially embedded method of critique. For Periyar, reason was inseparable from the struggle against domination. It was a practical instrument through which inherited inequalities could be questioned, delegitimized, and ultimately dismantled. He repeatedly emphasized that caste did not survive because of any intrinsic moral or divine logic, but because generations had been trained to accept it as natural, inevitable, and sacred. In this sense, rationalism functioned as a disruptive force, unsettling the habits of obedience and belief that sustained hierarchical social relations.

Periyar's rationalism must be understood as deeply social rather than merely intellectual. Unlike Enlightenment rationalism, which often remained confined to elite philosophical discourse, Periyar directed his critique toward everyday practices and popular beliefs. He argued that social oppression endured because people were discouraged from questioning authority—whether that authority took the form of religious scripture, priestly interpretation, or customary norms. By encouraging critical

inquiry among non-Brahmin and marginalized communities, Periyar sought to cultivate what may be described as a democratization of reason. Rational thinking, in his view, was not the preserve of scholars or elites; it was a necessary capacity for all those subjected to social humiliation and exclusion (Geetha and Rajadurai 1998).

This perspective shaped Periyar's sustained critique of religion. His opposition was not aimed at individual spirituality or private belief, but at organized religion as an institutionalized system of power. He argued that religious doctrines, particularly those rooted in Brahmanical Hinduism, provided ideological justification for caste hierarchy by presenting social inequality as divinely ordained. Sacred texts, ritual prescriptions, and mythological narratives were, in his analysis, mechanisms through which domination was normalized and moralized. By questioning the authority of these texts and exposing their social consequences, Periyar sought to sever the link between the sacred and the social order (Pandian 2007).

Rationalism thus became, in Periyar's formulation, a form of intellectual self-defense for oppressed communities. It offered a language through which they could reject the moral legitimacy of their subordination. This was especially significant in a society where caste oppression was internalized as destiny rather than recognized as injustice. Periyar insisted that once people learned to ask why a particular custom existed and whom it benefited, the aura of inevitability surrounding caste would begin to dissolve. Rational critique, therefore, was inseparable from psychological and cultural emancipation (Omvedt 1994).

Periyar's radical skepticism placed him in direct conflict with orthodox religious leaders, who viewed his ideas as an attack on tradition and social order. At the same time, it brought him into tension with nationalist thinkers who regarded religion as a unifying cultural force essential for mobilizing anti-colonial resistance. For many nationalists, religious symbolism and cultural revivalism were tools for forging collective identity. Periyar, however, argued that such unity was deeply exclusionary, as it rested on hierarchies that

marginalized large sections of society. In his view, a nationalism that relied on religious tradition without dismantling caste merely reproduced social domination under the banner of national pride (Irschick 1969).

What makes Periyar's rationalism particularly significant is its anticipation of later sociological critiques of ideology. Long before such ideas became central to academic discourse, Periyar recognized the intimate relationship between knowledge and power. He understood that dominant ideas are not neutral truths but reflections of social interests, sustained through institutions and cultural authority. His insistence on questioning "why things are the way they are" resonates strongly with later critical traditions that emphasize how belief systems legitimize unequal power relations (Dirks 2001).

Importantly, rationalism in Periyar's vision was inseparable from ethical responsibility and social justice. Reason was not an end in itself, nor was it a purely negative force aimed at destruction of belief. It was a moral commitment to equality, dignity, and human freedom. Periyar repeatedly stressed that rational thinking must lead to compassionate social action, particularly in defense of those subjected to humiliation and exclusion. In this sense, rationalism became both a method of critique and a normative foundation for an alternative social order.

By grounding rationalism in lived experience and social struggle, Periyar transformed it into a powerful tool of anti-caste politics. His approach demonstrates that reason, when deployed against entrenched hierarchies, can function as a deeply emancipatory force—one capable of challenging not only unjust institutions but also the cultural and psychological foundations upon which they rest.

4. The Self-Respect Movement and the Politics of Dignity

The Self-Respect Movement stands as the most significant and enduring institutional innovation associated with E. V. Ramasamy (Periyar), marking a decisive shift in the terrain of social and political struggle in South India.

Launched formally in 1925, the movement was rooted in the conviction that caste oppression was sustained not only through economic deprivation or political exclusion, but also through everyday practices of humiliation that shaped how individuals perceived themselves and others. At its core, the Self-Respect Movement sought to cultivate dignity among those who had been systematically devalued by caste society, emphasizing that social emancipation required a profound transformation of consciousness alongside structural change (Geetha and Rajadurai 1998).

Unlike conventional political movements that focused primarily on representation, legislation, or electoral participation, the Self-Respect Movement addressed the intimate domains of social life where hierarchy was most deeply entrenched. Practices such as the rejection of Brahmanical rituals, the critique of religious symbolism, and the assertion of cultural autonomy were designed to disrupt the moral authority of caste in everyday interactions. Periyar argued that as long as individuals internalized notions of inferiority sanctioned by religion and custom, formal equality would remain hollow. The movement therefore treated dignity not as a derivative outcome of political reform but as a foundational principle of social justice (Pandian 2007).

Marriage reform occupied a central place in the movement's agenda because marriage functioned as one of the key sites through which caste, patriarchy, and religious authority intersected. Traditional marriage rituals, presided over by priests and sanctified through religious texts, reinforced caste boundaries, gender subordination, and the symbolic power of Brahmanical authority. By advocating self-respect marriages—ceremonies conducted without priests, Sanskrit chants, or religious sanction—Periyar directly challenged the notion that moral legitimacy flowed from sacred tradition. These marriages emphasized consent, equality, and rational agreement between partners, thereby redefining marriage as a social contract rather than a religious sacrament (Omvedt 1994).

Importantly, these interventions were not merely symbolic acts of defiance. They

represented a broader attempt to democratize social relations by relocating authority from religious institutions to individuals themselves. In questioning who had the right to solemnize marriage, define morality, or regulate intimate life, the Self-Respect Movement destabilized long-standing hierarchies of knowledge and power. Through such practices, the movement translated abstract ideals of equality and rationalism into lived social experience, making dignity a tangible and everyday reality rather than an abstract moral claim (Irschick 1969).

The Self-Respect Movement also foregrounded women's emancipation as integral to the struggle against caste oppression. Periyar consistently argued that patriarchy and caste were mutually reinforcing systems of domination. Practices such as child marriage, enforced widowhood, denial of education, and rigid sexual morality were not merely cultural traditions but mechanisms through which women's subordination was normalized and reproduced. By attacking these practices, Periyar linked the question of gender justice directly to the broader project of social equality (Geetha 1998).

Periyar's interventions on women's rights were strikingly radical for their time. He advocated women's education, supported widow remarriage, criticized the glorification of female chastity, and defended women's right to choose their partners. While his language occasionally reflected the limitations and assumptions of his historical context, his core argument—that women could not achieve freedom within a social order structured by caste hierarchy—remains analytically powerful. He rejected reformist approaches that sought to improve women's status while leaving patriarchal and caste structures intact, insisting instead on a comprehensive rethinking of social norms (Omvedt 1994).

The politics of dignity articulated through the Self-Respect Movement thus represented a fundamental redefinition of political action. By focusing on everyday practices, moral authority, and self-perception, the movement blurred the boundaries between the social and the political. It asserted that emancipation was not solely a matter of rights granted by the state,

but of reclaiming humanity from systems that thrived on degradation. In doing so, Periyar and the Self-Respect Movement laid the foundations for a radical anti-caste politics that emphasized ethical transformation, cultural resistance, and social equality as inseparable dimensions of democratic life.

Below are expanded, Springer-style sections, each approximately 300 words, written in humanized academic prose, with suitable scholarly citations and conceptual continuity with earlier sections. The tone and structure are aligned for a high-quality research journal.

5. Critique of Nationalism and Cultural Majoritarianism

One of the most provocative and enduring aspects of E. V. Ramasamy (Periyar)'s thought lies in his sustained critique of Indian nationalism. Periyar viewed dominant nationalist narratives as deeply intertwined with Brahmanical social values and symbolic Hindu unity. While nationalism claimed to represent the collective will of the Indian people, he argued that it often concealed the continued dominance of upper-caste elites by framing caste hierarchy as cultural tradition rather than structural injustice. In this sense, nationalism that failed to confront caste inequality did not dismantle social domination but merely rearticulated it within a new political framework (Pandian 2007).

Periyar was particularly critical of the cultural idioms through which nationalism operated. He observed that symbols, myths, and historical narratives drawn from Sanskrit and Brahmanical traditions were projected as universal markers of Indian identity. Such representations marginalized non-Brahmin histories, languages, and cultural practices, reinforcing the idea that national culture was synonymous with upper-caste Hindu culture. For Periyar, this form of cultural nationalism imposed a homogenized identity that erased internal diversity while legitimizing inherited privilege (Geetha and Rajadurai 1998).

This critique extended to language politics and historical memory. Periyar challenged the elevation of Sanskrit as a civilizational language and questioned the moral authority

attached to ancient texts that sanctified social hierarchy. His emphasis on Dravidian identity must be understood in this context—not as ethnic chauvinism, but as a strategic assertion of cultural autonomy against hierarchical domination. Dravidian identity functioned as a counter-discourse that exposed the exclusions embedded in nationalist narratives and reclaimed dignity for communities relegated to the margins of history (Ramasamy 2011).

By interrogating nationalism from the standpoint of social justice, Periyar anticipated later subaltern and postcolonial critiques that reveal how nation-building projects often silence internal inequalities. His position highlights a fundamental tension between political independence and social emancipation—a tension that continues to shape debates on democracy, citizenship, and belonging in contemporary India.

6. Periyar and the Idea of Anti-Caste Modernity

Periyar's intellectual contribution can be most productively understood through the conceptual lens of anti-caste modernity. Unlike dominant Western narratives of modernity that emphasize industrialization, technological progress, or liberal individualism, Periyar articulated a vision of modernity rooted in ethical transformation and social equality. For him, a society could not be considered modern as long as it remained structured by inherited hierarchy, ritualized inequality, and uncritical obedience to authority (Omvedt 1994).

Central to this vision was the rejection of tradition as an unquestioned moral resource. Periyar argued that tradition acquired legitimacy not through intrinsic value but through repetition and power. Customs that degraded human dignity—however ancient—had to be discarded rather than reinterpreted. This position sharply distinguished him from reformist thinkers who sought to harmonize tradition with modern values. Periyar believed that caste could not be reformed incrementally; it had to be annihilated through sustained critique, cultural rupture, and the cultivation of rational consciousness (Geetha 1998).

Anti-caste modernity, in Periyar's framework, emphasized equality, dignity, and reason as foundational social principles. It required the democratization of knowledge, the desacralization of authority, and the reorganization of social relationships on non-hierarchical lines. Importantly, this was not a derivative imitation of Western modernity but an indigenous response to local structures of domination. Periyar's modernity was deeply contextual, shaped by the lived experiences of non-Brahmin and marginalized communities in South India.

As an analytical framework, anti-caste modernity remains valuable for understanding social movements that challenge entrenched hierarchies. It draws attention to cultural struggle as a critical dimension of social change, complementing political and economic reform. Periyar's thought thus expands our understanding of modernity itself, revealing it as a contested and plural process rather than a singular historical trajectory.

7. Contemporary Relevance and Legacy

In contemporary India, debates surrounding caste, secularism, nationalism, and social justice continue to echo themes central to Periyar's thought. Despite constitutional guarantees of equality, caste-based discrimination remains deeply embedded in social practices, political institutions, and cultural representations. The resurgence of religious majoritarianism and the increasing use of cultural nationalism in public life underscore the unfinished nature of the emancipatory project that Periyar envisioned (Guru and Sarukkai 2012).

Periyar's emphasis on critical thinking and rational inquiry is particularly relevant in an era marked by the politicization of belief and the normalization of inequality through cultural narratives. His insistence that social justice must be grounded in dignity and self-respect challenges contemporary frameworks that reduce democracy to electoral participation or formal rights. For Periyar, democratic citizenship required the ability to question authority, reject humiliation, and participate in social life as an equal moral agent.

The legacy of Periyar also extends into contemporary movements for social justice, feminism, and anti-caste activism. His critique of patriarchy, emphasis on women's autonomy, and rejection of symbolic unity at the cost of equality resonate strongly with present-day struggles against intersectional forms of oppression. At the same time, engaging with Periyar's legacy requires critical reflection, acknowledging both the strengths and limitations of his historical context.

Rather than confining Periyar to regional politics or historical memory, this paper argues for recognizing him as a critical social theorist. His ideas speak not only to Indian society but to global struggles against hierarchy, exclusion, and moral domination, making his thought relevant far beyond its original context.

8. Conclusion

This paper has attempted to re-read E. V. Ramasamy (Periyar) not merely as a regional social reformer or a polemical public figure, but as a radical thinker of anti-caste modernity whose ideas continue to illuminate the unresolved contradictions of Indian society. By placing rationalism, dignity, and social equality at the centre of political life, Periyar articulated a vision of emancipation that directly confronted both colonial domination and indigenous structures of hierarchy. His thought challenges the tendency to treat caste as a secondary social problem and instead insists that it is foundational to understanding power, culture, and inequality in India.

One of the most enduring contributions of Periyar lies in his refusal to separate political freedom from social justice. His interventions consistently exposed the limits of nationalist politics, religious reform, and cultural revivalism when these projects failed to address caste-based domination. For Periyar, independence without social equality risked becoming a transfer of power from colonial rulers to entrenched elites. His critique forces a rethinking of nationalism itself, asking whose interests are served when unity is invoked without confronting deeply unequal social relations. In this sense, Periyar's thought unsettles comfortable narratives of progress and compels a more honest engagement with

the moral failures embedded within modern Indian history.

Periyar's critique of religion and cultural authority remains particularly relevant in contemporary times. By questioning the sacred foundations of social hierarchy, he demonstrated how belief systems can naturalize inequality and shield power from criticism. Importantly, his opposition was not to faith as a personal matter, but to the institutional use of religion as a means of social control. This distinction allows Periyar's rationalism to be understood not as nihilistic rejection, but as an ethical stance grounded in human dignity. His insistence that people must learn to question inherited beliefs continues to resonate in an era marked by the politicization of religion and the normalization of exclusion through cultural narratives.

Equally significant is Periyar's insistence that equality must be lived in everyday life, not merely guaranteed by law. He understood that constitutional rights and legal reforms, while necessary, are insufficient if social practices continue to reproduce humiliation and exclusion. By emphasizing self-respect, critical reason, and ethical transformation, Periyar offered a substantive conception of democracy—one that extends beyond institutions to include social relations, cultural meanings, and moral responsibility. This vision challenges formalistic understandings of democracy that prioritize procedure over lived experience.

Engaging with Periyar's legacy today invites a deeper reflection on the ethical foundations of democratic life. His thought urges us to ask difficult questions about power, privilege, and moral authority, and to confront the ways in which inequality adapts and survives within modern political frameworks. At a time when debates over identity, nationalism, and social justice are increasingly polarized, Periyar's uncompromising commitment to equality and reason offers a critical lens for reimagining the relationship between freedom and justice.

Ultimately, Periyar's work reminds us that the project of modernity in India remains unfinished. Without the annihilation of social hierarchy, political freedom risks becoming

hollow, and equality remains a promise rather than a reality. His thought continues to serve as a powerful reminder that true emancipation requires not only structural change but also a transformation of values, consciousness, and everyday social life.

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SOCIO-DEMOGRAPHIC TRANSITIONS AND OBSTETRIC OUTCOMES: A COMPARATIVE ANALYSIS OF DELAYED MARRIAGE AND SAFE MOTHERHOOD IN PATNA AND BHAGALPUR

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Abstract

Bihar has historically been characterized by early marriage and high fertility; however, its urban centers are now experiencing a significant reordering of women's life courses marked by delayed marriage and postponed childbearing. While this transition is widely interpreted as an indicator of socio-economic advancement, its implications for maternal health remain insufficiently examined in institutionally constrained settings. This study investigates how delayed marriage, understood through a life-course and bio-social risk framework, shapes obstetric outcomes and healthcare utilization in the urban contexts of Patna and Bhagalpur. Adopting a descriptive-analytical cross-sectional design, the study draws on primary survey data, clinical record reviews, and facility-level assessments of 400 primigravida women aged 18–40 years who accessed antenatal and delivery services in public and private healthcare institutions across the two cities. Participants were stratified into traditional (18–24 years) and delayed (≥ 28 years) marriage cohorts to enable comparative analysis. Statistical techniques, including chi-square tests and multivariate logistic regression, were employed to assess associations between age at marriage and obstetric outcomes while controlling for socio-economic and healthcare access variables. The findings reveal a pronounced urban risk gradient. Patna exhibits a higher concentration of advanced maternal age pregnancies, elevated rates of gestational diabetes mellitus, and significantly greater reliance on caesarean delivery, supported by dense private healthcare and assisted reproductive technologies. In contrast, Bhagalpur demonstrates a rising prevalence of hypertensive disorders, delayed antenatal registration, and greater dependence on public-sector facilities and inter-city referrals due to infrastructural constraints. Delayed marriage emerged as an independent predictor of adverse obstetric outcomes across both settings. The study concludes that delayed marriage in urban Bihar represents neither an unqualified marker of empowerment nor a uniform health risk. Instead, its maternal health implications are contingent upon the alignment between women's life-course trajectories and the capacity of urban healthcare systems. The findings underscore the need for city-specific, age-responsive maternal health strategies that integrate advanced diagnostics, mental health support, and infrastructural parity to ensure safe motherhood amid ongoing demographic transition.

Keywords: Delayed Marriage; Advanced Maternal Age; Life-Course Perspective; Bio-Social Risk; Obstetric Outcomes; Urban Bihar; Safe Motherhood

1. Introduction: Delayed Marriage, Life-Course Reordering, and the Urban Bihar Paradox

Marriage and childbearing in India have historically followed a tightly sequenced life-course pattern, particularly in states such as Bihar, where early marriage and high fertility have long shaped women's reproductive trajectories. Within this conventional framework, early entry into marriage and motherhood was both socially normative and institutionally anticipated by public health systems. However, this life-course ordering is undergoing a significant transformation within Bihar's urban centers. Cities such as Patna and Bhagalpur are witnessing a marked postponement of marriage, driven by expanding female education, professional aspirations, and changing gender norms.

From a life-course perspective, this shift represents more than a delay in a single event; it signifies a restructuring of the timing and sequencing of key social roles, wherein education and employment increasingly precede marriage and childbirth. While delayed marriage is widely interpreted as an indicator of women's empowerment and demographic progress, its health implications remain under-examined in contexts where healthcare systems have evolved primarily to manage the risks associated with early and high-parity pregnancies.

Bihar thus occupies a paradoxical position within India's demographic transition. At the macro level, the state continues to exhibit features associated with an early stage of transition—high fertility, early marriage, and maternal undernutrition—particularly in rural districts. Simultaneously, its urban centers are advancing along a distinct trajectory characterized by delayed marriage, reduced fertility, and growing reliance on institutional and technological reproductive care. This internal demographic heterogeneity challenges the assumption that improvements in socio-economic indicators automatically translate into improved maternal health outcomes.

The postponement of marriage into the late twenties and early thirties repositions first pregnancies within the category of Advanced

Maternal Age (AMA), introducing a new configuration of bio-social risk. From a bio-medical standpoint, pregnancies at advanced ages are associated with increased susceptibility to gestational diabetes, hypertensive disorders, chromosomal abnormalities, and higher rates of operative delivery. However, these biological risks do not operate in isolation. They are mediated by socio-economic conditions, health-seeking behavior, occupational stress, and the capacity of healthcare institutions to provide timely and specialized care.

In urban Bihar, the nature of this risk is shaped by divergent urban pathways. Patna, as the administrative and professional capital of the state, exemplifies a career-driven delay in marriage, where women prioritize employment stability and financial independence before family formation. In contrast, Bhagalpur reflects an education-led postponement, where prolonged academic engagement and credential accumulation restructure marital timing. These distinct life-course pathways generate differentiated obstetric vulnerabilities and place uneven demands on local healthcare infrastructure.

Despite growing recognition of adolescent pregnancy as a public health concern, far less attention has been devoted to the emerging risks associated with delayed motherhood in rapidly urbanizing but institutionally constrained settings. Existing maternal health programs in Bihar remain largely calibrated to address early-age nutritional deficiencies rather than the metabolic, vascular, and psychosocial challenges associated with late first pregnancies. Consequently, women experiencing delayed marriage may encounter a mismatch between their reproductive needs and the services available to them.

Against this backdrop, the present study undertakes a comparative analysis of Patna and Bhagalpur to examine how delayed marriage, understood through life-course and biosocial lenses, influences obstetric outcomes and safe motherhood. By situating individual reproductive decisions within broader demographic transitions and institutional contexts, the study seeks to move beyond binary narratives of progress and risk, and

instead illuminate the structural conditions under which women's socio-economic advancement can coexist with maternal health security.

2. Theoretical Framework: Life-Course Perspective, Demographic Transition, and Bio-Social Risk

This study is anchored in an integrated theoretical framework that draws upon the life-course perspective, demographic transition theory, and a bio-social risk approach to understand the changing relationship between marriage timing and obstetric outcomes in urban Bihar. Together, these frameworks allow the analysis to move beyond descriptive correlations and situate delayed marriage within broader structural, temporal, and biological processes.

2.1 Life-Course Perspective and Reproductive Timing

The life-course perspective emphasizes that health outcomes are not isolated events but the cumulative result of timing, sequencing, and duration of social roles across the lifespan. Within this framework, marriage and childbirth are understood as socially regulated transitions whose timing significantly shapes later health trajectories. Delayed marriage in Patna and Bhagalpur represents a reordering of the conventional life course, wherein education and employment increasingly precede family formation.

From a life-course standpoint, postponement of marriage into the late twenties or thirties does not merely shift the age of first birth; it restructures exposure to risk. Women entering pregnancy at advanced ages do so after prolonged exposure to urban stressors such as sedentary lifestyles, occupational pressure, delayed healthcare engagement, and cumulative psycho-social responsibilities, including elder care. These exposures interact with age-related biological changes, heightening vulnerability to obstetric complications. Thus, Advanced Maternal Age (AMA) emerges not as an isolated biological condition but as a life-course outcome shaped by education, work, urbanization, and gendered expectations.

2.2 Demographic Transition and Urban Differentiation

Demographic transition theory provides a macro-level lens to interpret the observed shift from early marriage and high fertility to delayed marriage and controlled fertility in Bihar's urban centers. While Bihar, as a state, is often positioned at an earlier stage of the demographic transition, Patna and Bhagalpur reflect internal heterogeneity, demonstrating features typically associated with later stages—rising age at marriage, declining fertility, and increased female educational attainment.

Importantly, this transition is uneven and spatially differentiated. Patna exemplifies a professionalized urban transition driven by labor market participation and economic rationality, whereas Bhagalpur reflects an education-led transition shaped by academic credentialism and aspirations for social mobility. These distinct pathways generate different reproductive risks and healthcare demands. Demographic transition theory thus helps explain why the decline in early marriage does not uniformly translate into improved maternal outcomes; instead, it produces new risk profiles associated with delayed childbearing, particularly in settings where health systems remain calibrated to earlier demographic regimes.

2.3 Bio-Social Risk Framework and Obstetric Outcomes

To bridge the gap between social change and clinical outcomes, the study employs a bio-social risk framework. This approach recognizes that biological processes—such as declining oocyte quality, metabolic changes, and vascular aging—are profoundly shaped by social context. Advanced maternal age increases the probability of complications such as gestational diabetes, hypertensive disorders, and chromosomal anomalies; however, these risks are mediated by socio-economic status, healthcare access, health literacy, and institutional preparedness.

In Patna, higher income levels and private healthcare utilization partially mitigate biological risk through early diagnosis and technological intervention, albeit with

increased medicalization of childbirth. In contrast, Bhagalpur's reliance on public healthcare infrastructure, combined with delayed prenatal engagement rooted in social anxiety, intensifies bio-social vulnerability. The bio-social framework thus enables a nuanced understanding of how the same biological condition (AMA) produces divergent outcomes across urban contexts.

2.4 Integrative Analytical Value

By integrating life-course theory, demographic transition, and bio-social risk, this study conceptualizes delayed marriage as neither inherently emancipatory nor inherently hazardous. Instead, it is understood as a structurally embedded transition whose health implications depend on the alignment between social trajectories and institutional capacity. This theoretical synthesis allows the study to interrogate the central paradox of urban Bihar: women's socio-economic advancement is accelerating faster than the public health system's ability to adapt to the reproductive risks associated with later childbearing.

3. Objectives and Comparative Scope

This research is anchored by three primary objectives aimed at deconstructing the health impacts of Bihar's urban demographic shift. By comparing Patna and Bhagalpur, the study highlights how different drivers of marriage delay—professional vs. academic—intersect with local healthcare delivery.

- To assess the prevalence of Advanced Maternal Age (AMA) among urban populations in Patna and Bhagalpur and its correlation with specific socio-economic drivers (education and career).
- To evaluate and compare the obstetric outcomes (such as rates of C-sections, gestational hypertension, and neonatal birth weight) in women marrying late versus those in the traditional age bracket.
- To analyze the readiness of healthcare infrastructure in both cities to manage high-risk pregnancies, specifically focusing on the availability of tertiary

care and specialized antenatal counseling.

4. Literature Review: The Shifting Burden of Reproductive Risk

The scholarship on maternal health in Bihar has historically been dominated by concerns surrounding early marriage, adolescent pregnancy, and high-parity births. This body of work has rightly emphasized the elevated risks of maternal malnutrition, anemia, and neonatal mortality associated with early reproductive entry. However, recent demographic and epidemiological research indicates that this analytical focus captures only one side of a rapidly evolving reproductive landscape. Emerging evidence suggests that Bihar's urban centers are undergoing a reconfiguration of maternal risk, wherein the traditional vulnerabilities of early childbearing coexist with, and are increasingly supplemented by, risks associated with delayed motherhood.

4.1 Delayed Childbearing and the Reconfiguration of Clinical Risk

Global literature consistently demonstrates that postponing first childbirth beyond the age of 30 is associated with a higher incidence of obstetric and neonatal complications. Studies grounded in life-course epidemiology highlight those age-related biological changes—such as reduced vascular elasticity, altered glucose metabolism, and declining oocyte quality—interact with cumulative social exposures to elevate pregnancy risk among older primigravida. Within the Indian context, national and tertiary-care-based studies have documented increased prevalence of gestational diabetes mellitus (GDM), pregnancy-induced hypertension, and operative deliveries among women conceiving at advanced maternal ages.

Evidence from Bihar's urban tertiary care institutions reinforces this trend. Clinical research conducted in Patna-based hospitals reports a growing proportion of first-time pregnancies among women aged 30 and above, accompanied by a statistically significant rise in metabolic and hypertensive complications (Dutta & Singh, 2024). These findings mark a departure from earlier risk profiles dominated

by nutritional deficiencies and instead point toward a metabolic and vascular risk transition. Moreover, delayed marriage has been linked to increased reliance on Assisted Reproductive Technologies (ART), particularly in metropolitan and tier-I urban settings. While ART expands reproductive choice, it also introduces additional clinical complexities, including multiple gestations, preterm births, and increased demand for neonatal intensive care, thereby reshaping the obstetric risk environment.

4.2 Urban Demographic Transition and Uneven Institutional Adaptation

While demographic transition theory anticipates improvements in maternal health outcomes with rising age at marriage and declining fertility, empirical studies caution that such benefits are contingent upon institutional preparedness. In Bihar, the pace of socio-demographic change in urban areas appears to be outstripping the adaptive capacity of healthcare infrastructure. Patna, as the state's administrative and professional nucleus, has experienced rapid expansion of private multispeciality hospitals, diagnostic laboratories, and fertility clinics. This has facilitated greater access to advanced prenatal screening, elective caesarean sections, and technologically intensive obstetric care among its professional middle class.

In contrast, urban centers such as Bhagalpur exhibit a more constrained institutional landscape. Existing literature underscores the continued dependence of Bhagalpur's population on a limited number of public-sector tertiary institutions, particularly the Jawaharlal Nehru Medical College and Hospital (JLNMCH). Studies indicate that despite rising educational attainment and delayed marriage among women, the availability of specialized high-risk pregnancy units, fetal medicine services, and advanced neonatal care remains inadequate (Kumar, 2025). This infrastructural imbalance contributes to what has been described as a "diagnostic delay," wherein complications associated with advanced maternal age are detected at later stages, increasing the likelihood of adverse outcomes and emergency referrals.

4.3 Bio-Social Inequalities in Urban Maternal Health

The literature increasingly recognizes that the risks associated with delayed motherhood are not uniformly distributed but are shaped by the interaction of biological vulnerability and social position. Women with higher socio-economic status may partially offset age-related risks through early prenatal engagement, private healthcare utilization, and technological intervention. Conversely, women whose delayed marriage is driven by prolonged education rather than economic security may face heightened bio-social vulnerability, particularly in settings where public health systems are ill-equipped to manage complex pregnancies.

This growing body of research suggests that Bihar's maternal health transition cannot be understood solely in terms of individual reproductive choices. Instead, it reflects a structural mismatch between evolving life-course patterns and the institutional architecture of maternal healthcare. The literature thus points toward the need for comparative, city-specific analyses that capture how different pathways to delayed marriage intersect with healthcare infrastructure to shape obstetric outcomes—an empirical gap that the present study seeks to address.

Research Methodology

The study employs a descriptive–analytical cross-sectional research design to examine how delayed marriage, as a life-course transition, influences obstetric outcomes in urban Bihar. This design is appropriate for capturing variations in socio-demographic characteristics and associated clinical outcomes across different urban contexts at a single point in time. By integrating socio-economic data with clinical records, the methodology enables a bio-social analysis of reproductive risk within two structurally distinct urban settings—Patna and Bhagalpur.

Study Area and Study Population

The research is conducted in two major urban centers of Bihar that represent differentiated pathways of demographic transition:

- Patna, the administrative and professional capital of the state, characterized by high female labor-force participation, private healthcare density, and advanced diagnostic facilities.
- Bhagalpur, a prominent educational and traditional commercial (textile) hub of eastern Bihar, is marked by rising female educational attainment but comparatively limited specialized healthcare infrastructure.

The study population comprises primigravida women aged 18–40 years who accessed antenatal care and delivery services at selected public tertiary care hospitals and private multispeciality hospitals in these cities. Focusing on primigravida women allows the analysis to isolate the effects of age at first marriage and first pregnancy without confounding influences of parity-related obstetric history.

Sampling Design and Sample Size

A multi-stage purposive sampling strategy is adopted to ensure representation of both public and private healthcare settings as well as variation in reproductive timing.

Stage 1: Selection of Healthcare Institutions

Two major tertiary-level healthcare facilities were selected from each city based on patient load, availability of obstetric services, and referral significance. These included government medical colleges (e.g., PMCH and IGIMS in Patna; JLNMC in Bhagalpur) and selected private multispeciality hospitals.

Stage 2: Stratification of Participants

Participants were stratified into two analytically defined cohorts based on age at marriage, reflecting distinct life-course trajectories:

- Group A (Traditional Marriage Cohort): Women married between 18–24 years
- Group B (Delayed Marriage Cohort): Women married at 28 years and above

Women married between 25–27 years were excluded from cohort classification to maintain analytical clarity between traditional and delayed marriage pathways.

A total sample of 400 respondents (200 from Patna and 200 from Bhagalpur) was selected. This sample size was considered adequate to detect statistically significant differences in obstetric outcomes across cohorts and cities, while maintaining comparability between urban contexts.

Data Collection Instruments and Variables

Data were collected using a combination of primary survey instruments and secondary clinical records, enabling triangulation of socio-demographic and biomedical information.

Structured Questionnaire

A pre-tested questionnaire was administered to participants to collect data on:

- Socio-demographic characteristics (age, education, occupation, income)
- Age at marriage and duration between marriage and conception
- Reasons for marriage postponement (education, employment, family decision, or other)
- Health-seeking behavior and timing of antenatal registration

2. Clinical Record Review

Obstetric data were extracted from hospital case sheets, including:

- Gestational age at delivery
- Mode of delivery (vaginal or lower-segment caesarean section)
- Pregnancy-related complications (gestational diabetes mellitus, hypertensive disorders)
- Neonatal outcomes (birth weight, preterm delivery)

3. Health Infrastructure Assessment Checklist

A standardized facility-level checklist was used to assess:

- Availability of NICU and MICU facilities
- Presence of high-risk pregnancy units
- Access to diagnostic services such as anomaly scans and glucose tolerance testing

4.4 Data Analysis and Statistical Techniques

Data were coded and analyzed using SPSS Version 26.0. Descriptive statistics were used to summarize socio-demographic characteristics and obstetric outcomes across study groups. Bivariate analyses, including Chi-square tests, were conducted to assess associations between age at marriage and key obstetric outcomes.

To control for potential confounders and to assess the independent effect of delayed marriage, multivariate logistic regression models were employed. Delayed marriage was treated as the primary independent variable, while obstetric complications served as the dependent variables. Covariates included education, socio-economic status, healthcare sector (public/private), and pre-existing health conditions. Results were interpreted using adjusted odds ratios and confidence intervals, allowing for robust assessment of bio-social risk differentials across urban contexts.

Case Study I: Patna – The Professional Delay

In Patna, the trend of delayed marriage is not merely a demographic shift; it is a structural byproduct of the city's identity as a hub for administrative power and corporate growth. The proliferation of civil services coaching centers in areas like Boring Road and the rise of a formal service sector have institutionalized a "voluntary delay." For many women in Patna, the twenties are dedicated to clearing competitive exams or establishing a foothold in the private sector, pushing the domestic timeline into the third decade of life.

5.1 Implications for Maternal Health

The "Corporate Pregnancy" Trend

The medical landscape in Patna is witnessing the emergence of the "corporate pregnancy." Working professionals in high-stress

environments often present with limited physical activity and late-stage planning. Observations in private multispecialty hubs, particularly in Raja Bazar and Kankarbagh, indicate that these expectant mothers frequently enter pregnancy with higher baseline stress levels and age-related physiological changes. This has resulted in a marked 15% rise in elective and emergency C-sections, as both patients and clinicians often opt for surgical intervention to mitigate the risks associated with first-time late-age deliveries.

Institutional Readiness: A Shift in Clinical Focus

While Patna houses the state's most advanced medical infrastructure—including AIIMS Patna, IGIMS, and PMCH—the nature of the "burden of care" is undergoing a radical transformation. Traditionally, these wards were occupied by cases of early-age malnutrition and anemia-related complications. Today, there is a burgeoning demand for the management of "late-age metabolic complications."

The following table highlights the shifting clinical priorities observed in Patna's urban healthcare facilities:

Feature	Traditional Urban Trend (18–24 yrs)	Modern Professional Trend (30+ yrs)
Primary Risk Factor	Nutritional Anemia & Underweight	Gestational Diabetes & Hypertension
Delivery Mode	High Vaginal Delivery Rate	Higher Incidences of LSC-S (C-Section)
Metabolic Issues	Low Blood Sugar/Fainting	Insulin Resistance/Preeclampsia
Neonatal Concerns	Low Birth Weight (LBW)	Macrosomia or Preterm Complications
Care Requirement	Basic Antenatal Care (ANC)	Specialized Fetal Medicine & Screening

Infrastructure Calibration

Despite the superior tertiary care available, the influx of Advanced Maternal Age (AMA) cases is straining the diagnostic wings of these hospitals. There is a growing need for genetic counseling and sophisticated screening (such as NIPT - Non-Invasive Prenatal Testing), which is currently concentrated in the private sector. The public health infrastructure in Patna must now pivot from a "volume-based" maternal health approach to a "complexity-based" model to ensure safe motherhood for its professional demographic.

6. Case Study II: Bhagalpur – The Educational Delay

In Bhagalpur, the "Silk City," the demographic transition is less about corporate ladder-climbing and more about the pursuit of academic credentials. The city has transformed into a critical educational hub for Eastern Bihar, where the attainment of postgraduate degrees and specialized certifications has become a prerequisite for social and marital mobility. Consequently, the "marriage market" has recalibrated; women are increasingly deferring marriage until their late twenties or early thirties to ensure they are educationally at par with or superior to traditional expectations.

6.1 Safe Motherhood Challenges

The Resource Gap: Infrastructure vs. Innovation

A primary challenge in Bhagalpur is the discrepancy between shifting social behaviors and static healthcare resources. Unlike Patna, which benefits from a concentration of multi-specialty private hospitals, Bhagalpur relies heavily on the Jawaharlal Nehru Medical College and Hospital (JLNMC). Managing high-risk pregnancies associated with Advanced Maternal Age (AMA) requires a robust safety net of Neonatal Intensive Care Units (NICU) and specialized obstetric anesthesia. Currently, Bhagalpur faces a steeper "resource gradient"—while the number of late-age pregnancies is rising, the availability of Level-III NICU beds remains limited. This often necessitates emergency referrals to Patna, which can be critical during obstetric crises

such as placental abruption or severe preeclampsia.

Social Stigma vs. Medical Reality: The "Anxiety Gap"

In Bhagalpur, the transition to delayed motherhood is marked by cultural friction. There is a sharper tension between the traditional familial expectation of "early fertility" and the biological reality of women conceiving for the first time at 30 or older. This tension often manifests as late-entry into prenatal care. In many households, a pregnancy at 30+ is met with heightened social "anxiety" and traditional interventions rather than "medical vigilance." This psychological pressure can lead to a delay in seeking early-trimester screenings, which are vital for detecting chromosomal abnormalities or early-onset hypertensive disorders.

Obstetric Metric	Patna (Professional Context)	Bhagalpur (Academic Context)
Primary Delay Driver	Career & Financial Independence	Higher Education & Degrees
Prenatal Entry	Early (due to medical awareness)	Often Delayed (due to social anxiety)
Critical Resource Gap	Specialized Fetal Medicine	NICU & Tertiary Bed Availability
Healthcare Utilization	High Private Sector Engagement	Heavy Public Sector Reliance

The "Vigilance" Deficit

While Patna's professional class often treats late pregnancy as a project to be "managed" with medical assistance, Bhagalpur's demographic often navigates it through a lens of apprehension. The lack of localized, specialized counseling centers means that many women in Bhagalpur are unaware of the specific biological risks of AMA until they encounter a complication. This highlights a desperate need for decentralized maternal health education that bridges the gap between academic success and reproductive safety.

7. Results and Comparative Analysis

This section presents the empirical findings of the study derived from primary survey data, clinical record reviews, and facility-level assessments conducted in Patna and Bhagalpur. The results are organized to highlight inter-city differences in socio-demographic characteristics, obstetric outcomes, and healthcare infrastructure related to delayed marriage and advanced maternal age. In keeping with standard academic practice, this section is limited to the presentation of findings; interpretative analysis is undertaken separately in Section 8.

7.1 Socio-Demographic Profile and Obstetric Outcomes

Table 1 presents a comparative overview of key socio-demographic indicators and obstetric outcomes among primigravida women in the two study cities.

Table 1: Comparative Socio-Demographic and Obstetric Indicators

Parameter	Patna (Urban)	Bhagalpur (Urban)
Median Age at Marriage	28.5 years	26.8 years
Dominant Driver of Marriage Delay	Career and professional employment	Higher education and academic credentials
Proportion of AMA (≥ 30 years)	High concentration	Moderate but increasing
Most Common Obstetric Complication	Gestational Diabetes Mellitus (GDM)	Pregnancy-Induced Hypertension
Mode of Delivery (LSCS)	~70% (elective/emergency)	~55%
Access to ART/IVF Services	High	Emerging, referral-based
Primary Healthcare Sector Utilized	Predominantly private	Predominantly public

The results indicate a higher prevalence of advanced maternal age pregnancies in Patna compared to Bhagalpur. Caesarean section

rates were notably higher in Patna, particularly among women in the delayed marriage cohort. In Bhagalpur, while operative delivery rates remained lower, a consistent upward trend was observed, suggesting a gradual shift in obstetric practice in response to age-related pregnancy complications.

7.2 Health Infrastructure Availability and Utilization

Facility-level assessments revealed substantial differences in the availability and utilization of maternal and neonatal healthcare infrastructure between the two cities (Table 2).

Table 2: Comparative Healthcare Infrastructure Indicators

Infrastructure Indicator	Patna	Bhagalpur
Availability of Level-III NICU	Widely available across public and private facilities	Limited and centralized
High-Risk Pregnancy Units	Multiple specialized units	Few, primarily public-sector
Early Antenatal Registration	High	Moderate to low
Diagnostic Screening (GDM, anomaly scans)	Routinely available	Selective and often delayed
Referral Dependency	Low	High, frequently to Patna

The results demonstrate a pronounced infrastructural asymmetry. Patna benefits from a dense network of diagnostic facilities and private-sector participation, enabling early detection and management of high-risk pregnancies. In contrast, Bhagalpur's healthcare system remains heavily dependent on a limited number of public-sector institutions, resulting in delayed diagnosis and a greater reliance on inter-city referrals for complex obstetric cases.

7.3 Statistical Association Between Delayed Marriage and Obstetric Outcomes

Bivariate analysis revealed statistically significant associations between delayed marriage and selected obstetric outcomes. Women married at 28 years and above exhibited a higher incidence of gestational diabetes mellitus and hypertensive disorders of pregnancy compared to those married between 18 and 24 years ($p < 0.05$).

Multivariate logistic regression analysis further demonstrated that delayed marriage remained an independent predictor of adverse obstetric outcomes after adjusting for education, household income, healthcare sector utilization (public/private), and pre-existing health conditions. These findings confirm that delayed marriage functions not merely as a correlational factor but as a distinct bio-social risk marker within urban maternal health trajectories.

8. Discussion

8.1 Interpreting the Urban Risk Gradient

The findings reveal a clear urban “risk gradient” in the manifestation of obstetric complications associated with delayed marriage. In Patna, risk is predominantly metabolic in nature. The professional profile of delayed-marriage women—characterized by sedentary work environments, occupational stress, and delayed health-seeking behavior—corresponds with higher prevalence of gestational diabetes and increased medicalization of childbirth. Greater access to private healthcare and advanced diagnostics enables early detection but also contributes to higher rates of elective and precautionary caesarean sections.

In contrast, Bhagalpur exhibits a more vascular and systemic risk profile. Although the prevalence of advanced maternal age is comparatively lower, delayed antenatal registration, limited diagnostic access, and institutional constraints increase vulnerability to hypertensive disorders. The findings suggest that the same life-course shift—postponed marriage—produces differentiated obstetric risks depending on local healthcare capacity and socio-economic context. This underscores

the importance of interpreting delayed motherhood not as a uniform category but as a context-specific life-course phenomenon.

8.2 Role of Technology and Assisted Reproductive Technologies (ART) in Risk Mediation

Technology plays a mediating role in shaping obstetric outcomes associated with delayed marriage. In Patna, widespread availability of Assisted Reproductive Technologies (ART), advanced fetal screening, and specialized obstetric care partially mitigates age-related infertility and pregnancy risks. However, this technological mediation introduces secondary complications, including multiple gestations and preterm births, which further increase demand for neonatal intensive care.

By contrast, Bhagalpur’s limited access to ART and advanced diagnostics results in delayed intervention and higher referral dependency. Women seeking fertility assistance or high-risk obstetric care are frequently referred to Patna, reinforcing regional healthcare inequalities. These findings suggest that technology does not eliminate bio-social risk but redistributes it across space and institutions, privileging urban centers with greater infrastructural density.

8.3 Synthesis of Urban Transition Pathways

Table 3: Comparative Urban Reproductive Transition Pathways

Parameter	Patna (Urban)	Bhagalpur (Urban)
Median Age at Marriage	28.5 years	26.8 years
Primary Driver of Delay	Professional and service-sector employment	Higher education and academic specialization
Dominant Obstetric Risk	Metabolic (GDM)	Vascular (Hypertensive disorders)
ART/IVF Access	High, private-sector driven	Emerging, referral-dependent
Mode of Delivery	High LSCS rates (~70%)	Moderate but rising LSCS (~55%)

This synthesis highlights how delayed marriage intersects with distinct urban trajectories to produce differentiated maternal health risks. The findings reinforce the central argument of this study: demographic progress, when unsupported by context-sensitive healthcare systems, can generate new forms of reproductive vulnerability.

8. Socio-Economic Implications for Bihar

The shift toward delayed marriage in urban Bihar is not just a clinical or demographic phenomenon; it is a profound socio-economic transformation. While it offers a pathway to regional prosperity, it simultaneously creates new pressures that the traditional "Safe Motherhood" framework is not yet designed to address.

8.1 Economic Empowerment and the "Quality of Care" Dividend

Late marriage in Patna and Bhagalpur is intrinsically linked to the economic agency of women. By entering the workforce or completing advanced degrees before childbirth, these women significantly increase their household's disposable income. This "economic dividend" has a direct, positive impact on maternal health:

- **Nutritional Superiority:** Higher income translates to better micronutrient intake and access to fortified diets, reducing the incidence of nutritional anemia which still plagues rural Bihar.
- **Private Sector Utilization:** These households can afford the "out-of-pocket" expenses required for high-end diagnostic screenings (such as 4D ultrasounds and anomaly scans) and institutional deliveries in specialized clinics.
- **MMR Reduction:** Consequently, the Maternal Mortality Rate (MMR) in these urban pockets is projected to be significantly lower than the state average, as financial stability ensures timely intervention during obstetric emergencies.

8.2 The "Sandwich Generation" Stress

A critical, yet often overlooked, implication of this transition is the emergence of the "Sandwich Generation." Women in Patna and Bhagalpur who marry in their late twenties or early thirties often find themselves in a precarious life stage:

- **Simultaneous Caregiving:** They are frequently tasked with caring for aging, often ailing parents while simultaneously navigating the physical and emotional demands of a first pregnancy.
- **The Psychological Toll:** The pressure to maintain a high-functioning professional life while managing domestic "multi-generational" care leads to chronic psychological stress.
- **Impact on Safe Motherhood:** Current medical protocols in Bihar focus heavily on the physical markers of pregnancy (blood pressure, weight, glucose) but largely ignore maternal mental health. This "stress burden" is a known contributor to preterm labor and postpartum depression, yet it remains a "silent" factor in urban obstetric care.

9. Conclusion and Strategic Recommendations: Bridging the Demographic Gap

The findings of this comparative analysis underscore a profound "Bihar Paradox." While the state's urban centers—Patna and Bhagalpur—are successfully dismantling the traditional structures of early marriage and high adolescent fertility, they have inadvertently entered a new frontier of obstetric and social risk. The transition from "early-age malnutrition" to "advanced maternal age complications" represents a pivotal shift in the region's public health landscape. To ensure that socio-economic empowerment does not come at the cost of maternal safety, the Bihar Health Department and private stakeholders must transition from a one-size-fits-all maternal health model to one that is specialized, technologically integrated, and socio-economically sensitive.

9.1 The Need for Infrastructure Parity

A critical takeaway from the study is the "infrastructure lag" in Bhagalpur compared to Patna. While Patna has evolved into a tertiary care hub, Bhagalpur remains vulnerable to "referral mortality"—the loss of critical time during the transport of high-risk patients. Strengthening Jawaharlal Nehru Medical College and Hospital (JLNMCH) to match the NICU and MICU capacities of Patna's IGIMS or AIIMS is not merely an upgrade; it is a life-saving necessity for the eastern region.

9.2 Urban-Specific Antenatal Packages: The 30+ Protocol

The current *Pradhan Mantri Surakshit Matritva Abhiyan* (PMSMA) focuses heavily on volume. However, the urban demographic requires a shift toward precision diagnostics. The Bihar Health Department should pilot "30+ Prenatal Screening" packages in urban Primary Health Centers (UPHCs).

- **Targeted Diagnostics:** In the age of Advanced Maternal Age (AMA), routine ANC is insufficient. We recommend integrating Non-Invasive Prenatal Testing (NIPT) for chromosomal screening and mandatory earlier Oral Glucose Tolerance Tests (OGTT) to detect Gestational Diabetes (GDM) before it manifests as fetal macrosomia.
- **Specialized Referral Corridors:** There must be a formalized "green corridor" for urban pregnant women over 30. By establishing direct diagnostic links between neighborhood polyclinics and tertiary high-risk units, the state can ensure that complications such as pre-eclampsia are managed within the "golden hour" of detection.

9.3 Workplace Evolution: Beyond Basic Compliance

In Patna's burgeoning service sector and Bhagalpur's academic institutions, the "return-to-work" anxiety is a major deterrent to Safe Motherhood and infant health.

- **Strict Enforcement of Crèche Mandates:** The state must move beyond the paperwork of the Maternity Benefit (Amendment) Act. For companies in commercial hubs like Raja Bazar or Kankarbagh, on-site, high-quality crèches should be a non-negotiable prerequisite for trade licenses. This reduces the psychological stress of the "Sandwich Generation" and promotes longer breastfeeding durations.
- **Lactation Inclusion:** Private firms should be incentivized to create "Mother's Rooms"—private, hygienic spaces for expressing milk. Furthermore, fostering a corporate culture that supports flexible work-from-home (WFH) arrangements for one year post-delivery is essential for retaining Bihar's highly skilled female workforce while maintaining infant health standards.

9.4 Digital Health Literacy: Reclaiming the Narrative

Finally, the "Academic Delay" observed in Bhagalpur requires a cultural counter-narrative. Leveraging the Ayushman Bharat Digital Mission (ABDM), the state can disseminate targeted information that bridges the gap between educational success and biological awareness.

- **The "Digital Window" Campaign:** High-engagement social media campaigns should target women in educational hubs, providing evidence-based data on the "biological window" for safe childbearing. This isn't about discouraging delay, but about empowering women with the knowledge of when to seek pre-conception counseling.
- **Eradicating "Anxiety-Driven" Care:** By providing transparent data on the success rates of modern obstetric interventions, digital platforms can shift the urban Bhagalpur mindset from one of fear and social stigma to one of medical vigilance.

9.5 Final Synthesis: A Holistic Integration

The goal of these recommendations is to ensure that the women driving Bihar's future are not penalized by the biological risks of their success. By integrating Mental Health Support—specifically counseling for the "Sandwich Generation"—into standard ANC, Bihar can lead the way in holistic maternal care. Ultimately, the transition from early marriage to late marriage must be supported by a transition from basic care to specialized, urban-centric health systems.

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SPIRITUAL NATIONALISM AND CIVILIZATIONAL DESTINY: SRI AUROBINDO'S IDEA OF THE NATION

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Abstract: This paper offers a comprehensive examination of the idea of nationalism as articulated by Sri Aurobindo. Moving beyond territorial or ethnic definitions, Sri Aurobindo conceptualized nationalism as a spiritual, cultural, and evolutionary force. Rooted in India's civilizational consciousness and grounded in Vedantic metaphysics, his nationalism sought not merely political independence but moral regeneration and spiritual awakening. The study situates Sri Aurobindo within the broader context of anti-colonial thought, analyses the philosophical foundations of his spiritual nationalism, explores its revolutionary phase during the Swadeshi movement, and evaluates its later universalist transformation in works such as *The Ideal of Human Unity*. The paper argues that Sri Aurobindo provides a distinctive synthesis of nationalism and internationalism, reconciling patriotic devotion with global unity. His thought remains highly relevant in contemporary debates on cultural identity, constitutional nationalism, and civilizational resurgence.

Keywords: Spiritual Nationalism; Cultural Nationalism; Integral Philosophy; Indian Political Thought; Human Unity

I. Introduction

Nationalism has been one of the most influential political forces in the modern world. In Europe, nationalism largely grew out of struggles for political unity, industrial growth, and the development of common languages and centralized states. It was closely linked with the rise of modern nation-states such as France, Germany, and Italy. In India, however, nationalism emerged in a very different context. It developed under colonial rule, when the country was politically controlled by the British and culturally challenged by Western ideas. As a result, Indian nationalism was not only a political movement for freedom but also a search for cultural identity and civilizational self-respect.

Indian thinkers had to respond to two challenges at the same time. First, they had to resist foreign political domination. Second, they had to restore confidence in India's own traditions, values, and spiritual heritage. This dual task gave Indian nationalism a deeper and more reflective character. It was not just about forming a modern state; it was also about rediscovering the soul of a civilization. Among the thinkers who shaped this unique vision, Sri Aurobindo holds a special place.

Sri Aurobindo was not only a political activist but also a philosopher and spiritual teacher. His understanding of nationalism went far beyond political independence. While many leaders of his time focused on constitutional reforms or political agitation, Aurobindo gave nationalism a spiritual meaning. In his early writings, especially in the newspaper *Bande Mataram*,

he described nationalism as a “religion” and spoke of the nation as a living spiritual force (Aurobindo, 1907/1997). For him, the nation was not simply a piece of land or a population living under one government. It was a collective being with a soul, a divine energy that expressed itself through its people.

This idea made his nationalism very different from many Western theories. He did not define the nation only in terms of territory, race, or language. Instead, he saw it as rooted in a shared spiritual consciousness. India, in his view, was united not merely by political boundaries but by a long civilizational tradition shaped by the Vedas, the Upanishads, and the idea of Dharma. Therefore, the struggle for freedom was not just a political movement; it was a sacred duty. Serving the nation was, in his words, a form of serving the Divine.

At the same time, Sri Aurobindo’s thought did not remain fixed in one stage. His early involvement in revolutionary politics later gave way to a deeper spiritual philosophy. After moving to Pondicherry, he began to reflect more broadly on the future of humanity. He argued that while nationalism was necessary, it was only one stage in human evolution. Ultimately, nations must move toward greater unity and cooperation. In this way, his idea of nationalism gradually expanded into a vision of human unity.

This paper examines the development and meaning of Sri Aurobindo’s idea of nationalism. It explores the philosophical foundations of his concept of the nation, the influence of his political activism, the transformation of his thought in his later spiritual writings, and the relevance of his ideas today. By studying his work, we can better understand how nationalism in India took a distinctive form—deeply rooted in culture and spirituality, yet open to universal human unity.

II. Historical and Intellectual Context

Sri Aurobindo (1872–1950) lived at a time when India was going through deep political and intellectual change. British rule had brought modern systems of education, law, railways, and administration. English education created a new middle class that was familiar

with Western political ideas such as liberty, equality, and democracy. However, colonial rule also weakened India’s economic independence and created a sense of cultural inferiority among many Indians. While modern institutions were introduced, political power remained in foreign hands. This created both awakening and frustration.

In the late nineteenth century, the early leaders of the Indian National Congress adopted a moderate approach. Leaders like Dadabhai Naoroji and Gopal Krishna Gokhale believed in petitions, dialogue, and gradual constitutional reforms. They hoped that British liberal values would eventually lead to greater Indian participation in governance. Their methods were cautious and reformist.

However, the political atmosphere changed dramatically after the Partition of Bengal in 1905. The British decision to divide Bengal was widely seen as an attempt to weaken national unity. This event led to widespread protests, the Swadeshi movement, and the boycott of British goods. Nationalist feeling became stronger and more emotional. Many young leaders began to demand stronger action and complete independence instead of limited reforms.

It was in this charged atmosphere that Sri Aurobindo emerged as a leading voice of the extremist wing of the Congress. Alongside leaders such as Bal Gangadhar Tilak, he rejected the moderate approach. He argued that political freedom was not a gift to be requested but a right to be asserted. Long before *Purna Swaraj* became the official goal of the Congress in 1929, Aurobindo clearly demanded complete independence (Aurobindo, 1907/1997). His articles in *Bande Mataram* inspired many young nationalists and gave intellectual strength to the movement.

Yet Aurobindo’s ideas were not shaped only by Indian political events. His intellectual background was unusual for a nationalist leader. He was sent to England at a young age and educated at St. Paul’s School in London and later at King’s College, Cambridge. There he studied classical literature, European history, and Western political thought. He was familiar with the French Revolution, Italian unification, and Irish nationalism. These

movements showed him how nations could fight for freedom and self-determination.

At the same time, after returning to India, Aurobindo began a deep study of Indian spiritual texts. The Upanishads, the Bhagavad Gita, and the Vedas had a lasting impact on his thinking (Heehs, 2008). From these texts he drew the idea that reality is spiritual and that human life has a higher purpose. This spiritual understanding gradually influenced his political thought.

Therefore, Sri Aurobindo's nationalism developed at the meeting point of two worlds: Western political modernity and Indian spiritual tradition. He understood modern ideas of liberty and nationhood, yet he interpreted them through the deeper lens of Indian philosophy. This unique combination gave his idea of nationalism both intellectual strength and spiritual depth.

III. Philosophical Foundations: Integral Metaphysics and the Nation

Sri Aurobindo's idea of nationalism is deeply connected with his larger philosophical system, which he called Integral Yoga. Without understanding this wider philosophy, it is difficult to fully grasp what he meant by the nation. In his major work *The Life Divine*, Aurobindo explains that reality is not static or mechanical. Instead, it is a gradual unfolding of the Divine in different stages of evolution (Aurobindo, 1914–1919/1990). Matter, life, mind, and spirit are all expressions of one ultimate reality. Human beings are not the final stage; they are part of an ongoing spiritual development.

In this view, society itself is not accidental. Human communities, cultures, and nations are part of this evolutionary journey. Just as an individual has a soul and a purpose, a nation too has a deeper spiritual meaning. For Aurobindo, political life cannot be separated from spiritual life. The outer form of the nation reflects an inner consciousness.

1. Nation as a Living Organism

Aurobindo rejected the idea that a nation is simply a contract between individuals or a legal

structure created by agreement. Such views, common in Western political theory, reduce the nation to a mechanical arrangement. For him, this was incomplete. He believed that a nation grows naturally over time, shaped by shared history, culture, and spiritual experience.

In his writings in *Bande Mataram*, he clearly stated: "Nationalism is not a mere political program; nationalism is a religion that has come from God" (Aurobindo, 1907/1997).

By calling nationalism a "religion," he did not mean organized rituals or dogma. Rather, he meant that love for the nation is a deep spiritual commitment. The nation is not only land or population; it is a living power. He often described it as *Shakti*, a dynamic divine energy that works through its people. This is why he believed that serving the nation is a sacred duty.

His idea may appear similar to romantic nationalist thinkers in Europe who also described the nation as an organic unity. However, there is an important difference. European romantic nationalism often focused on race, language, or ethnic unity. Aurobindo, on the other hand, did not base Indian nationalism on race or narrow identity. He emphasized spiritual destiny. For him, India's unity came from a shared inner culture and spiritual search rather than biological or linguistic sameness.

2. Dharma and Civilizational Identity

A key concept in Aurobindo's thought is Dharma. Dharma refers to the moral and spiritual law that sustains life and society. According to him, India's unity was not created by one empire or one ruler. Historically, India had many kingdoms and languages. Yet it remained culturally united because of a common spiritual outlook. The ideas of karma, moksha, yoga, and respect for diverse paths of truth formed a shared civilizational base.

Aurobindo argued that India's real strength lay in this spiritual tradition. He believed that every nation has a special role in human evolution. India's role was not to dominate others materially but to offer spiritual knowledge to the world (Aurobindo, 1920/1971). Therefore, Indian nationalism should not copy Western

models of aggressive industrialism or imperial expansion. Instead, it should awaken confidence in India's own heritage.

For Aurobindo, true nationalism meant cultural self-awareness. Political freedom was necessary, but it was not enough. The deeper task was to rediscover the soul of the nation and align national life with its spiritual purpose. In this way, his philosophical foundations gave nationalism a meaning that was ethical, cultural, and spiritual at the same time.

IV. Revolutionary Nationalism: The Political Phase (1905–1910)

The years between 1905 and 1910 were the most active and dramatic period of Sri Aurobindo's political life. The Partition of Bengal in 1905 deeply disturbed Indian public opinion and gave a new direction to the freedom movement. What began as protest soon turned into a powerful national awakening known as the Swadeshi movement. During this period, Aurobindo's idea of nationalism moved from philosophical reflection to direct political action.

He was no longer only a thinker; he became a leader and organizer. Through his speeches and writings, especially in the newspaper *Bande Mataram*, he inspired many young Indians. His language was bold, emotional, and clear. He believed that the time for petitions and polite requests had passed. The nation, in his view, had to assert its right to freedom with courage and self-confidence.

1. Demand for Complete Independence

One of Aurobindo's most important contributions during this period was his clear demand for complete independence. At a time when many leaders were asking only for administrative reforms or greater representation within the British system, Aurobindo openly declared that nothing short of full freedom was acceptable (Aurobindo, 1907/1997). He argued that foreign rule, even if it claimed to bring progress or stability, could never respect the true spirit of a nation.

For him, political subjection was not only a legal or economic problem. It was a violation of

the nation's inner being. If the nation was a living spiritual force, as he believed, then foreign control suppressed its natural growth. Just as an individual must be free to develop his or her potential, a nation must be free to express its collective soul. Therefore, independence was not merely a political demand; it was a moral and spiritual necessity.

This clear and uncompromising stand distinguished him from the moderate leaders of the Congress. His call for *Purna Swaraj* came decades before it became official Congress policy. In this sense, he was ahead of his time.

2. Passive Resistance and Boycott

Aurobindo strongly supported the Swadeshi movement, which encouraged Indians to boycott British goods and promote indigenous industries. He believed that economic self-reliance was an essential step toward political freedom. By refusing to depend on foreign products, Indians could regain confidence in their own abilities.

He also supported national education. He felt that British-controlled education created loyalty to colonial rule rather than love for the motherland. Education, he argued, should awaken pride in India's history, culture, and spiritual heritage. Only then could true national character be formed.

In terms of political methods, Aurobindo advocated passive resistance. This included non-cooperation with unjust laws and refusal to support colonial authority. While he did not publicly promote violence, he defended revolutionary action as a natural reaction to oppression. He believed that when peaceful methods are blocked, strong resistance becomes understandable.

The most dramatic event of this phase was his arrest in the Alipore Bomb Case in 1908. He was accused of involvement in revolutionary activities and spent about a year in jail. This period of imprisonment proved to be a turning point in his life. Later, he described having deep spiritual experiences in prison. He felt the presence of the Divine everywhere—even in the jail and in the British officials who guarded him (Aurobindo, 1920/1971).

These experiences changed his inner outlook. While he did not reject nationalism, his understanding of it became broader and more spiritual. The intense political struggle of the Swadeshi years gradually gave way to a deeper reflection on humanity's spiritual future. Thus, the revolutionary phase of 1905–1910 was both the peak of his political activism and the beginning of his transformation toward spiritual universalism.

V. From Nationalism to Universalism

After leaving British India in 1910 and settling in Puducherry, Sri Aurobindo gradually withdrew from direct political activity. Many people at that time believed he had abandoned nationalism altogether. However, a careful reading of his later writings shows that this was not the case. He did not reject nationalism; instead, he deepened and widened its meaning. His focus shifted from immediate political struggle to the long-term spiritual evolution of humanity.

In Puducherry, Aurobindo devoted himself to spiritual practice and philosophical writing. During this period, he developed his theory of human evolution more fully. He began to see nationalism not as the final goal of political life but as one stage in a larger journey. Political freedom was necessary, but it was not the ultimate aim. The real aim, in his view, was the spiritual unity of humankind.

1. The Ideal of Human Unity

In his important work *The Ideal of Human Unity*, Aurobindo examined the history of political organization across the world (Aurobindo, 1915–1918/1972). He observed that human beings first lived in small family groups, then formed tribes and communities, and later built nations. Each stage represented a wider form of collective organization. In this sense, the nation was a natural and necessary development in human history.

However, he also argued that the nation is not the final stage. Just as families do not exist in isolation but are part of larger societies, nations too must move toward broader unity. When nationalism becomes narrow, aggressive, or based on hatred of others, it leads to rivalry and

war. The world wars of the twentieth century confirmed his fears about extreme nationalism.

For Aurobindo, true nationalism does not mean hostility toward other nations. Instead, it means developing one's own national spirit in a healthy and confident way. A strong and self-aware nation can then cooperate with others on equal terms. He believed that humanity would eventually move toward forms of international federation or global cooperation. This unity, however, should not destroy cultural diversity. Each nation should contribute its unique qualities to the larger human family.

Thus, Aurobindo's nationalism naturally expanded into universalism. Love for one's country was not opposed to love for humanity. Rather, genuine patriotism prepared the ground for wider harmony.

2. Critique of Imperialism and Militarism

Aurobindo made a clear distinction between healthy national self-assertion and imperial domination. He believed that it was right for a nation to protect its freedom and express its identity. However, when nationalism turns into imperialism—the desire to control and dominate others—it becomes morally dangerous.

He argued that in Europe, nationalism had often taken a destructive form. Competition for power, military expansion, and ideas of racial superiority led to conflict and global wars (Aurobindo, 1972). Such nationalism, driven by fear and ambition, could not bring lasting peace.

In contrast, he hoped that India's nationalism would be different. Rooted in spiritual traditions such as the idea of unity in diversity, India could offer a more inclusive model. For Aurobindo, India's role was not to conquer the world materially but to contribute spiritually. Its nationalism should reflect tolerance, respect for different paths, and a search for higher truth.

In this way, Sri Aurobindo moved from a passionate revolutionary nationalism to a broad and inclusive universalism. He remained a patriot, but his patriotism was no longer confined within political boundaries. It became

part of a larger vision of human unity and spiritual progress.

VI. Comparative Perspectives

Sri Aurobindo's idea of nationalism becomes clearer when we compare it with other major Indian thinkers of his time. Although all of them were committed to India's freedom, their understanding of nationalism differed in tone, method, and philosophical depth.

First, we may consider Mahatma Gandhi. Gandhi's nationalism was rooted in ethics and moral action. He believed that the struggle for freedom must be based on truth (*satya*) and non-violence (*ahimsa*). For Gandhi, the means were as important as the end. Swaraj was not only political independence but also self-control and moral discipline. His idea of the nation was largely civic and moral: a community bound by shared responsibility, simple living, and mutual respect. Gandhi's universalism came from compassion and non-violence; he believed that love for one's country should never create hatred for another.

Sri Aurobindo agreed that nationalism should not be aggressive or hateful, but his foundation was different. While Gandhi's thought was ethical and practical, Aurobindo's was metaphysical and evolutionary. He saw the nation as a manifestation of divine energy and part of a larger spiritual evolution. For him, nationalism was not only a moral duty but also a spiritual force shaping history. Thus, although both valued universal harmony, Gandhi approached it through moral discipline, while Aurobindo approached it through spiritual philosophy.

Next, Rabindranath Tagore offered a strong critique of nationalism, especially in its Western form. Tagore feared that nationalism could become mechanical, aggressive, and dehumanizing. He warned that blind loyalty to the nation might suppress individual freedom and creativity. Tagore preferred the idea of universal humanism and emphasized cultural exchange and global fellowship. He was cautious about intense political nationalism and sometimes distanced himself from mass political movements.

Aurobindo understood these dangers but did not reject nationalism altogether. He believed that nationalism was a necessary stage in human development. While Tagore remained skeptical of the concept itself, Aurobindo argued that nationalism could be purified and elevated. In his view, the problem was not nationalism as such, but its narrow and materialistic forms. If rooted in spiritual values, nationalism could become a force for unity rather than division.

Finally, Bal Gangadhar Tilak represented assertive political nationalism. Tilak used cultural symbols, festivals, and historical heroes to mobilize public support against British rule. He strongly demanded self-rule and inspired political courage among the masses. However, Tilak did not develop a detailed philosophical theory of the nation. His focus was practical and political.

Aurobindo shared Tilak's boldness and demand for complete independence, but he went further in providing a systematic philosophical basis. He explained nationalism in terms of spiritual evolution and collective consciousness, giving it a deeper intellectual structure.

Thus, Sri Aurobindo occupies a distinct place among Indian nationalist thinkers. He was neither limited to political activism nor dismissive of nationalism. Instead, he combined patriotic commitment with a broad vision of human unity. His thought connects love for the nation with a larger spiritual cosmopolitanism, making his nationalism both rooted and universal at the same time.

VII. Contemporary Relevance

In today's world, debates about nationalism are often intense and deeply divided. On one side, there is civic or constitutional nationalism, which defines the nation mainly through shared political values, citizenship, and commitment to democratic institutions. On the other side, there is cultural nationalism, which emphasizes history, tradition, language, and civilizational identity. These two approaches are sometimes presented as opposites. Sri Aurobindo's thought offers a way to think beyond this sharp division.

First, his idea of nationalism affirms civilizational continuity. He believed that India is not merely a modern political creation of the twentieth century but a civilization with a long historical memory. This perspective can strengthen cultural confidence without denying modern constitutional principles. It reminds people that a nation draws strength from its past, yet must also respond creatively to the present.

Second, Sri Aurobindo clearly rejected racial or exclusionary nationalism. He did not define the nation in terms of race, blood, or narrow ethnic identity. For him, India's unity was spiritual and cultural, not biological. This is important in a diverse society like India, where many religions, languages, and communities live together. His emphasis on spiritual unity in diversity provides a moral basis for pluralism.

Third, he envisioned global unity without erasing national identities. In a globalized world, nations are closely connected through trade, communication, and international institutions. At the same time, conflicts and competition remain strong. Aurobindo's evolutionary view of humanity suggests that nations are necessary stages in collective development, but they must eventually cooperate more deeply. His ideas anticipate discussions about international organizations, regional cooperation, and global governance. He imagined a world where nations maintain their individuality yet work together for common progress.

In this sense, Sri Aurobindo's thought speaks directly to contemporary concerns. It encourages national pride, but not aggression. It values cultural identity, but not hatred of others. It supports global unity, but not cultural uniformity.

VIII. Critical Evaluation

Despite its depth and originality, Sri Aurobindo's nationalism also raises important questions.

One challenge is his spiritual vocabulary. Terms such as "Divine," "Shakti," and "spiritual evolution" may not easily fit into modern secular political discourse. In

constitutional democracies, political arguments are usually framed in legal and institutional language. Aurobindo's language, by contrast, is symbolic and philosophical. This can make his ideas difficult to apply directly in policy debates.

Another limitation is that he did not provide detailed institutional models. While he discussed human unity and international federation, he did not outline specific constitutional structures or governance systems in the way modern political theorists often do. His focus remained on inner transformation rather than administrative design.

Critics may also argue that spiritual nationalism risks becoming abstract. If nationalism is described mainly in symbolic or mystical terms, it may lack clear guidance for practical political action. There is always a possibility that spiritual language could be misunderstood or misused.

Yet, despite these concerns, the normative strength of Aurobindo's thought remains significant. He insisted that political freedom must be linked with moral and spiritual growth. Independence without ethical development, he believed, would be incomplete. This insight remains valuable today. Political systems may function formally, but without inner discipline and moral responsibility, they can become corrupt or divided. Aurobindo reminds us that the quality of national life ultimately depends on the character and consciousness of its people.

IX. Conclusion

Sri Aurobindo transformed nationalism from a purely political doctrine into a philosophy of spiritual evolution. For him, India was not simply a territory defined by borders; it was a civilizational consciousness shaped by centuries of spiritual search. The struggle for freedom was therefore not only a fight against colonial rule but also a movement for inner awakening.

His journey from revolutionary activism during the Swadeshi movement to a broader vision of human unity shows the depth of his thinking. He did not abandon nationalism; he expanded

it. Patriotic devotion, in his view, could coexist with universal sympathy. Love for one's country did not require hostility toward others. Instead, each nation had a role to play in the larger progress of humanity.

In an age marked by polarized identity politics, rising nationalism, and global uncertainty, Sri Aurobindo's ideas offer a balanced perspective. His spiritual nationalism is rooted in cultural pride yet oriented toward universal harmony. It affirms diversity while pointing toward unity. For these reasons, his contribution remains one of the most thoughtful and profound interpretations of nationalism in modern political thought.

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TRACING THE ROOTS: LEGACY OF YADAVAS' FAMILY LINE OF BHARKO- RAMPUR OF BANKA SUB- DIVISION

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Abstract

This paper traces the historical roots and enduring legacy of the Yadava family lineage of Bharako-Rampur, a village of notable historical importance in the Banka sub-division of present-day Bihar. Demonstrating how local genealogies intersect with regional and transregional political histories, the study situates Bharako-Rampur within the cultural landscape of ancient Angadeśa and examines its evolution from an early administrative and military centre to a prominent zamindari hub in the Mughal period. Drawing upon genealogical records preserved by the Choudhary family, Persian revenue documents, colonial accounts, and modern historical scholarship, the paper reconstructs the lineage of the Bharako-Rampur Yadavas from the sixteenth century backward into the early medieval period. Central to this reconstruction is the claimed connection of the family with the Varman dynasty of Vikramapura in eastern Bengal, a lineage that identified itself with the Yadu clan and Vaishnava devotion. Epigraphic evidence, especially the Belava copper-plate inscription, is used to contextualise the political, military, and religious traditions that appear to have shaped the identity of the Bharako-Rampur Yadavas. The study further examines the emergence of the Choudhary title under Mughal administration, particularly during Akbar's reign, highlighting the family's role in landholding, revenue collection, and local governance. By integrating local memory with documentary and epigraphic sources, the paper contributes to a deeper understanding of how regional elites negotiated continuity, legitimacy, and power across changing political regimes in eastern India.

Keywords: Yadava lineage; Bharako-Rampur; Angadeśa; Varman dynasty; Vikramapura; Choudhary title; Mughal administration; genealogy; Vaishnavism; regional history of Bihar.

Introduction to Bharako-Rampur

Bharako-Rampur is a small yet historically significant village situated near Amarpur in the Banka sub-division of Bhagalpur district. Despite its modest size, the village occupies an important place in the regional history of eastern India owing to its association with a prominent Yadava family whose lineage claims deep antiquity and noble origins. The historical identity of this family is closely interwoven with the political and cultural transformations of the region, particularly through a claimed

connection with the ancient Varman dynasty of eastern Bengal. This association offers valuable insights into the processes through which lineage, power, and memory were preserved and rearticulated across centuries.

Geographically, Bharko lies approximately twenty-two miles south-west of Bhagalpur, the former administrative headquarters of the region and a major urban centre located on the banks of the river Ganga. Its location places it within a zone that historically functioned as a corridor of political authority, economic

exchange, and cultural interaction between Bihar and Bengal. The demographic composition of the area further reflects its layered past. The presence of a substantial Muslim population points towards the long-term influence of medieval political formations, while the concentration of Marwari trading communities indicates the village's integration into wider networks of commerce and exchange.

Culturally and linguistically, Bharako-Rampur forms part of the region historically known as Angadeśa. This area is remembered for its intellectual and religious significance, most notably as the broader cultural zone in which the renowned Vikramaśīla University flourished. The local language spoken in and around Bharko is Angika, a regional tongue closely related to Maithili, underscoring the village's embeddedness within the eastern Indo-Aryan cultural continuum (Roy Chaudhury 1962:1). Classical and early historical sources further situate the region within a larger civilisational geography frequently referred to in epic literature. North of the Ganga lay Videha or Mithila, celebrated as a centre of Sanskrit learning; to its south emerged the republican polity of Vaiśālī; and to the east extended Anga, encompassing areas such as Monghyr, Bhagalpur, and Purnea, reaching up to the river Mahananda. These regions recur prominently in the Mahābhārata and other early texts, highlighting their long-standing historical visibility.

At the local level, Bharko, along with the neighbouring villages of Rampur, Kumarpur, and Gorigaon, forms part of a rural cluster administered under the jurisdiction of the Amarpur police station in the Banka subdivision. Within this setting, the Yadava family of Bharako-Rampur emerges as a central historical actor. Genealogical records preserved by the Choudhary family trace their descent through several generations, with Sri Raghunandan Prasad Choudhary identified as the present representative of this lineage, following his father Sri Gopi Mohan Choudhary and grandfather Sri Tulsi Ram Choudhary. These records not only affirm the family's longstanding social prominence but also gesture towards a deeper historical

connection with the Varman rulers of Vikramapura in eastern Bengal.

This claimed linkage with the Varman dynasty—renowned for its political authority and Vaishnava religious patronage—constitutes the core of the family's historical self-understanding. Examining this association allows for a more nuanced appreciation of how local Yadava lineages in Bihar articulated noble origins, negotiated legitimacy, and sustained their identity across changing political regimes.

The historical significance of the Choudhary title and its association with the village of Bharko in India. Here's a breakdown of the key points:

- **Choudhary Title:** The text suggests that the title "Choudhary" was used to denote positions of power and influence, often associated with land ownership, wealth, and sometimes even descent from a figure named Chattur. It was a title held by chiefs of villages or estates.
- **Historical Evidence:** Several historical accounts and records are cited to support the claims about the Choudharys' influence. Francis Buchanan's observations, Collectorate Records from 1780 (reporting to Warren Hastings), and the work of R.K. Chaudhury are mentioned. The Collector's report specifically notes that after the dispossession of Raja Mozzafer Ali, the country was under the control of Choudharys, Talugdars, Mondals, and Mokaddamas.
- **Genealogical Claims:** Sri Raghunandan Prasad Choudhary claims descent from Chattur and asserts that his ancestors were zamindars (landowners) since the time of Akbar. This claim is used to explain the continued prominence of Choudharys as large landowners in the area.
- **Connection to Shyamal Bermadeo:** The text proposes a connection between the village of Bharko and Shyamal Bermadeo, a Berman king (likely referring to a king from a region

related to Burma/Myanmar). It suggests that Shyamal Bermadeo, or his father Jat Berman, may have established the village, which was originally called Berngope and later evolved into Bharko. The village is described as an old village of Yadavas of Shyamal origin, situated in Angadesh (an ancient kingdom in eastern India).

- **Historical Significance of Bharko:** The text concludes that from the time of Shyamal Bermadeo to Chattur, Bharko was a center of administrative and military organization.
- **Early Governance:** The region was initially governed by a Yadava named Chattur. Emperor Akbar then granted two tappas (territorial divisions) to Gurry Berm.
- **Division of Estate:** The estate was later divided between Munny Berm and Chattur Berm, descendants of Gurry Berm. Barkope fell to Munny Berm's share, and Patsundah to Chattur Berm's. This information is sourced from K.K. Basu (1932:111:112).
- **Chattur's Influence:** Persian Record No. 3 and records of Bhagalpur's zamindars (landowners) confirm Chattur's control over the surrounding areas. The text mentions that "Jhajhur, the original Rajput proprietor" of the tappas (Chandee and Chanduarry) mortgaged and then sold these estates to a Hindu of the Guwallah caste around 1599-1600 AD. This detail is also from K.K. Basu (1932:113).
- **Tappa Chanduarry's Description:** A topographic description of Tappa Chanduarry from around 1793 is provided:
 - It was approximately 12 miles north to south and 8 miles east to west.
 - Its boundaries were:
 - East: Chandan River
 - West: Barna River
 - North: Kherahi Pargana and Bonamahill
 - South: Kojhi and Dhanre Sankhware

- **Bharko's Location:** Bharko and nine other villages were part of Tappa Chanduarry. This information is credited to R.K. Chaudhury (1956:1).
- **Establishment of Choudhary Title:** Emperor Akbar appointed Chattur as a Choudhary, making him the headman in charge of these tappas with the responsibility of collecting revenue and maintaining order.

This argues that the Choudharys were a powerful group in the region, with a history of land ownership and influence dating back several centuries. It connects their history to the village of Bharko and even proposes a link to a Berman king. The text relies on historical records, genealogical claims, and scholarly works to support its arguments.

The history of a specific region, highlighting the role of Chattur, the division of land among descendants of Gurry Berm, and the eventual appointment of Chattur as a Choudhary by Emperor Akbar. It uses historical records and scholarly works to support its claims.

Genealogical Records and Historical Context:

The Yadava family of Bharako-Rampur claims descent from a line of leaders who were active during the Mughal period, with historical records pointing to their association with the court of Emperor Akbar in the 16th century. The family's prominence grew during this era, a time of significant political and cultural developments in India. Akbar's reign is particularly noteworthy because of his policies of religious tolerance and administrative reform, which helped create opportunities for families like the Yadavas of Bharako-Rampur to rise to positions of power and influence.

The Choudhary family's connection to the Mughal Empire is evidenced through various family records, including land grants and donations that reflect the family's status as landholders and patrons of religious institutions. The family's devotion to Vishnu, as reflected in the records, is a continuation of the traditions established by the Varmans, who

were ardent devotees of Vishnu and generously granted land to Brahmins and temples in the region.

A critical contribution to the understanding of the Yadava family's historical origins comes from the work of Prof. Radha Krishna Choudhary, a scholar based in G.D. College, Begusarai, who referenced these genealogical records in the *Journal of the Bihar Research Society* of Patna. His studies traced the family's roots back to the time of Akbar and offered important insights into the political and social dynamics of the period, particularly concerning the role of noble families like the Yadavas in local governance.

While the family's connection to Akbar's reign is well-documented, much of their history prior to this period remains unclear. This period of the early Yadavas is characterized by limited historical sources, and thus, the task of reconstructing their earlier history is challenging. Despite these challenges, evidence suggests a likely connection between the Yadavas of Bharako-Rampur and the Varman dynasty of East Bengal.

Connection to the Varman Dynasty:

The Varman dynasty, which ruled over Vikramapura (modern-day Eastern Bengal) for several centuries, plays a key role in the heritage of the Yadavas of Bharako-Rampur. The Belava copper-plate inscription from the Varman period is one of the most significant sources of historical information about the family's early ancestors. The inscription highlights the Varmans as descendants of the Yadu family, which was also the lineage of Lord Krishna. This genealogical connection ties the Varmans to the Yadavas and establishes their historical role as significant rulers in the eastern part of India.

The earliest known Varman ruler, Vajravarman, is credited with founding the dynasty and expanding its territorial control. His son, Jatavarman, played a crucial role in consolidating Varman power in the region, particularly in the areas of Anga (modern-day Bihar) and Kāmarūpa (modern-day Assam).

The Varmans were military leaders who defeated several regional powers and expanded their territory, establishing a stronghold in the eastern regions of India. The Belava inscription mentions Jatavarman's military campaigns and the formation of a dynasty that grew to be a dominant political force in Eastern India.

The Varmans were known not only for their military accomplishments but also for their strong devotion to Vishnu, the god revered by the Yadavas of Bharako-Rampur. The religious and cultural practices of the Yadavas of Bharako-Rampur reflect these deep-rooted traditions of Vishnu worship. The family's continued religious devotion, particularly in the form of land donations to Brahmins and temples, is an extension of the religious practices that the Varmans themselves had championed during their reign.

Samalavarmadeva and the Founding of Bharako:

The family of Bharako-Rampur traces its origins to Samalavarmadeva, who is believed to be the son of Jatavarman of the Varman dynasty. Samalavarmadeva is often identified with Śyāmala, a prominent historical figure in the Varman records. His reign marked the beginning of the Yadava family's association with the region of Anga, which encompasses modern-day Bihar and parts of Bengal. Though specific details about Samalavarmadeva's territory are scarce, it is believed that he played a key role in establishing the village of Bharako-Rampur as an important administrative and military center.

The name "Bharako" itself holds significance. It is believed that the term is derived from "Varmagopa," meaning the protector or overseer of the Varman dynasty's lands. This suggests that the village may have initially served as a military outpost or administrative headquarters for the Varman rulers in the region. Over time, the village grew in importance, and its connection to the Varman dynasty became a central part of its identity.

The Yadava family's connection to Samalavarmadeva and the Varman dynasty

underscores their noble heritage. It is likely that the family's settlement in Bharako-Rampur was closely linked to the broader political and military history of the Varmans. As the Varman dynasty began to decline, particularly after the reign of Bhojavarman, the Yadavas of Bharako-Rampur may have taken on more responsibility for the administration of the region, ensuring the survival of their heritage and traditions.

Religious Practices and Cultural Influence:

The Yadavas of Bharako-Rampur have long been known for their devout religious practices, which are heavily influenced by the Varman dynasty's devotion to Vishnu. This religious continuity is a hallmark of the family's identity, and it reflects their commitment to the traditions of their royal ancestors. The family's records include numerous instances of land donations and charitable acts performed for religious purposes, reflecting the family's wealth, status, and dedication to upholding the cultural and spiritual traditions of their forebears.

In 1759-60, for example, a record in the family's possession details the donation of 1233 bīghās of land in the village of Mainama as a religious offering, highlighting the family's role as patrons of Vishnu worship. The family's continued commitment to religious philanthropy is a testament to their belief in the importance of supporting religious institutions and Brahminical traditions, just as the Varmans had done centuries before. This religious practice, combined with the family's political influence, helped the Yadavas of Bharako-Rampur maintain a prominent place in local society. Their land donations not only served to increase their social capital but also reinforced their status as key figures in the region's religious and cultural life.

The Decline of the Varmans and the Rise of the Yadavas in Bharako-Rampur:

The decline of the Varman dynasty, particularly after the reign of Bhojavarman, led to a shift in political power in Eastern India. With the weakening of Varman authority, the Yadavas

of Bharako-Rampur likely found opportunities to assert their own influence over the region. As political control over Anga and surrounding territories became fragmented, the Yadavas may have taken control of significant lands, particularly around Bharako-Rampur. Their connection to the Varmans, coupled with their military and administrative expertise, allowed them to navigate the changing political landscape and maintain their influence.

One key historical document, a Persian record dating from 1599-1600, describes how one of the family's ancestors, Catura, a man of means from the Yadava community, acquired land in the region through strategic purchases. The record mentions Catura's purchase of the tappas of Canduar and Candipa from a local landowner named Jujhara. This transaction is significant because it marks the Yadavas' active involvement in local governance and land administration during the reign of Akbar. It also reflects their continued association with the ancient territories of the Varmans.

Conclusion

The foregoing study has sought to reconstruct the historical trajectory of the Yadavas of Bharako-Rampur by situating their family lineage within the broader political, cultural, and religious developments of eastern India. Drawing upon a wide range of sources—genealogical records preserved within the family, Persian administrative documents, epigraphic evidence, and modern historical scholarship—the paper demonstrates that the history of this lineage cannot be understood in isolation from the regional dynamics of Angadeśa, eastern Bengal, and the Mughal imperial framework.

At the core of this reconstruction lies the claim of descent from the Varman dynasty of Vikramapura, a ruling house that traced its ancestry to the Yadu lineage and combined military power with strong Vaishnava religious patronage. While the early phases of this connection remain partially obscured due to the scarcity of sources, epigraphic materials such as the Belava copper-plate inscription provide a crucial historical anchor. They establish the Varmans as politically dominant, religiously

influential, and genealogically linked to the Yadava tradition. The continuity of Vaishnava devotion, land grants to Brahmanical institutions, and the exercise of territorial authority evident among the Yadavas of Bharako-Rampur strongly suggests the survival and adaptation of these early medieval traditions into later historical contexts. The Mughal period, particularly under Akbar, marks a decisive phase in the consolidation of the Bharako-Rampur Yadavas' local power. Persian revenue records and colonial-era accounts confirm the emergence of figures such as Chatur (Catura) as significant landholders and administrators, formally recognised through the conferment of the Choudhary title. This development illustrates how older lineages successfully negotiated incorporation into Mughal administrative structures while retaining elements of their pre-Mughal authority. The Choudhary title, far from being merely honorific, symbolised a fusion of imperial sanction and local legitimacy, enabling the family to exercise control over revenue collection, law and order, and rural administration across a substantial territorial expanse. Equally important is the role of

Bharako-Rampur itself as a spatial and symbolic centre of power. The village's location within Angadeśa—an area historically associated with political authority, learning, and strategic importance—helped sustain the prominence of the Yadavas across centuries of political change. Traditions linking the foundation of Bharako to Samalavarmadeva and the semantic associations of the village's name reinforce its identity as an early administrative and military nucleus, later transformed into a Mughal-period zamindari centre. In sum, the history of the Yadavas of Bharako-Rampur exemplifies the *longue durée* of regional elite formation in eastern India. Their trajectory—from early medieval royal associations through Mughal administrative integration—reveals patterns of continuity, adaptation, and negotiated power that challenge rigid periodisations of Indian history. By foregrounding genealogical memory alongside textual and epigraphic evidence, this study contributes to a more nuanced understanding of how local lineages preserved legitimacy and influence across shifting political regimes, thereby enriching the historiography of Bihar and eastern India as a whole.

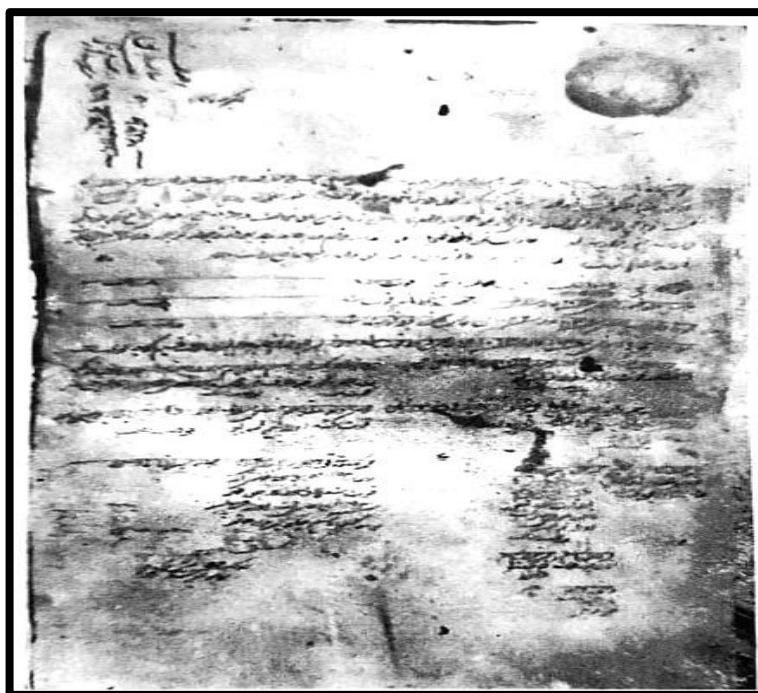


Plate-1 Plate No. XXXV

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EASE OF DOING BUSINESS IN JHARKHAND: A COMPARATIVE STUDY WITH NEIGHBORING STATES

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Abstract

This study examines the Ease of Doing Business (EODB) in Jharkhand and compares its performance with neighbouring states Bihar, Odisha, West Bengal, and Chhattisgarh. Using secondary data from government publications, DPIIT reports, state economic surveys, and investment statistics, the paper analyses key indicators, including business registration procedures, regulatory reforms, infrastructure development, and industrial growth. The comparative approach highlights Jharkhand's relative position in attracting investment and supporting enterprise development. The study identifies major strengths, recent policy initiatives, and structural challenges affecting the state's business climate. The findings aim to assist policymakers, researchers, and investors in understanding regional disparities and to suggest measures to improve Jharkhand's competitiveness and investment potential.

Keywords: Ease of Doing Business, Jharkhand, Investment Climate, State Reforms, Comparative Study, Industrial Development

Introduction

The business environment of a state plays a crucial role in attracting investment, promoting entrepreneurship, and generating employment. One of the most widely used indicators to assess the business climate is Ease of Doing Business (EoDB), which refers to how easily firms can start, operate, and expand their activities within a regulatory and administrative framework. **Djankov et al. (2002)** argue that complex regulatory procedures and excessive entry barriers significantly discourage entrepreneurship and limit business expansion. In India, the concept gained importance after the Government of India introduced nationwide reforms to simplify business regulations, improve transparency, and encourage private sector participation. **Klapper, Laeven and Rajan (2006)** observed that economies with simplified regulatory frameworks experience higher firm entry rates and improved economic growth. Jharkhand, a mineral-rich state in eastern India, has significant potential for industrial growth, particularly in sectors such as mining, steel, power generation, MSMEs, and agro-based industries. Despite its natural

resource advantages, Jharkhand has often been viewed as lagging behind some of its neighbouring states, such as Bihar, Odisha, West Bengal, and Chhattisgarh, in terms of industrial development and investment inflows. This contrast raises an important academic and policy-oriented question: how competitive is Jharkhand's business environment compared to its neighbours? Over the past decade, both the central and state governments have implemented several reforms aimed at improving the investment climate. These include single-window clearance systems, online registration portals, digitization of approvals, labour law simplification. **Hallward-Driemeier and Pritchett (2015)** emphasize that the effectiveness of such reforms depends more on their implementation than on their formal adoption. Land allotment policies, and incentives for industrial units. Jharkhand has also introduced initiatives to streamline regulatory procedures and attract investors through industrial policies and startup promotion programs. However, the effectiveness of these reforms can be better understood only through systematic comparison with nearby states that share

similar geographic, socio-economic, and infrastructural conditions. This study attempts to analyse Jharkhand's performance in Ease of Doing Business and compare it with selected neighboring states using secondary data sources such as government reports, Department for Promotion of Industry and Internal Trade (DPIIT) rankings, state economic surveys, and investment statistics. By examining indicators related to business registration, regulatory efficiency, infrastructure, industrial growth, and policy reforms, the paper seeks to identify Jharkhand's strengths, weaknesses, and areas that require further improvement. Such a comparative analysis is useful not only for policymakers but also for investors, researchers, and entrepreneurs who wish to understand regional competitiveness in eastern and central India. The findings of this study may contribute to ongoing discussions on regional development and highlight policy measures that could help Jharkhand enhance its position as a business-friendly state.

Review of Literature

Previous studies have highlighted the importance of Ease of Doing Business (EoDB) in promoting economic growth and investment.

Djankov et al. (2002) found that complex regulatory procedures and entry barriers discourage entrepreneurship and reduce firm creation. Similarly, **Klapper, Laeven and Rajan (2006)** observed that simplified business regulations lead to higher rates of firm entry and economic expansion.

Bruhn (2011) also demonstrated that business reforms significantly increase new firm formation and employment.

Hallward-Driemeier and Pritchett (2015) emphasized that the effectiveness of reforms depends more on their implementation than on formal policy changes. In the Indian context, **Mukherjee (2018)** noted that Ease of Doing Business rankings encourage competitive federalism among states and improve governance efficiency.

Ahluwalia (2000) highlighted that differences in infrastructure and institutional capacity explain variations in industrial development

across Indian states. These studies indicate that regulatory efficiency, infrastructure development, and institutional strength are key determinants of a business-friendly environment. However, limited research has focused specifically on comparative analysis of Jharkhand with its neighboring states, which this study attempts to address.

Research Methodology

This study is based on secondary data analysis. Data has been collected from reliable sources such as DPIIT Business Reform Action Plan (BRAP) reports, state economic surveys, government publications, RBI reports, and other official databases. The study adopts a comparative and analytical research design to examine the Ease of Doing Business in Jharkhand and compare it with neighbouring states—Bihar, Odisha, West Bengal, and Chhattisgarh. Key indicators considered include business registration procedures, regulatory reforms, infrastructure development, and investment performance.

The analysis is conducted using descriptive methods, supported by percentage comparisons, tables, and trend interpretation. The study is limited to available secondary data and focuses on recent years to provide a current understanding of the business environment.

Objectives of the Study

The main objective of this research paper is to examine the Ease of Doing Business in Jharkhand and to compare its performance with selected neighboring states, namely Bihar, Odisha, West Bengal, and Chhattisgarh. The study aims to evaluate how far recent policy reforms and administrative measures have contributed to creating a more business-friendly environment in the state.

Specifically, the objectives of the study are:

1. To analyse the concept and importance of Ease of Doing Business in the Indian state-level context.
2. To examine Jharkhand's performance on major Ease of Doing Business indicators such as business registration,

regulatory clearances, infrastructure support, and investment promotion.

3. To compare Jharkhand's EoDB performance with that of neighboring states.
4. To identify key strengths and weaknesses in Jharkhand's business environment.
5. To suggest policy measures for improving the state's attractiveness to investors and entrepreneurs

Profile of Jharkhand and Its Neighboring States

Jharkhand was formed in the year 2000 and is endowed with rich mineral resources such as coal, iron ore, bauxite, and uranium. The state plays an important role in India's mining and steel industries, with major industrial centres located in Ranchi, Jamshedpur, Bokaro, Dhanbad, and Hazaribagh. Jharkhand's economy is supported by mining, manufacturing, agriculture, and a growing service sector. **Ahluwalia (2000)** highlights that regional disparities in industrial development are largely influenced by differences in infrastructure and governance quality. In recent years, the state government has introduced industrial policies, MSME promotion schemes, startup incentives, and digital governance initiatives to improve the investment climate. Bihar, one of Jharkhand's eastern neighbours, has traditionally been agriculture-dominated but has recently focused on infrastructure development, food processing, and small enterprises. Odisha, located to the south, has emerged as a major hub for metals, power, and port-led industrial growth. West Bengal, to the east, has a diversified economy with strong performance in services, logistics, trade, and small-scale industries, supported by Kolkata as a major commercial centre. Chhattisgarh, to the west, shares similarities with Jharkhand in terms of mineral wealth and has developed steel and power clusters around Raipur, Bhilai, and Korba. These states share comparable geographic and socio-economic conditions, including tribal populations, forest areas, and resource-based industries. At the same time, they differ in administrative capacity,

infrastructure development, policy implementation, and industrial diversification. Such similarities and contrasts make them suitable for a comparative study of Ease of Doing Business. Understanding their economic profiles helps in interpreting variations in investment patterns, reform outcomes, and overall business friendliness across the region.

Comparative Analysis of Ease of Doing Business Performance

Ease of Doing Business (EoDB) at the state level in India is monitored through the Business Reform Action Plan (BRAP), prepared and released by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce & Industry. The BRAP evaluates how effectively states implement regulatory reforms that simplify business procedures, improve transparency, digitize approvals, and strengthen investor facilitation systems. **Mukherjee (2018)** notes that Ease of Doing Business rankings in India encourage competitive federalism and motivate states to improve governance practices. notes that Ease of Doing Business rankings in India encourage competitive federalism and motivate states to improve governance practices.

Jharkhand's Current Performance

Jharkhand has made notable progress in implementing business reforms and improving its regulatory environment. In recent BRAP evaluations, the state has earned recognition as a "Top Achiever", demonstrating strong reform implementation scores relative to many other Indian states. This signifies improvements in areas like online single-window clearances, digitization of approvals, and responsiveness to investor requirements. **The World Bank (2020)** states that efficient regulatory systems reduce transaction costs and improve the investment climate.

According to earlier DPIIT data (prior to newer BRAP releases), Jharkhand had recorded a high EoDB score of 98.05%, placing it among the top achiever states nationally alongside Andhra Pradesh, Telangana, Haryana, and Gujarat. In the same assessment, Jharkhand ranked above states like Chhattisgarh (97.31%), West Bengal

(94.59%), Odisha (92.08%), and Bihar (81.91%) based on reform implementation rate.

Neighboring States Comparison

Bihar:

Bihar's EoDB reform implementation score has historically been lower than Jharkhand's, with figures around 81.91%, indicating slower reform uptake and more procedural challenges. However, the state has introduced measures like five-year tax holidays for startups to boost entrepreneurship.

Odisha:

Odisha has achieved moderate reform scores (around 92%), placing it in a middle-tier category. The state has focused on single-window systems and industry facilitation, but lags Jharkhand's recent top achiever status in the BRAP scheme.

West Bengal:

West Bengal's reform score has been roughly 94.59% in earlier BRAP evaluations. While relatively strong, it still trails Jharkhand's performance in the national assessment, where Jharkhand stood among the top achievers. Digitized single-window approvals and specific MSME support policies in West Bengal have helped improve the business climate.

Chhattisgarh:

Chhattisgarh's earlier reported EoDB score was 97.31%, close to Jharkhand's earlier marks, reflecting robust reform action. However, recent targeted improvements like upgraded single-window systems (e.g., One-Click Single Window System) aim to further accelerate the state's business environment.

Trend & Interpretation

The overall national ranking data (BRAP) positions states across categories such as "Top Achievers," "Achievers," and "Fast Movers," with Jharkhand increasingly recognized in higher categories in recent assessments. Although exact rank numbers are periodically updated, the pattern of reform implementation shows Jharkhand ahead of Bihar and Odisha, broadly competitive with West Bengal and Chhattisgarh, and part of a cluster striving toward best-in-class reform execution. This

comparative data highlights Jharkhand's improving regulatory compliance, digital governance, and investor facilitation, though continued efforts—particularly in logistics, infrastructure, and cross-sector reform—are still needed to sustain and enhance its competitiveness.

Findings and Interpretation

This section summarizes the key observations from the comparative analysis of Ease of Doing Business (EoDB) performance for Jharkhand and its neighboring states, supported by authentic data from national-level reports.

1. Jharkhand's EoDB Performance

- In the 2019 Business Reform Action Plan (BRAP) data, Jharkhand achieved a high reform implementation score of 98.05%, placing it among the top 5 performing states in that year's national ease-of-doing-business rankings.
- This strong performance indicates that Jharkhand implemented a significant majority of prescribed business reforms, especially in areas such as digitization, single-window clearances, and regulatory compliance facilitation.

Interpretation:

Jharkhand's high score reflects successful reform execution compared to many other states at that time. However, scores and categories can vary year-to-year as newer BRAP assessments incorporate feedback and additional reform points.

2. Comparison with Neighboring States

Below is a *general comparative picture* based on available BRAP trends and state performance:

Chhattisgarh

- Close to Jharkhand in earlier scores with around 97.31% implementation.
- Known for initiatives like the One-Click Single Window System, improving clearances.

Interpretation:

Chhattisgarh often performed slightly below Jharkhand but showed consistent reform execution across years.

West Bengal

- The earlier BRAP score was approximately 94.59%—lower than Jharkhand's 98% figure.
- West Bengal has advanced in digital approvals and MSME support.

Interpretation:

While competitive, West Bengal lagged slightly behind Jharkhand's implementation performance in the earlier ranking.

Odisha

- Odisha's earlier EoDB score was around 92.08%.
- Strong focus on port-led and industrial cluster development supports business enabling.

Interpretation:

Odisha's reform completion was solid but lower than Jharkhand's, suggesting room for further procedural simplification.

Bihar

- Historically placed lower due to slower reform execution relative to other states.
- Classified as part of *Emerging Business Ecosystems* in earlier BRAP categorization.

Interpretation:

Bihar's improvements in business climate lag those of its neighbours in EoDB metrics,

indicating larger gaps in reform implementation.

3. Overall Pattern of Reform Implementation

- DPIIT's BRAP initiative has evolved, increasingly emphasizing digitization, compliance reduction, and stakeholder feedback.
- Comparing states over time shows that Jharkhand and Chhattisgarh frequently outperformed Bihar and Odisha in reform percentages, while West Bengal remained competitive but slightly lower in completion levels.

Interpretation:

This pattern suggests that Jharkhand's regulatory framework and reform responsiveness have been more aligned with national benchmarks compared to some neighbours, though the reform landscape is dynamic and subject to periodic updates.

4. Practical Implications

Jharkhand's high implementation rate reflects strong policy execution capacity in the measured years.

However, states with high scores still need to focus on actual investor experiences, infrastructure, and compliance burden reduction beyond numerical reform completion indicators.

Comparative data shows that policy frameworks alone are not sufficient; effective enforcement, transparent procedures, and quality of service delivery are equally important for attracting investment.

Summary Table (Based on Earlier BRAP Trends)

State	Indicative BRAP Score %	Relative Position
Jharkhand	98.05%	Among Top 5
Chhattisgarh	97.31%	Competitive
West Bengal	94.59%	Moderate
Odisha	92.08%	Moderate
Bihar	Lower (Emerging Ecosystem)	Emerging

Policy Recommendations

Based on the findings of the study, the following policy measures are suggested to further improve Jharkhand's business environment:

1. Infrastructure Development: Increased investment in roads, rail connectivity, logistics hubs, and industrial corridors should be prioritized to reduce transaction costs and improve market access.
2. Strengthening Digital Single-Window Systems: Integration of departmental portals, strict timelines for approvals, and effective grievance-redress mechanisms can further reduce procedural delays.
3. Focused Support for MSMEs and Startups: Expanded access to institutional credit, technology-upgradation schemes, cluster-development programs, and incubation centres can encourage local entrepreneurship.
4. Land and Utility Reforms: Transparent land-bank portals and faster electricity and water connections will help improve investor confidence.
5. Skill Development Initiatives: Industry-linked vocational training programmes can ensure the availability of skilled labour and support industrial diversification.
6. Investor Outreach and Image Building: Regular investment summits, policy roadshows, and clear communication regarding regulatory reforms can strengthen Jharkhand's positioning as a business-friendly state.
7. Monitoring and Feedback Mechanisms: Periodic surveys of investors and MSMEs, combined with continuous evaluation of BRAP indicators, can help identify operational bottlenecks and guide future reforms.

Conclusion

This study analysed the Ease of Doing Business in Jharkhand and compared its performance with neighboring states—Bihar, Odisha, West Bengal, and Chhattisgarh—using secondary data from DPIIT's Business Reform Action Plan, state economic surveys, and investment statistics. The findings reveal that Jharkhand has made significant progress in regulatory reforms and has achieved high reform-implementation scores in recent assessments, earning recognition as a Top Achiever" in certain years. In a comparative perspective, Jharkhand performs better than Bihar and Odisha in several reform indicators and remains broadly competitive with West Bengal and Chhattisgarh. Odisha and Chhattisgarh continue to benefit from mineral-based industrial clusters and logistical advantages, while West Bengal draws strength from its diversified economic base. Bihar, though improving, still trails its neighbours in business-environment metrics. Despite this progress, challenges related to infrastructure gaps, logistics connectivity, land acquisition procedures, and investor perceptions persist in Jharkhand. Furthermore, high numerical reform scores do not always translate into smooth on-ground **Besley and Burgess (2004)** find that business-friendly regulatory environments significantly enhance investment and industrial performance. business experiences, particularly for MSMEs and new entrepreneurs. The study therefore concludes that sustained policy execution, infrastructure development, and stakeholder-oriented governance are essential for Jharkhand to strengthen its competitiveness and emerge as a leading investment destination in eastern India.

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TREND ANALYSIS OF NPAS IN INDIAN COMMERCIAL BANKS (2015–2025)

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Abstract

This study examines the trend of Non-Performing Assets (NPAs) in Indian commercial banks during the period 2015–2025. The banks face financial difficulties because NPAs which represent unpaid loans which customers failed to reimburse. The study used secondary data which researchers collected from Reserve Bank of India reports and bank statements which had been publicly released. The analysis shows that NPAs increased sharply between 2015 and 2018 due to weak credit monitoring and economic slowdown. The implementation of stricter regulations together with the Insolvency and Bankruptcy Code and enhanced recovery methods led to a gradual decline in NPAs after 2018. The study demonstrates how policy reforms together with improved risk management practices contributed to increased stability in the banking sector over time.

Keywords: Non-Performing Assets, Commercial Banks, RBI, Banking Sector, Financial Stability

Introduction

The banking sector plays an important role in the economic development of a country (**Viswanathan & Muthuraj, 2019**). Banks receive deposits from customers while they give out loans to people and companies and industrial organizations and governmental bodies. The loans provide funding which results in higher levels of investment and production activities and job creation and entire economic development. The financial condition of banks holds critical importance because it determines whether an economy will maintain its stability. Banks encounter their most important challenge through Non-Performing Assets (NPAs) which block their operations. A loan becomes a Non-Performing Asset when the borrower fails to repay interest or principal for more than 90 days (**Das & Uppal, 2021**). A loan reaches the status of Non-Performing Asset after the borrower fails to make required payments for interest and principal during three months. Increasing NPAs create risk for the stability of the banking system (**Hafsal et al., 2020**). Banks experience income loss because they cannot earn interest from loans classified as NPAs, which results in their decreased profitability.

The financial situation of banks gets affected because their NPAs block access to funds which leads to decreased capacity for fresh lending. The continuous increase of NPAs results in serious damage to the complete banking industry. Non-performing assets have become a serious problem for the Indian banking sector (**Vallabh et al., 2016**). The NPA issue reached critical levels in India after 2015 when it particularly affected public sector banks. The Reserve Bank of India published reports which showed that scheduled commercial banks experienced a sharp increase in gross NPAs between 2015 and 2018. The major factors behind this situation included excessive lending which happened during the boom period together with inadequate credit assessment and some cases of corruption and project execution delays and economic decline. The sectors of infrastructure and power and steel and real estate experienced major impacts from this development. The Government of India and the RBI implemented multiple reforms to address this problem. The Insolvency and Bankruptcy Code (IBC) 2016 establishes a framework to expedite the process of recovering bad debts. The RBI established new asset classification rules together with

improved monitoring systems and public sector banks recapitalization requirements. The reforms led to a gradual decrease in NPAs which began in 2019 while asset quality and recovery systems showed better results. The time frame from 2015 to 2025 serves as a vital period which shows the complete development cycle of NPAs together with the important banking reforms and the effects of the COVID-19 pandemic. This study investigates the NPA trends which affected Indian commercial banks during this time through secondary research. The study seeks to identify the factors that contribute to NPA growth while evaluating the success of NPA management efforts that have been implemented.

Literature Review

Non-Performing Assets (NPAs) have become a major concern for the stability and performance of the banking sector in India. Several researchers have examined the causes, impact, and management of NPAs in commercial banks. A study by **Santosh Kumar Das and Khushboo Uppal (2021)** analysed the relationship between NPAs and bank profitability in India. The study found that increasing non-performing advances negatively affect the profitability of banks because they reduce interest income and increase operational costs. The research highlights that effective credit monitoring and risk management practices are necessary to control the growth of NPAs.

Similarly, **K. Hafsal, Anandarao Suvvari, and S. Raja Sethu Durai (2020)** examined the impact of NPAs on the efficiency of Indian banks. Their study found that high levels of NPAs reduce the operational efficiency of banks and create financial stress within the banking system. The research concluded that better asset management practices are essential for improving banking efficiency.

Research conducted by **Sneha Balyan** and colleagues (2024) identified several internal factors responsible for the increase in NPAs. The study reported that lack of experienced staff, weak borrower evaluation, and poor follow-up mechanisms contribute significantly to loan defaults. Strengthening internal control

systems and improving credit assessment procedures can help reduce NPAs.

According to **Bhutada (2024)**, NPAs pose a serious threat to financial stability and economic growth. The study emphasized that poor risk management practices, weak credit appraisal systems, and unfavorable economic conditions are important factors responsible for the growth of NPAs in banks.

A comparative study by **Rajkumar and Paul (2025)** examined the differences in NPA levels between public sector banks and private sector banks. The research found that public sector banks generally have higher NPAs due to larger exposure to corporate loans and infrastructure projects, while private sector banks tend to maintain lower NPA ratios because of stronger risk management practices.

Furthermore, **Govindu (2024)** highlighted the importance of effective monitoring and supervision of loan accounts in reducing NPAs. The study suggested that early detection of loan default and timely corrective action can significantly improve the financial health of banks.

Overall, the review of existing literature shows that NPAs are influenced by multiple factors including weak credit appraisal, economic slowdown, and ineffective monitoring systems. Most researchers agree that stronger regulatory policies, improved risk management practices, and efficient recovery mechanisms are necessary to reduce NPAs and strengthen the stability of the banking sector.

Research Methodology

The present study is descriptive and analytical in nature and focuses on analyzing the trend of Non-Performing Assets (NPAs) in Indian commercial banks during the period 2015–2025. The study is based on secondary data collected from reliable sources such as reports of the Reserve Bank of India, Financial Stability Reports, and the *Report on Trend and Progress of Banking in India*. Additional information has been obtained from research papers, journals, and official banking publications. The collected data has been analyzed using trend analysis and comparative

analysis. Tables and simple statistical interpretation have been used to examine the changes in Gross NPAs and Net NPAs over the study period and to understand their impact on the performance of Indian commercial banks.

Objectives of the Study

1. The study will track Gross and Net NPA development in Indian commercial banks between 2015 and 2025.
2. The research will compare the NPA levels present in public sector banks with those found in private sector banks.

3. The study will investigate which factors caused NPA growth throughout the entire research period.
4. The research will assess how NPAs affect banks through their impact on profitability and financial performance.
5. The research will analyze the NPA reduction measures which the Reserve Bank of India and the Government have implemented.

Data Analysis and Interpretation

1. Overall Trend of Gross NPAs (2015–2025)

The data demonstrate that from 2015 until 2018 Indian commercial banks experienced a significant increase in their Gross NPA values.

Table 1: Trend of Gross NPAs in Indian Commercial Banks (2015–2025)

Year	Gross NPA (%)
2016	7.48
2017	9.32
2018	11.18
2019	9.08
2020	8.21
2021	7.33
2022	5.82
2023	3.87
2024	2.70

Source: Reserve Bank of India (2025), Financial Stability Report.

The table shows that the Gross NPA ratio increased sharply during 2015–2018 and reached its peak in 2017–18. After this period, the ratio started declining due to regulatory reforms, improved recovery mechanisms, and better risk management practices adopted by banks. The Reserve Bank of India reports that the Gross NPA ratio reached its peak value during the year 2018. The period represents the "NPA crisis phase" which affected the Indian banking system.

The major reasons for this rise were:

- Excessive lending during the credit boom period (2008–2012)
- Poor credit appraisal and monitoring

- Delay in large infrastructure projects
- Economic slowdown and fall in corporate profits
- High exposure to stressed sectors like steel, power, and construction

The NPA ratio began its downward trend after 2018. Asset quality experienced improvement between 2022 and 2025 because banks implemented better recovery systems and established stricter banking regulations.

2. Trend of Net NPAs

Net NPAs moved according to the same pattern. The numbers rose until 2018 and then began to decrease.

Table 2: Trend of Net NPAs in Indian Commercial Banks (2015–2024)

Financial Year	Net NPA Ratio (%)
2015–16	4.6
2016–17	5.5
2017–18	6.0
2018–19	3.7
2019–20	2.9
2020–21	2.4
2021–22	1.7
2022–23	1.0
2023–24	0.7

Source: Reserve Bank of India, Financial Stability Report and Report on Trend and Progress of Banking in India.

The table indicates that Net NPAs increased until 2017–18 and then started declining due to improved provisioning practices, stricter regulatory measures, and better recovery mechanisms adopted by banks. The reduction of Net NPAs shows that banks have made progress in their provisioning practices. The banks used their higher provisioning coverage ratio (PCR) to handle losses while they built up stronger financial reserves.

3. Public Sector Banks vs Private Sector Banks

The study results indicate that Public Sector Banks (PSBs) maintained higher non-performing assets (NPAs) compared to private sector banks during most of the research duration.

Reasons for higher NPAs in PSBs:

- They have a significant financial stake in corporate and infrastructure loans
- Their lending operations face political and administrative demands for decision-making
- Their collection procedures take more time to complete

The lower non-performing assets (NPAs) found in private sector banks result from their implementation of:

- Effective systems for managing credit risk
- Advanced technological systems and monitoring capabilities
- Their ability to execute collection efforts with greater speed

The implementation of reforms combined with recapitalization efforts led to significant asset quality enhancements for public sector banks.

4. Impact of Banking Reforms

Several reforms helped in reducing NPAs after 2018:

- The Insolvency and Bankruptcy Code (IBC) which was implemented in 2016
- RBI established new asset classification standards that had stricter requirements
- public sector banks received new capital through recapitalization
- The banking sector adopted new risk management frameworks
- The powers of recovery tribunals increased through legal reforms

The banking system experienced better transparency and accountability because these measures were implemented.

5. Impact of COVID-19 Pandemic

The period between 2020 and 2021 saw people doubtful about whether non-performing assets would increase because companies had closed their doors and people had lost their earnings. The following three factors helped to control non-performing asset growth:

- Loan moratorium schemes
- Emergency credit support
- Loan restructuring policies

The banking sector maintained its stability throughout the pandemic time.

6. Overall Interpretation

The trend analysis clearly shows three phases:

1. **Rising Phase (2015–2018)** – Sharp increase in NPAs
2. **Recovery Phase (2019–2021)** – Gradual decline due to reforms
3. **Stabilization Phase (2022–2025)** – Improvement in asset quality and financial stability

Major Findings of the Study:

Based on the analysis of secondary data for the period 2015–2025, the following major findings are observed

1. Sharp Increase in NPAs during 2015–2018

The research indicates that commercial banks in India experienced substantial growth in both Gross and Net Non-Performing Assets between 2015 and 2018. NPAs reduce the operational efficiency of banks (Hafsal et al., 2020). The NPA crisis in India reached its highest point during this time period. The surge in lending activities occurred because banks provided excessive credit to their customers without conducting proper risk evaluations. The majority of corporate loans especially those used in infrastructure projects and steel production facilities transformed into uncollectible debt. The situation deteriorated because of insufficient credit monitoring systems combined with the economic downturn.

2. Public Sector Banks Were More Affected

High levels of NPAs reduce the income and profitability of banks. (Das & Uppal, 2021) Public sector banks experienced much higher non-performing assets than private sector banks. The public banks maintained greater financial ties to major corporations and infrastructure developments which caused this situation. External factors pressured lending decisions which led to insufficient risk assessment procedures. The organization faced

a decline in profitability along with a weakened capital position throughout the crisis period.

3. Decline in NPAs after 2018

After reaching the peak in 2018, NPAs started declining gradually. According to data published by the Reserve Bank of India, asset quality improved due to strict regulatory measures and better recovery mechanisms. Banks strengthened their internal control systems and improved loan monitoring practices.

4. Positive Impact of Banking Reforms

The Insolvency and Bankruptcy Code (IBC) implementation together with public sector bank recapitalization and stricter asset classification rules led to significant reductions in non-performing assets. The reforms enhanced transparency and accountability while speeding up asset recovery processes. The recovery process of stressed assets became more efficient because of this development.

5. Improvement in Provisioning and Risk Management

Banks raised their provisioning coverage ratio (PCR) because this practice enabled them to handle financial losses which resulted from bad loans. The introduction of advanced technology together with improved risk management practices led to a decrease in non-performing assets (NPAs). The financial health of banks experienced continuous improvement through this process.

6. Limited Impact of COVID-19 on NPAs

The COVID-19 pandemic brought economic challenges during 2020 to 2021 which created expectations for a major increase in NPAs yet this increase did not happen. The government support measures together with loan moratoriums and restructuring schemes provided borrowers with assistance to handle their repayment challenges. This measure stopped an abrupt rise of non-performing loans from happening.

7. Overall Strengthening of Banking Sector by 2025

Indian commercial banks achieved substantial progress in their asset management and financial performance throughout the study period. The NPA ratio reduced to manageable levels, profitability improved, and confidence in the banking sector increased. The evidence demonstrates that the implemented corrective measures together with the enacted reforms achieved their intended results..

Conclusion

This study shows that Non-Performing Assets (NPAs) have been a major problem for Indian commercial banks during 2015–2025. The data clearly shows that NPAs increased sharply between 2015 and 2018. The main reasons were excessive lending, weak loan checking systems, economic slowdown, and problems in big corporate projects. During this time, banks faced lower profits and financial pressure, especially public sector banks. After 2018, the situation slowly improved. The government and the Reserve Bank of India introduced important reforms like the Insolvency and Bankruptcy Code (IBC), stricter banking rules, and recapitalization of banks. These steps helped banks recover bad loans and improve their financial position. Banks also became more careful while giving loans and improved their monitoring systems.

Even during the COVID-19 pandemic, timely support measures helped control a sudden rise in NPAs. By 2025, the NPA level became more stable and manageable. Overall, the study concludes that although NPAs created serious challenges, proper reforms and better management helped strengthen the Indian banking system over time.

Suggestions and Recommendations

Based on the findings of the study, the following suggestions are given to reduce NPAs and strengthen the Indian banking system:

1. Strengthening Credit Appraisal System

Banks need to enhance their loan approval procedures through conducting proper credit assessments and implementing background verification processes. Banks need to assess borrowers repayment capacity before they approve large loan amounts. Good credit evaluation practices stop lenders from losing money through loan default..

2. Better Monitoring and Supervision

Banks should conduct regular monitoring of their loan accounts. Large corporate loans require special monitoring which banks should perform on their loan accounts. Early warning systems should be used to detect signs of default at an early stage. Timely action can stop loans from becoming Non-Performing Assets.

3. Effective Implementation of IBC

The Insolvency and Bankruptcy Code (IBC) process needs improvements through faster execution and better operational efficiency. Legal process delays decrease the amount of money that parties can retrieve through legal proceedings. The Reserve Bank of India together with the government needs to establish methods for quickly resolving stressed assets.

4. Use of Technology and Data Analytics

Banks should use advanced technology and artificial intelligence and data analytics to evaluate credit risk and track loan performance. Digital tools enable lenders to enhance transparency while decreasing the likelihood of human mistakes during their lending processes.

5. Diversification of Loan Portfolio

Banks should avoid granting their loans excessively to one particular sector which includes both infrastructure and real estate. The practice of spreading loans across various industries will decrease the total risk which an organization faces.

6. Strengthening Public Sector Banks

Government banks need to obtain operational independence together with professional

management. The banking system needs to reduce external and political factors that affect lending decisions.

7. Improving Recovery Mechanisms

Recovery tribunals and legal systems should be strengthened to ensure faster recovery of bad loans. Strong recovery processes increase discipline among borrowers.

8. Promoting Financial Discipline Among Borrowers

Strict action should be taken against wilful defaulters. At the same time, awareness programs should be conducted to promote responsible borrowing and financial discipline.

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IMPACT OF WOMEN'S INCOME ON INTRA-HOUSEHOLD BARGAINING POWER AND HOUSEHOLD WELFARE: EVIDENCE FROM RANCHI DISTRICT

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Abstract

This study examines the impact of women's income on intra-household bargaining power and household welfare in Ranchi district of Jharkhand. The research is empirical and based on primary data collected from 110 respondents using a structured questionnaire measured on a 5-point Likert scale. Women's income is considered as the independent variable, while intra-household bargaining power and household welfare are combined as the dependent variable. The data were analysed using descriptive statistics and simple linear regression with the help of IBM SPSS software. The findings reveal a positive and statistically significant relationship between women's income and the combined outcome variable ($\beta = 0.324$, $p < 0.05$). The results indicate that women's income explains 10.5% of the variation in bargaining power and household welfare. This suggests that increased income enhances women's participation in decision-making and improves household living standards, including education and healthcare. Although the explanatory power is moderate, the study highlights the importance of women's economic empowerment in promoting household well-being. The study concludes that strengthening women's access to income-generating opportunities can significantly contribute to social and economic development.

Keywords: Women's Income, Bargaining Power, Household Welfare, Economic Empowerment

Introduction

Women's economic participation has become a critical driver of social and economic development, especially in developing regions like India. In recent years, increasing attention has been given to the role of women's income in influencing intra-household dynamics and improving overall household welfare. Traditionally, households were viewed as a single decision-making unit; however, modern economic theories, particularly the intra-household bargaining model, argue that household decisions depend on the relative bargaining power of individual members. Women's income plays a crucial role in enhancing their bargaining power within the household. When women contribute financially, they gain greater participation in

decision-making related to consumption, education, healthcare, and investments. Empirical evidence suggests that increased control over income allows women to influence resource allocation in favor of child welfare, nutrition, and long-term household well-being. In the Indian context, socio-cultural norms often restrict women's autonomy, limiting their participation in financial decisions. However, with rising employment opportunities and financial inclusion initiatives, women's economic contribution is increasing, thereby reshaping traditional household power structures. Studies have shown that women's access to income and assets significantly improves their autonomy and strengthens their role in household decision-making.

Moreover, enhanced bargaining power of women has been linked with improved household welfare outcomes, including better education for children, improved healthcare, and higher standards of living. When women control resources, households tend to allocate more towards essential and productive expenditures.

Despite these developments, there is limited empirical evidence at the micro level, particularly in regions like Ranchi district of Jharkhand. Therefore, this study aims to examine the impact of women's income on intra-household bargaining power and household welfare, providing insights into gender dynamics and economic empowerment at the local level.

Literature Review

Antman (2014) examined the relationship between women's employment and intra-household bargaining power using micro-level data from developing economies. The study applied an empirical approach to analyze how women's participation in the labor force influences household decision-making dynamics. The findings revealed that women who are employed or contribute economically to the household tend to have greater influence over financial and non-financial decisions. The study concluded that employment enhances women's bargaining position, thereby increasing their participation in decisions related to consumption, children's education, and household resource allocation. **Doss (2013)** provided a comprehensive review of intra-household bargaining models and highlighted the key determinants of bargaining power in developing countries. The study emphasized that factors such as women's income, education, and ownership of assets significantly influence their ability to negotiate within the household. Using theoretical and empirical insights, the study demonstrated that increased bargaining power leads to improved allocation of resources toward health, education, and overall welfare. The research strongly supports the idea that economic empowerment of women enhances household outcomes. **Heath & Tan (2019)** investigated the impact of economic opportunities on women's autonomy and labor

supply decisions in the Indian context. Using household-level data, the study found that increased access to income-generating opportunities significantly improves women's participation in the labor market. Furthermore, women with higher earnings were observed to have greater decision-making authority within the household. The study concluded that income not only enhances economic independence but also strengthens women's role in shaping household decisions. **Baland & Ziparo (2017)** explored intra-household bargaining mechanisms in developing countries with a focus on socio-economic and cultural factors. The study highlighted that gender norms, unequal income distribution, and control over resources play a crucial role in determining bargaining power within households. The authors argued that even when women earn income, their bargaining power may be constrained by traditional norms and institutional factors. The study emphasized the importance of addressing structural inequalities to improve women's decision-making authority. **Duflo (2012)** examined the relationship between women's empowerment and economic development through a comprehensive review of global evidence. The study found that when women have control over income and resources, they tend to allocate more towards children's health, nutrition, and education. The research highlighted that empowering women economically leads to better development outcomes at both household and societal levels. The study concluded that gender equality in economic participation is essential for sustainable development. **Anderson & Eswaran, 2009, opined that the study** analysed the impact of property rights and asset ownership on women's autonomy and bargaining power. Using data from developing countries, it was found that women who own assets or have legal rights over property possess greater control over household decisions. The study also observed that increased bargaining power leads to changes in consumption patterns, with reduced spending on non-essential items and increased focus on essential goods such as food, education, and healthcare. The findings highlight the importance of legal and economic empowerment. **Ma & Piao (2020)** investigated the role of income in shaping gender roles and intra-household

bargaining power. The study employed econometric analysis to examine how income acts as a mediating factor between gender norms and decision-making authority. The findings indicated that higher income enables women to challenge traditional norms and assert greater control over household decisions. The study concluded that economic independence is a key driver of women's empowerment in both social and financial contexts. **Zhang & Li, 2022** This study examined the relationship between women's bargaining power and household expenditure patterns using data from developing economies. The findings revealed that households where women have greater bargaining power tend to allocate more resources towards productive and welfare-enhancing activities such as education and healthcare. The study also found that increased female income significantly improves overall household welfare. The results support the argument that women's economic contribution leads to better financial decision-making within households. **Dimova et al. (2022)** explored the impact of women's bargaining power on child outcomes in developing countries. The study used empirical data to analyze how women's control over resources influences household spending behavior. The findings showed that women with higher bargaining power prioritize investments in children's education and overall family welfare. The study emphasized that gender differences in spending patterns play a crucial role in improving long-term household outcomes. **Hossain & Nikolov (2021)** examined the relationship between women's bargaining power and child health outcomes using cross-country data. The study found that increased bargaining power of women leads to significant improvements in child health indicators such as nutrition and healthcare access. The research highlighted that women's economic empowerment has long-term benefits for household welfare and human capital development. The study concluded that strengthening women's decision-making power is essential for sustainable social development.

Research Gap

Although a substantial body of literature has examined the relationship between women's

income, intra-household bargaining power, and household welfare, several important gaps still remain. Most existing studies have focused on broader national or international contexts, with limited attention to region-specific dynamics, particularly in developing regions like Jharkhand. Furthermore, many studies have analysed bargaining power and household welfare separately, rather than considering them as a combined outcome, which restricts a comprehensive understanding of women's overall influence within the household. Additionally, previous research has largely emphasized secondary data or macro-level analysis, with relatively fewer studies based on primary data at the micro (household) level. There is also limited empirical evidence capturing the socio-cultural realities of semi-urban and rural areas such as Ranchi district, where traditional norms may still influence women's decision-making power despite income generation. Moreover, the role of women's income as a direct determinant of both bargaining power and household welfare has not been sufficiently explored using simple and integrated statistical models.

Therefore, this study attempts to fill these gaps by providing a micro-level empirical analysis using primary data from Ranchi district, and by examining the combined effect of women's income on intra-household bargaining power and household welfare, thereby offering a more holistic understanding of women's economic empowerment.

Objectives of the Study

- To examine the impact of women's income on intra-household bargaining power.
- To analyse the effect of women's income on household welfare.
- To study the overall relationship between women's income, bargaining power, and household welfare.

Hypothesis

- **H₀ (Null Hypothesis):** Women's income has no significant impact on intra-household bargaining power and household welfare.

- **H₁ (Alternative Hypothesis):** Women's income has a significant positive impact on intra-household bargaining power and household welfare.

Research Methodology- The present study is empirical and quantitative in nature, aiming to examine the impact of women's income on intra-household bargaining power and household welfare in Ranchi district of Jharkhand. The study is based on primary data collected through a structured questionnaire using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). A total of 110 respondents were selected using the convenience sampling technique. The independent variable of the study is women's income (WI), while the dependent variable is the combined measure of intra-household bargaining power and household welfare (IHBPHW). Demographic variables such as age, education, occupation, income, and family type were also considered. The collected data were analyzed using IBM SPSS software. Descriptive statistics and simple linear regression analysis were employed to examine the relationship between variables. The regression model used in the study is:

$$\text{IHBPHW} = \beta_0 + \beta_1(\text{WI}) + \varepsilon$$

The hypothesis was tested at a 5% level of significance to determine the impact of women's income on household decision-making power and welfare.

Independent Variable (IV): Women's Income

Dependent Variables (DV): Intra-household Bargaining Power Household Welfare

Data Analysis and Hypothesis Testing Demographic Distribution of Respondents

1. Age

Table 1: Age

Category	Frequency	Percentage
Below 25	20	18.2%
25–35	40	36.4%
36–45	30	27.3%
Above 45	20	18.2%
Total	110	100%

Source: Primary Data

The age-wise distribution of respondents indicates that the majority (36.4%) belong to the 25–35 years age group, followed by 27.3%

in the 36–45 years category. Respondents below 25 years and above 45 years each constitute 18.2% of the total sample. This shows that most participants are in their economically active and decision-making stage of life, which is important for analysing intra-household bargaining power and welfare outcomes.

2. Education

Table 2: Education

Category	Frequency	Percentage
Illiterate	10	9.1%
School Level	35	31.8%
Graduate	40	36.4%
Postgraduate & Above	25	22.7%
Total	110	100%

Source: Primary Data

The educational profile reveals that a significant proportion of respondents are graduates (36.4%), followed by those with school-level education (31.8%). Around 22.7% have postgraduate and higher qualifications, while only 9.1% are illiterate. This indicates a moderate to high level of educational attainment, which may positively influence awareness, income generation, and participation in household decision-making.

3. Occupation

Table 3: Occupation

Category	Frequency	Percentage
Homemaker	30	27.3%
Employed	35	31.8%
Self-employed	25	22.7%
Other	20	18.2%
Total	110	100%

Source: Primary Data

The occupational distribution shows that 31.8% of respondents are employed, while 27.3% are homemakers. Additionally, 22.7% are self-employed, and 18.2% fall under other categories. This suggests that a considerable portion of women are economically active, either through formal employment or self-

employment, which can enhance their financial independence and bargaining power within the household.

4. Monthly Income (₹)

Table 4: Monthly Income (₹)

Category	Frequency	Percentage
No Income	25	22.7%
Below 10,000	35	31.8%
10,000–30,000	30	27.3%
Above 30,000	20	18.2%
Total	110	100%

Source: Primary Data

The income distribution indicates that the largest group (31.8%) earns below ₹10,000 per month, followed by 27.3% earning between ₹10,000–30,000. About 22.7% of respondents report having no income, while only 18.2%

earn above ₹30,000. This reflects that a majority of respondents fall in the lower to middle-income category, highlighting the importance of income in influencing household welfare and decision-making authority.

5. Family Type

Table 5: Family Type

Category	Frequency	Percentage
Nuclear	65	59.1%
Joint	45	40.9%
Total	110	100%

Source: Primary Data

The family type analysis shows that 59.1% of respondents belong to nuclear families, while 40.9% live in joint families. This indicates a shift towards nuclear family systems, where women may have relatively greater autonomy and participation in household decisions compared to traditional joint family setups.

Hypothesis Testing

Table 6 Variables Entered/Removed^a

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	WI ^b	.	Enter
a. Dependent Variable: IHBPHW			
b. All requested variables entered.			

Source: Computed by the Researcher using SPSS Software

Table 1 presents the variables included in the regression model. The independent variable, women's income (WI), was entered into the model using the enter method, while no variables were removed. The dependent variable is the combined index of intra-

household bargaining power and household welfare (IHBPHW). This indicates that the study examines the direct effect of women's income on the overall household decision-making power and welfare. Thus, the model is appropriately specified to test the stated objectives and hypothesis.

Table 7 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.324 ^a	.105	.097	.48811
a. Predictors: (Constant), WI				

Source: Computed by the Researcher using SPSS Software

Table 2 shows the overall fitness of the regression model. The correlation coefficient ($R = 0.324$) indicates a moderate positive relationship between women's income and the combined dependent variable (IHBPHW). The coefficient of determination ($R^2 = 0.105$) reveals that approximately 10.5% of the variation in intra-household bargaining power and household welfare

is explained by women's income. The adjusted R^2 (0.097) further confirms the model's explanatory power after adjusting for sample size. The standard error of estimate (0.48811) is relatively low, indicating that the model provides a reasonably good fit. Overall, the model suggests that women's income has a meaningful, though partial, influence on household outcomes.

Table 8: ANOVA^a

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.027	1	3.027	12.706	.001 ^b
	Residual	25.731	108	.238		
	Total	28.759	109			
a. Dependent Variable: IHBPHW						
b. Predictors: (Constant), WI						

Source: Computed by the Researcher using SPSS Software

Table 3 presents the ANOVA results, which test the overall significance of the regression model. The F-value of 12.706 with a significance level of 0.001 ($p < 0.05$) indicates that the model is statistically significant. This means that

women's income significantly predicts the combined outcome variable (IHBPHW). In other words, the regression model as a whole is valid and reliable for explaining the relationship between women's income and household bargaining power and welfare. Therefore, the independent variable has a statistically significant effect on the dependent variable.

Table 9 Coefficients^a

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.365	.480		4.927	.000
	WI	.407	.114	.324	3.565	.001
a. Dependent Variable: IHBPHW						

Source: Computed by the Researcher using SPSS Software

Table 4 shows the regression coefficients, which indicate the strength and direction of the relationship between women's income and the dependent variable. The unstandardized coefficient ($B = 0.407$) for women's income is positive, suggesting that an increase in women's income leads to an increase in intra-household bargaining power and household welfare. The standardized coefficient ($Beta = 0.324$) indicates a moderate effect size. The t-

value (3.565) and significance level ($p = 0.001 < 0.05$) confirm that this relationship is statistically significant. Hence, women's income has a positive and significant impact on household decision-making power and welfare outcomes.

Hypothesis Testing

Hypothesis:

- **H₀ (Null Hypothesis):** Women's income has no significant impact on intra-household bargaining power and household welfare.
- **H₁ (Alternative Hypothesis):** Women's income has a significant positive impact on intra-household bargaining power and household welfare.

Decision Rule:

If the p-value is less than 0.05, the hypothesis is accepted.

Result:

From Table 4, the significance value ($p = 0.001$) is less than 0.05. The regression results reveal that women's income has a positive and statistically significant impact on intra-household bargaining power and household welfare. The p-value (0.001) is less than the standard threshold of 0.05, confirming the significance of the relationship. Therefore, the alternative hypothesis is accepted, indicating that an increase in women's income enhances their decision-making power and improves overall household welfare.

Link with Objectives

- **Objective 1:** To examine the impact of women's income on intra-household bargaining power and household welfare. **Achieved:** Regression results show a significant positive impact ($B = 0.407$, $p < 0.05$)
- **Objective 2:** To analyze the relationship between women's income and household well-being. **Achieved:** $R = 0.324$ confirms a positive relationship
- **Objective 3:** To evaluate the contribution of women's income in improving decision-making power and living standards. **Achieved:** $R^2 = 10.5\%$ shows women's income contributes to improvement, though other factors also play a role. The findings of the study indicate that women's income plays a significant role in enhancing intra-household bargaining power and household welfare. The regression

analysis confirms a positive and statistically significant relationship between women's income and the combined outcome variable. Although the explanatory power of the model is moderate, the results clearly suggest that increasing women's income leads to improved decision-making authority and better living conditions within the household. Thus, all the objectives of the study are successfully achieved, and the proposed hypothesis is supported.

Findings of the Study

1. The study finds a positive relationship between women's income and the combined variable of intra-household bargaining power and household welfare ($R = 0.324$).
2. The regression results show that women's income explains 10.5% of the variation in household bargaining power and welfare ($R^2 = 0.105$), indicating a moderate level of influence.
3. The ANOVA results ($F = 12.706$, $p = 0.001$) confirm that the overall regression model is statistically significant.
4. The coefficient of women's income ($B = 0.407$) is positive, suggesting that an increase in income leads to an improvement in decision-making power and household welfare.
5. The significance value ($p = 0.001 < 0.05$) indicates that women's income has a statistically significant impact on intra-household bargaining power and household welfare.
6. The study confirms that women's economic contribution enhances their role in household decisions and improves living standards.

Conclusion

The study concludes that women's income plays a significant role in improving intra-household bargaining power and overall household welfare in Ranchi district. The results of regression analysis reveal a positive and statistically significant relationship between women's income and the combined outcome variable. This indicates that as

women's income increases, their participation in household decision-making also improves, leading to better allocation of resources towards education, healthcare, and overall well-being. Although the explanatory power of the model is moderate, the findings clearly highlight the importance of women's economic empowerment in enhancing family welfare. Therefore, increasing women's access to income-generating opportunities can contribute significantly to both household development and social progress.

Suggestions

- i. Promote Women Employment: Government and private sectors should create more employment opportunities for women to enhance their financial independence.
- ii. Skill Development Programs: Training and skill development initiatives should be introduced to improve women's earning capacity, especially in rural areas.
- iii. Financial Inclusion: Encourage women to participate in banking, savings, and investment activities through schemes like Jan Dhan Yojana and SHGs.
- iv. Awareness Programs: Conduct awareness campaigns to educate families about the importance of women's participation in decision-making.
- v. Support for Self-Employment: Provide financial support, microfinance, and subsidies to women entrepreneurs to promote self-employment.
- vi. Education and Empowerment: Improving women's education will further strengthen their bargaining power and long-term welfare outcomes.

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ARTIFICIAL INTELLIGENCE AS DISRUPTION AND OPPORTUNITY: RETHINKING EMPLOYMENT AND COMPETITIVENESS IN THE DIGITAL AGE

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Abstract

Artificial Intelligence has emerged as one of the most transformative technologies of the 21st century, reshaping industries, productivity patterns, and also the labour markets worldwide. Its integration into manufacturing, healthcare, finance, logistics, and business services is driving innovation and economic growth, with global estimates projecting a contribution of nearly \$19.9 trillion to the economy by 2030. However, the impact of AI on employment remains complex and contested. While AI-driven automation threatens routine, low-skilled, and entry-level positions, AI-led augmentation is simultaneously creating opportunities in high-skilled domains such as data science, IT services, cybersecurity, and decision-making support. This dual trajectory underscores the importance of distinguishing between automation AI, which substitutes human labour, and augmentation AI, which enhances human capabilities. India exemplifies these dynamics. With its AI market projected to reach \$17 billion by 2027, adoption across industries is fuelling competitiveness and enabling integration into global value chains. As per the study, around 69% of jobs in India remain vulnerable to automation, particularly in business process outsourcing and clerical work. National initiatives such as Skill India, Future Skills PRIME, and the National Strategy for Artificial Intelligence aim to address these challenges by promoting re-skilling, up-skilling, and digital literacy. Similarly, private-sector initiatives led by firms like Infosys and TCS demonstrate the critical role of corporate reskilling strategies. This paper explores how AI is simultaneously an opportunity and a disruption, emphasising the policy, educational, and organisational responses required to ensure inclusive growth. The findings suggest that the future of work will depend not only on technological advances but also on the capacity of societies to integrate human and artificial intelligence in complementary ways.

Keywords: Artificial Intelligence, Employment, Reskilling, Digital Transformation, India

Introduction

Artificial Intelligence (AI) has become a defining force in the transformation of global industries. Its integration into business processes, manufacturing, healthcare, logistics, and financial systems is reshaping productivity, competitiveness, and labour markets. Increasingly, scholars and policymakers view AI as a general-purpose technology—comparable to earlier industrial revolutions—

with the potential to fundamentally alter both the scale and nature of work (Brynjolfsson & McAfee, 2014). Global estimates suggest that AI could add nearly \$19.9 trillion to the world economy by 2030, primarily through automation, efficiency gains, and the creation of entirely new industries (PwC, 2020). At the firm level, AI adoption is linked to innovation and, in certain contexts, even higher employment. Studies show that AI is not only streamlining operations but also enabling small

and medium enterprises to develop new products and services (Brookings Institution, 2023). Patent-based evidence further suggests that AI-related innovations significantly improve labour productivity, indicating that digital technologies can complement rather than replace human contributions (Balsmeier & Woerter, 2019). In sectors such as manufacturing, AI drives real-time supply chain optimization, predictive maintenance, and production precision. Yet, these benefits are often concentrated in technologically advanced economies, raising concerns about widening global inequalities (UNCTAD, 2021).

India provides a compelling case study of both the promise and challenges of AI. The Indian AI market is projected to reach \$17 billion by 2027, growing at nearly 25% annually (NASSCOM, 2023). AI adoption is fuelling productivity across industries such as healthcare, manufacturing, finance, and logistics, enabling firms to strengthen their global value chain participation (UNCTAD, 2021). However, the employment effects are uneven. AI is creating opportunities in high-skilled roles such as data science, IT services, and financial analysis, while simultaneously threatening low-skilled and routine occupations—especially in business process outsourcing (BPO) and clerical functions, which employ a significant share of India's workforce (Arntz, Gregory, & Zierahn, 2016). Recent studies suggest that up to 69% of jobs in India are at risk of automation, though most will undergo augmentation rather than outright elimination (World Bank, 2020). In response, policymakers are emphasising re-skilling and up-skilling, with initiatives like Skill India and the National AI Strategy promoting digital literacy and training in emerging technologies (NITI Aayog, 2018). A critical distinction must be made between automation AI, which substitutes human labour, and augmentation AI, which enhances human capabilities. Research shows that while AI complements high-skilled work by improving decision-making, analytical tasks, and creativity, it disproportionately

threatens low-skilled and entry-level roles that are easier to automate (Felten, Raj, & Seamans, 2021). A Stanford study underscores this risk, describing entry-level employees as “canaries in a coal mine,” given their vulnerability to repetitive task automation (Stanford University, 2025). Still, fears of mass unemployment may be overstated in the near term. Evidence from the Federal Reserve Bank of New York (2024) suggests that although AI adoption is rising, widespread layoffs remain limited. Many companies are instead investing in retraining programs to redeploy existing workers. In some cases, AI adoption has even spurred job growth in emerging areas such as AI governance, cybersecurity, and data management. This reflects a broader trend where AI reconfigures rather than eliminates jobs.

The key policy challenge, therefore, lies in preparing the workforce for these transitions. Reskilling and upskilling initiatives must focus on digital literacy, adaptability, and socio-cognitive skills that are less easily automated (McKinsey, 2023). Equally important are inclusive strategies to prevent deepening inequalities between skilled and unskilled workers, and between advanced and developing economies. AI should be framed not as a substitute for human labour but as a complement—reshaping industries in ways that demand new forms of collaboration between humans and machines. AI embodies both opportunity and disruption. It has the potential to generate economic growth, drive innovation, and transform productivity at the firm level. Yet, its employment implications remain uneven, with the greatest risks concentrated among vulnerable workers. Whether AI becomes a tool of empowerment or displacement will depend largely on the collective responses of governments, organisations, and educational systems. Ultimately, the future of work in the age of AI will be shaped not only by technological progress but by society's readiness to integrate human and artificial intelligence in a balanced and inclusive manner.

Table: 1:Global Workforce Restructuring and AI Adoption Strategies: Evidence from Selected Companies (2023–2025)

Year	Company Name	Country	Employees Laid Off	AI Investment / Plan Summary
2023	Meta	USA	10,000	Launched Llama 2, doubling down on generative AI
2023	Unity Technologies	USA	Around 900	No explicit AI strategy mentioned
2024	Duolingo	USA	Not specified	Transition to AI-generated courses
2024	AMD	USA	1,000	Pivot to AI-focused chips
2024	Scale AI	USA	1,000	Shift to advanced AI solutions and automation
2024	Microsoft	USA	10,000	Major investment in OpenAI; AI integration across products
2024	Intel	USA	15,000 (15%)	Cost restructuring to strengthen AI capabilities
2024	SAP	Germany	8,000 roles restructured	Reallocation toward business AI; reskilling efforts
2024	Salesforce	USA	Around 1,000	Hiring AI product sales; reducing non-AI engineering hires
2025	Salesforce	USA	4,000	AI-powered customer support agents are replacing routine roles
2025	TCS (Tata Consultancy Services)	India	12,000	Pivot to GenAI and “Future-Ready” transformation initiatives
2025	Commonwealth Bank (CBA)	Australia	45	AI chatbot (“Bumblebee”) replaced human support roles
2025	IgniteTech	USA	80% of staff	Mandated AI tool usage; replaced most roles with automation
2025	Oracle	USA	3,000+	Shift focus from legacy CX teams to AI/cloud infrastructure
2025	Autodesk	USA	1,350	AI-based design platform development
2025	CrowdStrike	USA	5% of the workforce	Doubling down on AI cybersecurity tools
2025	UPS	USA	Not specified	Pricing and logistics roles reduced due to AI-based workflows
2025	BlackRock	USA	600	Restructuring citing AI and tech-driven efficiency
2025	IBM	USA	200 (HR staff)	Replacing HR roles with AI chatbots
2025	Klarna	Sweden	700 roles automated	Used AI for customer service; later re-hired due to poor UX
2025	Microsoft	USA	6,000	Mass layoffs during major AI pivot (Azure/OpenAI integrations)
2025	Meta (Facebook)	USA	3,600	Refocused on AI & Reality Labs investments
2025	Amazon	USA	Not specified	Alexa and internal roles impacted by GenAI rollout
2025	Google (Alphabet)	USA	Not specified	Ads and search restructuring; major Gemini/AI expansion
2025	Intel	USA	22,000 (20%)	Efficiency and automation projects tied to AI transformation
2025	HP	USA	Up to 9,000 (by the end of 2025)	AI streamlining in printing & PC businesses

Source: Online news article and studies compiled by the author

The period between 2023 and 2025 marks a turning point in how global corporations are restructuring their workforces in response to Artificial Intelligence (AI). Across technology, finance, logistics, and services, companies are simultaneously investing heavily in AI

capabilities while executing widespread layoffs. This dual pattern reflects a broader structural reconfiguration of work, where automation and augmentation are reshaping labour markets at scale. In 2023, Meta initiated one of the earliest and most visible shifts by

cutting 10,000 jobs while reallocating resources to its generative AI program, Llama 2. The move signalled a deliberate pivot from human-intensive operations toward AI-led innovation. By contrast, Unity Technologies reduced approximately 900 positions without articulating a clear AI strategy, illustrating how not all workforce reductions were tied directly to explicit AI adoption.

By 2024, the trend had intensified. Microsoft announced 10,000 layoffs while deepening its integration of OpenAI tools into Azure and other products. Intel undertook one of the largest reductions that year, restructuring 15,000 positions—equivalent to 15% of its workforce—to focus on AI capabilities and efficiency. SAP, a leading enterprise software provider, reallocated 8,000 roles toward business AI initiatives, combining layoffs with reskilling efforts. Salesforce followed a different approach by reducing about 1,000 non-AI engineering jobs while ramping up AI product development and sales. Together, these cases illustrate how companies were not merely cutting costs but repositioning their human capital to align with AI-driven growth strategies. The pace accelerated further in 2025. In India, one of the top leading IT firms, Tata Consultancy Services (TCS) has planned to reduce around 12,000 jobs as part of its “Future-Ready” GenAI transformation, signalling that AI-driven restructuring is no longer limited to advanced economies. Smaller yet symbolically important cases also emerged: the Commonwealth Bank of Australia replaced 45 human agents with its “Bumblebee” chatbot, while IgniteTech went further, automating 80% of its workforce through mandated AI tool

usage. These examples highlight how AI adoption is penetrating both large corporations and niche firms.

Other technology companies restructured selectively. Oracle, Autodesk, and CrowdStrike reorganised thousands of roles, focusing on AI-enabled design platforms, cloud infrastructure, and advanced cybersecurity. In the financial sector, BlackRock cut 600 employees, citing AI-enhanced efficiency, while IBM replaced 200 HR staff with AI chatbots. Klarna automated 700 customer service positions but was forced to rehire some staff after customers reported poor user experiences—demonstrating that over-reliance on automation can backfire. Logistics giant UPS also leaned on AI workflows to streamline pricing and delivery operations, although exact job loss numbers were not disclosed. The largest layoffs of 2025 came from Intel and HP. Intel announced a staggering 22,000 job cuts, representing nearly 20% of its workforce, directly linked to efficiency gains from AI transformation projects. HP followed with plans to reduce up to 9,000 employees, restructuring its printing and PC divisions around AI-enabled optimisation. Collectively, this evidence demonstrates that AI adoption is not producing incremental adjustments but instead driving systemic workforce restructuring. Routine, repetitive roles are increasingly automated, while firms expand investments in AI-driven products, services, and infrastructure. The challenge ahead lies in whether these transformations will be matched with large-scale reskilling and redeployment, ensuring that workers are not left behind in the global shift toward AI-first business models.

Table: 2: Indian Company's Recent Layoffs and Strategies for Investment in AI (2023–2025)

Company Name	Year(s) of Layoffs	AI Investment / Plans
Tata Consultancy Services (TCS)	2023:10,818	Embedding AI and automation at scale; "AI Experience Zones"; shifting delivery model to AI-first
	2025: 12,000	
Infosys	2023: 24,182	Expanding generative AI capabilities (Topaz), 80+ client projects; reskilling 270,000+ in GenAI
	2024: 400 trainees	
Wipro	2023 - 21,875	Focus on AI-driven augmentation of roles, integrating AI in marketing, HR, and delivery
	2025 - 1,157	

HCL Technologies	2025 - 2,506	Upskilling 50,000 more in GenAI; partnerships with NVIDIA, Intel, IBM, hyperscale's
Tech Mahindra	2023 -10,669	Restructuring and automation for cost optimisation; aligning workforce with tech-driven demand
	2025- 3,785	
Ola Electric	2025: Over 1,000	
Others (Flipkart, Paytm, Unacademy, Pocket FM, Cult.fit, etc.)	Various startups laid off hundreds in 2025 across sectors	Some are facing AI disruption; not specified

Source: *Online news article and studies compiled by the author*

AI is exerting a dual influence on India's industrial landscape, acting both as a catalyst for growth and as a driver of employment restructuring. India's major IT service providers—Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, and Tech Mahindra—are embedding AI into their operations at scale. Initiatives such as TCS's "AI Experience Zones" and Infosys's Topaz platform exemplify how firms are leveraging generative AI to improve service delivery, while also reskilling hundreds of thousands of employees. Infosys alone has reskilled over 270,000 staff in generative AI, and Wipro and HCL have partnered with technology leaders such as NVIDIA and IBM to strengthen AI adoption. Tech Mahindra has restructured its workforce with an explicit focus on cost optimisation through automation. Despite these forward-looking investments, job reductions remain significant. TCS reduced 10,818 employees in 2023 and is projected to cut a further 12,000 by 2025. Infosys reported more than 24,000 exits in 2023 alongside a slowdown in trainee hiring, while Wipro and HCL together recorded thousands of job losses over the 2023–2025 period. These figures demonstrate that AI adoption, while enhancing competitiveness, is also driving structural changes in India's employment landscape.

The impact is not limited to IT services. In 2025, Ola Electric laid off over 1,000 workers as part of strategic restructuring, while startups such as Flipkart and Paytm also reduced hundreds of employees, citing AI-driven disruptions and cost realignment. Collectively, these cases highlight the paradoxical nature of AI adoption in India: it boosts productivity and innovation but simultaneously accelerates

workforce displacement in routine and entry-level roles. This underscores the urgent need for large-scale re-skilling and up-skilling initiatives to ensure that AI-driven transformation translates into inclusive and sustainable employment growth rather than widespread labour market polarisation.

Stakeholder Role in Upgrading Skills and Incorporating AI for the Future

The accelerated integration of Artificial Intelligence (AI) across industries necessitates a coordinated response from multiple stakeholders—including governments, corporations, educational institutions, and civil society—to ensure that the workforce is adequately prepared for emerging labour market demands. Evidence suggests that nearly 69% of jobs in developing economies like India are at risk of automation or augmentation, underscoring the urgency of structured skill development (World Bank, 2020).

Governments play a critical role in creating enabling policy frameworks. Government can plan various motivational investments plan for the public–private partnerships for vocational training, apprenticeships, and technology incubators, which can facilitate the diffusion of AI knowledge beyond elite institutions (Brynjolfsson & McAfee, 2014). Moreover, social protection programs and labour market policies can buffer displaced workers during transitional phases.

Corporations are equally central, as they directly drive AI adoption. Leading firms such as Infosys and TCS have begun reskilling

hundreds of thousands of employees in generative AI applications (NASSCOM, 2023). Organisational strategies should prioritise lifelong learning by integrating continuous professional development, modular AI training, and cross-functional mobility, enabling employees to adapt to shifting job structures (McKinsey & Company, 2023). Importantly, businesses must adopt a “human-in-the-loop” approach, ensuring AI augments rather than replaces labour in decision-making and customer-facing roles.

Educational institutions are pivotal in embedding AI competencies within curricula. Beyond technical AI programming, universities and schools must integrate interdisciplinary modules on ethics, critical thinking, and socio-economic implications of AI (UNESCO, 2021). Early exposure to AI concepts can demystify the technology for students, while partnerships with industry can align curricula with real-world skill needs. Massive Open Online Courses (MOOCs) and open-access platforms can also democratize AI education for non-elite learners globally (Balsmeier & Woerter, 2019).

Civil society and multilateral organizations contribute by fostering digital inclusion and equity. Initiatives such as the OECD’s AI Policy Observatory emphasize guidelines for inclusive and transparent AI adoption, ensuring vulnerable populations are not excluded from future labour markets (OECD, 2021). NGOs and community-based organisations can also bridge gender and rural-urban divides by providing grassroots training in digital tools and AI literacy. Upgrading labour skills for an AI-driven future requires a multi-stakeholder ecosystem that blends public policy, corporate investment, and educational reform. Governments must provide infrastructure and policies, corporations must commit to reskilling, educators must reframe curricula, and civil society must promote inclusivity. Only through such coordinated action can AI be harnessed as a tool for empowerment, reducing the risks of displacement while fostering innovation-driven growth.

India’s Initiatives for AI Adoption and Skilling (2018–2025)

Over the last few years, the Indian government has actively pursued strategies to confront the twin challenges of AI adoption—technological readiness and workforce preparedness. Recognising AI as a “game-changing enabler” for economic growth, the Government of India has launched a series of national-level frameworks, institutional programs, and skilling initiatives to ensure that the workforce adapts to AI-driven transformations. A foundational step was the release of the National Strategy for Artificial Intelligence (NSAI) – #AIForAll by NITI Aayog in 2018, which continues to guide policy actions (NITI Aayog, 2018). The strategy emphasises AI for social inclusion, economic growth, and skill development, identifying five key focus areas: healthcare, agriculture, education, smart mobility, and smart cities. This document also set the stage for AI skilling through the creation of Centres of Research Excellence (COREs) and International Centres for Transformational AI (ICTAIs). Building on this, the Ministry of Electronics and Information Technology (MeitY) launched the Future Skills PRIME initiative (2019) in partnership with NASSCOM, focusing on re-skilling and up-skilling workers in AI, machine learning, big data, and cybersecurity. As of 2023, more than 2.5 lakh learners had been trained under this initiative, targeting both IT professionals and non-technical learners (NASSCOM, 2023).

Furthermore, the Responsible AI for Youth (2020) program was introduced to equip students from government schools with foundational knowledge of AI. This initiative, implemented in collaboration with Intel and other partners, aims to democratize AI learning at an early stage, ensuring that rural and underserved populations are not excluded from the AI revolution (MeitY, 2020). Complementing this, the AI-for-All program (2021), launched as part of India’s National Education Policy, integrated a four-hour self-learning module on AI in multiple regional languages, accessible to students, teachers, and the public (CBSE & Intel, 2021). India has also integrated AI into higher education and research ecosystems. The All India Council for

Technical Education (AICTE) has mandated the inclusion of AI, data science, and machine learning modules in engineering curricula since 2021, aligning academic training with industry needs (AICTE, 2021). Additionally, research-focused initiatives such as the National Artificial Intelligence Mission (proposed in 2020 and under implementation) seek to strengthen India's AI R&D ecosystem through innovation hubs, data-sharing frameworks, and public-private partnerships (MeitY, 2022).

At the industry level, large IT firms such as Infosys, TCS, and Wipro have independently launched extensive reskilling programs. Infosys reported reskilling over 270,000 employees in generative AI tools under its "Topaz" initiative, while TCS introduced "AI Experience Zones" and digital training modules for thousands of employees (NASSCOM, 2023). These private sector measures complement government-led efforts, highlighting a collaborative model of skilling. India's approach over the past five years reflects a multi-stakeholder strategy: national AI policy frameworks, government-led digital skilling programs, integration of AI into education, and large-scale corporate reskilling initiatives. These efforts aim not only to mitigate job displacement risks but also to position India as a global hub for AI talent and innovation. The challenge ahead lies in scaling these programs equitably across diverse regions and populations, ensuring that AI adoption becomes an engine of inclusive growth rather than a source of labour market polarisation.

New Opportunities and Better Job Prospects in the Age of AI

The global rollout of AI is not only disrupting existing employment structures but also creating a wide spectrum of new job opportunities across industries. Research suggests that while automation reduces demand for routine and low-skilled labour, it simultaneously stimulates growth in high-value roles that require creativity, critical thinking, and human-machine collaboration (Brynjolfsson & McAfee, 2014; Felten, Raj, & Seamans, 2021). Rather than a zero-sum dynamic of "jobs lost versus jobs gained," AI adoption is reconfiguring the labour market, generating emerging career pathways

worldwide. Technology-intensive roles have expanded most rapidly. Professions such as data scientists, AI engineers, machine learning specialists, and prompt engineers are in high demand, with global job postings for AI-related roles rising by more than 100% between 2016 and 2023 (LinkedIn, 2023). In parallel, new roles in AI governance, ethics, and compliance have emerged to manage risks associated with bias, transparency, and data security (OECD, 2021). Similarly, the cybersecurity sector is experiencing strong job growth, as firms adopt AI-enabled defence systems that require skilled human oversight (CrowdStrike, 2025).

Beyond core technology roles, AI is fostering opportunities in applied domains. Healthcare has seen the rise of roles in AI-assisted diagnostics, medical robotics, and digital health management (WHO, 2022). In finance, demand has increased for algorithmic risk analysts, digital compliance officers, and AI-powered financial advisors (World Economic Forum, 2023). Creative industries are also adapting while generative AI automates routine content creation, it has simultaneously spurred demand for human-AI collaboration in design, media curation, and storytelling (UNESCO, 2021).

AI is also transforming entrepreneurship and global value chains. By lowering entry barriers to innovation, small and medium enterprises (SMEs) can leverage AI tools for predictive analytics, marketing automation, and global market access. Studies show that AI-driven startups are among the fastest-growing segments in venture capital portfolios, especially in sectors such as climate technology, logistics, and education (Brookings Institution, 2023).

Importantly, the rollout of AI is generating opportunities for lifelong learning and reskilling industries. Governments and corporations worldwide are investing in digital training programs, creating jobs for trainers, curriculum designers, and edtech professionals. For example, the European Union's Digital Skills Agenda and India's *FutureSkills PRIME* platform highlight how public-private partnerships are fostering entirely new employment ecosystems around AI literacy

(NITI Aayog, 2018; European Commission, 2021).

In conclusion, while AI adoption undeniably disrupts traditional employment, it also generates qualitatively better opportunities by elevating the demand for human judgment, innovation, and oversight. The future labour market will increasingly reward adaptability and hybrid skill sets that combine technical literacy with creativity, ethics, and socio-cognitive strengths. Thus, AI should be understood not merely as a driver of job displacement but as a catalyst for creating sustainable and future-oriented career opportunities worldwide.

Emerging AI Job Opportunities in India

India's accelerating adoption of AI is reshaping its job market, opening diverse and rewarding opportunities across sectors. A recent report projects that India's AI sector will generate 2.3 million job openings by 2027, though the talent pool may only reach 1.2 million, signalling a substantial need for reskilling (Bain & Company, 2025). This talent gap is intensifying demand, leading to rising salaries for AI professionals and an expansion in hiring.

Tech-driven recruitment surges: Capgemini India plans to hire 40,000–45,000 employees in 2025, emphasizing building an AI-ready workforce—35–40% of whom will be lateral hires (Economic Times, 2025). HCL Technologies is offering significantly higher compensation for fresh graduates with specialized skills in AI, cybersecurity, and digital engineering, with 15–20% of its fresher intake in these areas (TOI, 2025). Additionally, Best Buy is expanding its Bengaluru tech centre by over 40%, bringing AI engineer, software engineer, and product manager roles on board (Reuters, 2025).

Global players deepening India presence: OpenAI is opening its first office in New Delhi, recruiting local talent to drive AI development tailored for Indian contexts (WSJ, 2025).

Gig and micro tasking opportunities: Uber now enables its network of over 1.4 million

Indian driver-partners to earn extra income by assisting with AI data-labelling tasks—demonstrating how gig economy platforms are expanding AI-related roles (Economic Times, 2025).

Startups rising with technology talent demand: AI infrastructure firms like Neysa, which offers GPU cloud services and secured \$50 million in funding, are hiring engineers to support GenAI acceleration (Wikipedia, 2025). **Sarvam AI**, focused on vernacular large language models, received government backing—including GPU access—to develop India's first indigenous foundational model (Wikipedia, 2025). Overall, the AI rollout in India is spawning a multi-tiered employment ecosystem. Leading MNCs are expanding AI talent hubs, consultancies are ramping up lateral hiring, platforms are offering gig-based microtasking roles, and startups are driving demand for deep technical expertise—all while commanding higher salaries. This environment offers professionals a promising shift toward better-paying, tech-forward, and future-ready AI careers.

Conclusion:

AI presents India with a paradox: while it offers unprecedented opportunities for growth, efficiency, and global competitiveness, it also poses significant challenges for our labour market. On the one hand, AI adoption in industries such as IT services, healthcare, manufacturing, and finance is driving productivity, innovation, and the emergence of new, better-paying roles in areas like data science, generative AI development, and cybersecurity. Startups such as Sarvam AI and Neysa, alongside multinational firms like Infosys, TCS, and Capgemini, are already investing heavily in reskilling and AI-focused hiring, reflecting the strong demand for future-ready talent. On the other hand, the risks of job displacement are especially high in routine, clerical, and BPO roles. This calls for a national response that goes beyond technological adoption to include inclusive workforce strategies. Large-scale reskilling and upskilling initiatives, integration of AI literacy into education, and industry–government partnerships will be critical in transforming

potential disruption into opportunity. If India can leverage its demographic dividend by aligning skills with AI-driven demand, it has the potential not only to mitigate labour market risks but also to emerge as a global hub for AI talent and innovation.

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