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Content

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Abstract
In India, population growth and employment growth does not seem to bear a proportional relationship. Since independence, unemployment rate has been progressively growing in spite of various policy implementations through Five-Year plans. The transformation of employment structure and trend in India is one of the significant economic and social factors for the expansion of economy. Historical experience suggests that a sustained rise in per capita incomes and improvement in employment conditions is not attainable without a structural transformation that moves surplus labor from agriculture and other informal economic activities to higher productivity activities in the non-farm sectors. This paper aims to highlight India's employment structure, trends and challenges over the years using the secondary data sources. It also provides some insights regarding India's performance from a cross-country comparative analysis estimating the growth semi-elasticity of structural change.

Keywords: India, Structural change, Employment, Cross-country comparative analysis

Introduction
The Indian economy is characterized by declining output elasticity of employment generation, increasing in-formalization within the organized sector, and a weak tendency towards structural transformation arising from a mismatch between high-growth and high labor absorption sectors together with serious constraints on the supply-side of the labor market, such as persistently low rates of labor force participation by women laterally with a crisis of proper training and skill development. Thus, the labor market suffers from structural problems on both the demand and the supply side. The results are persistently high levels of informality and underemployment, as well as high levels of open unemployment among educated youth. The resulting debates on jobless growth, low female labor force participation, and continued informality have yielded rich insights into the Indian experience. However, there is sometimes a lack of clarity on what indicators to look at and what the appropriate points of comparison are. The result is confusion with regard to the pace and nature of structural transformation. the propose a set of indicators that draw on existing literature and together can present a comprehensive picture of structural change. In these indicators, special emphasis is placed on employment conditions as opposed to output growth rates.

Employment structure and trends in India have evolved significantly over the years, influenced by various economic, social, and technological factors. This paper makes an attempt to study the recent changes in employment structure of India by analyzing the employment share of different economic sectors. It also provides some insights regarding India's performance from a cross-country comparative analysis estimating the growth semi-elasticity of structural change.

Methodology
To study and analyze employment structure and trends in India, researchers typically employ a variety of methodologies that incorporate data collection, analysis, and interpretation. Here's a comprehensive methodology outline for studying employment structure and trends in India:

1. Data Collection:
(a) Primary Data Sources:
o   Surveys: Utilize large-scale national surveys like the National Sample Survey (NSS), Periodic Labor Force Survey (PLFS), and Census data to gather detailed information on employment patterns, sectoral distribution, demographics, and socio-economic characteristics.
o   Labor Force Surveys: Focus on collecting data related to employment status (employed, unemployed, not in labor force), industry sectors, occupations, and earnings.
(b) Secondary Data Sources:
o   Government Reports: Access reports from government ministries and agencies (e.g., Ministry of Labor and Employment, Ministry of Statistics and Programmed Implementation) for official statistics and policy documents related to employment trends.
o   **International Organizations**: Utilize data and reports from international organizations such as the International Labour Organization (ILO), World Bank, and United Nations to benchmark against global trends and standards.

2. **Data Analysis:**
   1. **Descriptive Analysis**:
      o Sect-oral Distribution: Analyze the distribution of employment across agriculture, industry (including manufacturing), and services sectors.
      o Occupational Categories: Examine employment trends by occupational categories (skilled, semi-skilled, unskilled) and job types (formal, informal).
   2. **Trend Analysis**:
      o Longitudinal Analysis: Study changes in employment patterns over time (decadal, annual) to identify trends, shifts, and structural transformations.

Analysis and Discussions

Employment Structure in India: The employment structure in India can be seen from different perspective as shown below;

1. **Sectoral Distribution**:
   o **Agriculture**: Historically, agriculture has been a significant employer in India, though its share in total employment has been declining. It still employs a large portion of the rural population.
   o **Industry**: Manufacturing and industrial sectors, including mining, construction, and manufacturing industries, contribute to employment. This sector has seen fluctuations based on economic cycles and policy changes.
   o **Services**: The services sector, including IT, finance, healthcare, education, and hospitality, has been a major driver of employment growth in recent decades. It has shown a rising trend in employment due to globalization and technological advancements.

Industry-wise percentage distribution of workers As per annual PLFS reports, Broad Industry Division-wise percentage distribution of workers during PLFS 2017-18 to 2022-23 are as below (*in percentage*):

Sl. No	Broad industries as per NIC, 2008	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
1	Agriculture	44.1	42.5	45.6	46.5	45.5	45.8
2	Trade, hotel & restaurant	12.0	12.6	13.2	12.2	12.1	12.1
3	Construction	11.7	12.1	11.6	12.1	12.4	13.0
4	Manufacturing	12.1	12.1	11.2	10.9	11.6	11.4
5	Transport, Storage & communications	5.9	5.9	5.6	5.4	5.6	5.4
6	Electricity, water, etc	0.6	0.6	0.6	0.6	0.6	O.5
7	Mining & quarrying	0.4	0.4	0.3	0.3	0.3	0.3
8	Other services	13.2	13.8	11.9	12.0	11.9	11.4

2. **Nature of employment**:
   o **Informal employment**: A significant portion of India's workforce is engaged in the informal sector, which includes self-employment, casual labor, and small-scale enterprises. Informal employment lacks job security, benefits, and often operates outside regulatory frameworks.
   o **Formal employment:** It basically includes employment in Government sector, registered companies and organizations offers more stability, social security benefits, and higher wages in comparison.
3. **Rural-Urban Divide**:
   o **Rural areas** predominantly rely on agriculture and allied activities for employment. Non-farm rural employment includes small-scale industries, construction, and services.
   o **Urban areas** have a more diverse employment structure, with opportunities in manufacturing, services, and increasingly in the IT sectors.

Employment Generation and Structural Change over the Past Decade

Over the past decade, India has experienced significant changes in its employment structure and trends, driven by various factors including economic reforms, technological advancements, and demographic shifts. Here are some key points to consider:

1. **Shift from Agriculture to Services**: One of the prominent trends has been the declining share of agriculture in total employment. Agriculture, which traditionally employed a large segment of the population, has seen a gradual decrease in its share due to mechanization, land fragmentation, and rural-urban migration. This shift has been accompanied by a corresponding increase in the services sector.
2. **Rise of the Services Sector**: The services sector has emerged as the largest employer in India's economy. This includes industries such as IT services, retail, healthcare, education, and hospitality. The expansion of services has been fueled by growing urbanization, increasing consumer demand, and advancements in technology.
3. **Manufacturing Sector Challenges**: While manufacturing remains crucial for economic growth and job creation, its share in total employment has not expanded significantly. Challenges such as infrastructure bottlenecks, regulatory issues, and global competition have hindered the sector's ability to absorb more labor.
4. **Informal Sector Dominance**: A significant portion of India's workforce continues to be employed in the informal sector, which lacks job security, social benefits, and decent working conditions. This informal economy includes activities ranging from street vending to small-scale manufacturing and services.
5. **Gender Disparities**: Gender disparities persist in India's labor market, with women often facing lower workforce participation rates compared to men. This is influenced by socio-cultural factors, inadequate access to education and skills training, and limited opportunities in certain sectors.

6. **Youth Employment**: India has a large and growing youth population, which presents both opportunities and challenges for employment generation. Efforts to enhance skill development and promote entrepreneurship among the youth are crucial for harnessing demographic dividends.
7. **Government Initiatives**: Various government initiatives such as Make in India, Skill India, Digital India, and Startup India have been launched to promote employment generation, skill development, and entrepreneurship. These programs aim to boost manufacturing, enhance digital infrastructure, and improve employability.

India's employment landscape over the past decade reflects a complex interplay of structural changes, sect-oral shifts, and policy interventions. While the services sector has grown and diversified, challenges remain in achieving inclusive and sustainable employment growth, particularly in manufacturing and the informal economy. Continued efforts in skill development, infrastructure enhancement, and economic reforms will be crucial for addressing these challenges and fostering inclusive growth in the future.

Employment Structural Change: Cross-Country Relationships

The relationship between economic growth and structural change, particularly in the context of employment structure, is crucial for understanding India's position in the global economy.

1. **Comparative Analysis**:
   o **China**: Experienced a significant structural transformation with a large-scale shift from agriculture to manufacturing, driving economic growth and urbanization.
   o **India**: Growth has been driven more by the services sector, with manufacturing lagging behind expectations despite initiatives like Make in India.
   o **Advanced Economies**: Have seen shifts towards service-based economies with high value-added services, reflecting mature industrialization and technological advancement.

Where Does India Stand?

India is positioned as one of the fastest-growing major economies, with a youthful demographic profile that offers potential for future economic dynamism. India's employment structure reflects a significant shift towards services, while challenges such as informal sector employment and gender disparities persist. Understanding the dynamics of growth and structural change vis-à-vis global trends helps assess India's development trajectory and informs policy decisions aimed at fostering inclusive and sustainable economic growth. Continued reforms in labor markets, education, and infrastructure will be essential for maximizing India's potential in the global economy.

Country	1991-2000		2000-2010		2010-2018	
	Initial GDP per capita (PPP $)	Elasticity	Initial GDP per capita (PPP $)	Elasticity	Initial GDP per capita (PPP $)	Elasticity
India	1795	0.38	2579	0.26	4235	0.11
Bangladesh	1535	0.36	1938	0.51	2883	0.32
China	1535	0.11	3452	0.19	8885	- 0.1
Vietnam	1736	0.27	2955	0.38	5089	0.38

Conclusion

In conclusion, the analysis of employment structure and trends in India reveals a dynamic landscape shaped by various factors including economic policies, technological advancements, demographic shifts, and socio-cultural dynamics. Here are key takeaways based on the current understanding: Sect-oral Transformation: India has witnessed a notable shift from agriculture to services as the primary driver of employment growth. The services sector, encompassing IT, retail, healthcare, and hospitality, has expanded significantly, reflecting urbanization and rising consumer demand. Challenges in Manufacturing: Despite efforts to promote manufacturing through initiatives like Make in India, the sector's employment contribution has not seen proportional growth. Challenges such as infrastructure bottlenecks, regulatory complexities, and global competition continue to hinder its potential as a major job creator. Informal Sector Dominance: A substantial proportion of India's workforce remains engaged in the informal sector, characterized by low wages, lack of social security, and limited access to formal employment benefits. Addressing the informal sector's challenges is crucial for inclusive growth and improving livelihoods. Gender Disparities: Persistent gender disparities in workforce participation rates highlight ongoing challenges in achieving gender equality in the labor market. Efforts to enhance access to education, skill development, and supportive workplace policies are essential to empower women economically. Youth Employment: India's youthful demographic presents both opportunities and challenges. Efforts to promote skill development, entrepreneurship, and job creation tailored to the needs of the youth population are critical for harnessing demographic dividends. Policy Implications: Effective policy interventions are essential to address structural imbalances, enhance labor market flexibility, and foster sustainable economic growth. Policies should focus on promoting sectors with high employment potential, improving labor productivity, and ensuring social protection for all workers. Future Directions: Looking ahead, India needs to prioritize investments in education, healthcare, infrastructure, and technology to support a diversified and resilient economy. Embracing digital transformation and green technologies can create new opportunities while addressing environmental sustainability concerns. In conclusion, understanding and responding to the complexities of India's employment structure require holistic strategies that integrate economic, social, and environmental dimensions. By fostering inclusive growth, reducing inequalities, and enhancing workforce capabilities, India can strive towards achieving sustainable development goals and improving the quality of life for its citizens.

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Abstract
This paper describes the importance of ensuring quality education in India, framing of NEP 2020 came into light and paved the way for integrating technology in education. Integrating ICT in education has provided learners not only on content but on different skills of problem-solving, critical analysis and thought-processing abilities which has also enabled the learners to become innovative, creative and critical thinkers. It delivers an approach to information and broadens communication skills and help transforming society into a universal area. Therefore, the present study aims to examine and discuss the process of integrating ICT in education in terms of the challenges faced by them and the impact of learning through ICT. The paper will employ using of existing resources and discuss the challenges faced in different forms.

Introduction
Educational communities around the world have adopted and advanced learning strategies with the help of technologies and likewise information and communication technology has revamped the education system into an effective learning tool that helps to ensure and provide easy access in gaining information and develop strategic planning in educational sectors. After independence of India, Dr. S Radhakrishnan Commission revamped the old policies of education system based on scientific and technical knowledge after which different commission like Kothari Commission 1966, National Education Policy 1968 and 1986 which was further modified into 1992, Yashpal Committee 1993, NEP 2019 were educational reforms which led to changes in the educational policies.

In education, the integration of ICT has delivered a positive, comprehensible and reachable environment for effective teaching and learning (Amit Ahuja & Richi Pahuja). The simplest meaning of ICT in education is teaching and learning with ICT. Its tools can provide an array of opportunities that focus on learner centred approaches (UNESCO ICTCFT, 2018). ICT in education also provides learners access to vast knowledge, collaborative learning environment, facilitates sharing of information, inculcates advanced thinking skills and make an individual promote self -learning. Integration of ICT in education has gotten immense attention to educators in providing quality teaching learning process and it became a mechanism that saved the major loss of learning during pandemic situation. Additionally, NEP 2020 in the light of this has given importance in making teachers competent to deal with diversities and challenges by using available mechanisms and ICT is one of the most prominent and effective mechanism.

Review of Related Literature
Batipshisha (2004) revealed that ICT has made changes not only in the field of education but in society itself in bringing cultural transmission, changing the traditional system of learning into a modern system of classroom learning, which changes students' learning environment. It also helps them connect through technology integration and build collaborative learning in their own time and space. Aftab Ahmad Mir & Rameez Salam Naiko (2019) showed how learning through ICT has impacted the teaching-learning process between teachers and students. The paper encouraged the application of ICT techniques in all subjects and to make effective use of IT to ensure effective learning. It also showed the importance of introducing more and more methods of ICT in the teaching-learning process by providing training to pre-service teachers. Ronald M. Hernandez (2017) states that ICT has optimized expanding the education system numerously in various ways Accompanied by technological tools, the use of ICT in education has become an increasingly ever-present reality in society. Parra (2012) claims that school is one of the venues where technology has had the greatest impact, which in turn has affected the role of the teacher and become a part of the school's everyday life. Madushan Rajendran & Balwinder Kaur (2023) showed that integrating technology has both negative and positive impacts It is impossible to ignore the flexibility and the benefits that technology provides along with the compelling need for change it has inspired to the users. Technology has both its pros and cons in education, it depends on the user at the end of the day how to maximise on it.

NEP 2020 on Integrating ICT in Education

The National Education Policy (NEP) 2020 in India emphasizes the importance of technology in educational settings. India is said to be a global leader in the context of information and communication technology. The Sustainable Development Goal 4 (SDG4) of 2030 agenda for sustainable development focuses on ensuring inclusion, providing quality education and also promotes lifelong learning opportunities to all by 2030. The policy has also acknowledged the potential of online education and promotes the development of high quality digital-content. Affordability, Accessibility, Quality, Equity and Accountability are the five foundational pillars on the basis of which NEP 2020 has been aligned to 2023 agenda for sustainable development.

NEP 2020 envisions ICT as a transformative tool to marginalize education, enhance access to quality learning resources and prepare students for the challenges of the 21st century digital world. The policy has also stressed the importance of creating a robust digital infrastructure in all educational institutions including schools and higher education institutions. The latest technology usage such as machine learning, artificial intelligence, block-chains, handled computing devices, educational software and hardware will make an impact on what students learn and how they learn. An autonomous body will be created with the name of National Educational Technology Forum (NETF) which will provide a platform to schools and educational institutions to exchange ideas related to technology and facilitate decision-making on different aspects. Following functions will be performed by NETF:
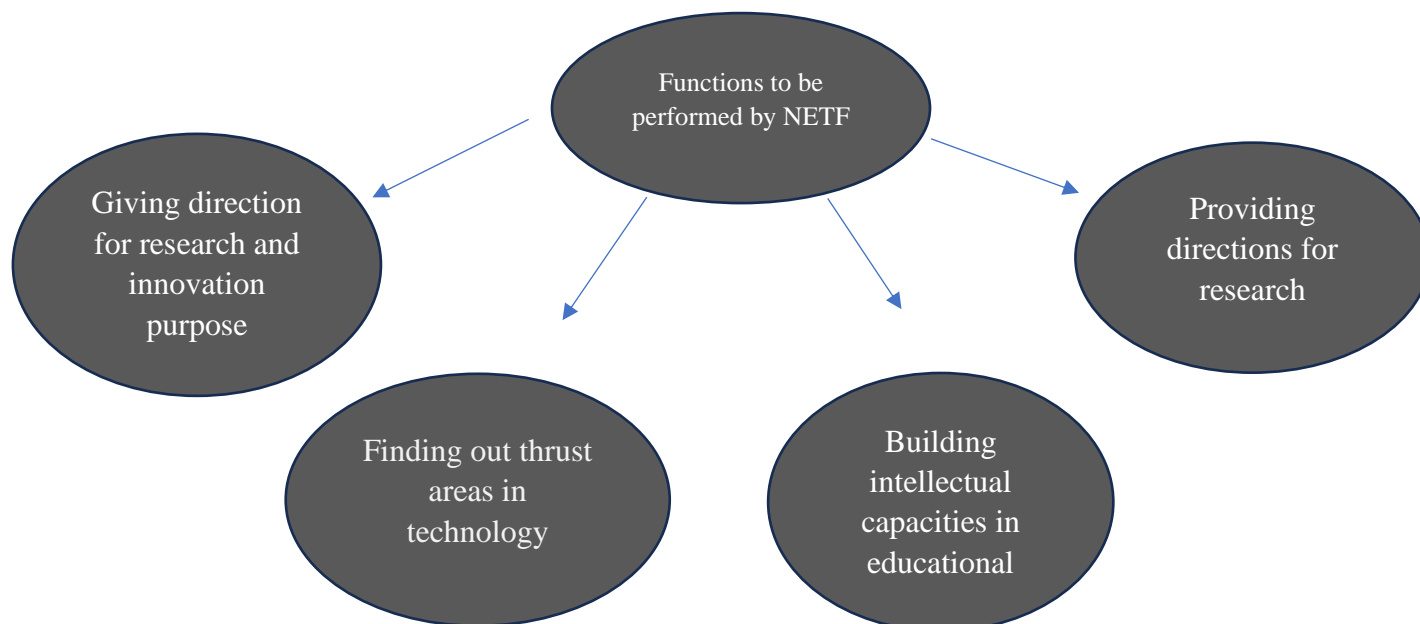

Figure 10.1: Functions to be performed by National Educational Technology Forum (NETF)
Source: (NEP 2020 Vision Integrating of Technological Interventions in Education System, Neha Jain & Anshula Dua 2023)

Role of ICT in Education

Learning through synchronous or asynchronous forms of online e-learning takes place via a variety of electronic devices- such as computers, smartphones, tablets, laptop etc. Integrating ICT in the educational context is a must in today's learning environment however teachers must possess requisite competencies to integrate ICT in their professional practices for quality education to learners. ICT tools provide an opportunity that focus on learner- centred approaches that help develop an independent attitude towards giving and receiving information. Traditionally education was considered a method of empowering society and mostly learn and teach through synchronous form however in the modern system, education has become more socio- endeavour that empowers as well as strengthens the economic development in the society by combining ancient and trendy approaches.

Integrating ICT resources in 21st century in education has an active role in bridging the gap between traditional and modern systems of learning. Earlier the education system was mostly teacher-oriented, the role of teacher was active and students were more towards passive listeners but now the whole education system has made a transformative leaning to education and students have become active participants in learning. NCF 2005 has also recommended that learning should be child centred and activity oriented.

Impact of integrating ICT in education

Integrating ICT (Information and Communication Technology) in education involves incorporating different digital technologies such as, computers, tablets, mobile phones, internet into various aspects of educational practices including curriculum design, instructional delivery, administrative process, assessing the working plans and decision making. The vital goal of integrating ICT tools is to improve educational outcomes, facilitates interactive learning environments, encourage collaboration and prepare students with essential digital literacy and skills. Integrating ICT in education has several significant impacts such as the following:

1. Access to Information: It provides easy access to information quickly and easily allowing for broader exploration of subjects or topic to both the teachers and students. It also enhances the ability for individual or groups to obtain and retrieve knowledge, data or resources that are relevant and necessary for their work.
2. Enhanced Learning Experience: Integrating ICT in the field of education provides interactive and engaging tools that enable the students to conduct their work practically and help them engage with diverse perspectives.
3. Collaboration and Communication: Integrating ICT facilitates collaboration among teachers, students and administration or experts through different platforms like video conferencing, online forums and share data or documents. Having an exposure to diverse information sources encouraged students to critically evaluate information, identify biases and develop informed opinions.
4. Personalized Learning: It allows the students to progress through content at their own pace and the teachers can use data and assessments to identify student's strengths and weaknesses. Personalized learning fosters a sense of ownership and responsibility for one's own learning experiences.
5. Skill development: Integrating ICT in education enables students to build their critical thinking ability, problem solving method and self- regulation skills which pave the way to learn and direct their resources more accurately.

Challenges on Integrating ICT in Education

1. Capacity building: Integrating ICT in education helps education administrators, teachers and students to strengthen the abilities, knowledge, skills and resources of individuals, institutions and systems to improve educational outcomes. Many projects related to incorporating ICT in schools have been undermined due to lack of new digital knowledge on the part of administrators. For this NEP 2020, has emphasize capacity building in ICT integration. It aims to train teachers and educational administrators in leveraging technology to enhance educational processes, digital content creation, and online teaching technologies.

2. Accessibility to technology: one of the most important challenges in accessing technology and online education is that all students and teachers do not have complete access to technology. A joint survey report by UNICEF and the International Telecommunication Unit (UTI) around 2.2. billion or two third of children and youngsters less than 25 years of age do not have internet access at home.

3. Lack of appropriate devices for all children: to integrate ICT in education, appropriate devices is required for every student and teacher to ensure and enhance teaching-learning processes. With specific time management, guidance and skills for students, a proper device for students is still found to be lacking behind in many households.

4. Lack of proper connectivity: in this modern generation several students and teachers utilise ICT resources for teaching and learning however poor connectivity brings hurdles to their work. It becomes a challenge to complete work and meet deadlines in a stipulated time.

5. Insufficient technical knowledge: Although India is moving forward towards digital literacy, a sufficient and proper knowledge on technical understanding and utilization is still a challenging task especially for people living in rural and underdeveloped areas as it becomes challenging for them to work with computers, internet and using latest technologies.

Objectives of the study

1. To examine the challenges faced in integrating ICT in education.
2. To study the impact of ICT in education

Methodology

The descriptive research method was used to develop this research. The study is based on secondary qualitative data retrieved from various institutional websites, archives, books, articles and findings reported in various research papers reviewed by the researchers.

Findings and Discussion of the study

As per the Objective 1: To examine the challenges faced in integrating ICT in education: It is observed that digital education mostly depends on the internet hence without proper equipment and skills of integrating ICT in education leads to a negative impact for both students and teachers. The study found that lack of proper connectivity through internet and devices creates a problem, brings barriers to connect information and loss their interest. NEP 2020 has also envisaged on the importance of integrating ICT in teaching learning process and likewise the study revealed that a trained professional teacher is on high demand and there is need for stakeholders, administration even for societies to take this issue into account to make educational system a quality outcome. For their learning, when students were given greater responsibility, they felt a sense of independence and accomplishment (Vachani,2020). It is the responsibility of the experts and leaders to take a step and lead the students to know the advantages and disadvantages of integrating ICT in education.

As per the second Objective: which is to study the impact of ICT in education: The study showed that the impact of ICT in education is profound. It has both negative and positive impact towards learning through ICT. It has provided a numerous information through different platforms and enhances learning to a vast array of opportunities. The study brings out that ICT provides a connective collaboration to many students at one time and bring varieties of ideas and information which enables them to generalised the outcome systematically. It also helped them personalized learning independently.

Conclusion

Technology has the potential to reform the education system and improve the quality of teaching- learning. Integrating ICT in education has impacted the lives of many teachers and students in their related work. Skilled and trained teachers are mostly required in all of the educational institutions. It is high time to use and access technology and new teaching methods for engaging and educating their students. Education has no boundaries, compartments and divisions and it has the potential to cater to holistic, multidisciplinary and broad- based education therefore, ICT comes in to guide, protect and lead education that can reform the education system and improve the quality of teaching and learning process. It was highlighted in the paper that the policy perspective provides scope and ways for the integration of ICTs in education. In this 21st generation a shift from teacher- centred to learner -centred is emphasized to create more interactive and engaging learning environment. When we talk about ICT in education there has been a tremendous impact on the education sector of India and even the importance of e-learning as well as e – content has been realized and accepted by various stakeholders of the education community. One solution to the challenges faced by students or teachers is applying blended approach to teaching learning process which will gradually and systematically help fill the gaps and make students and teachers more comfortable with digital transformation. ICT will play a major role in improving quality, inclusivity and equity of education if it is used in a responsible and proper manner.

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Abstract

Let $G = (V, E)$ be a simple and a connected graph of diameter D. The Hosoya polynomial of G is $H(G, x) := \sum_{k=1}^{D} d(G, k) x^k$, where $d(G, k) \geq 1$, is the number of vertex pairs at distance k. In this paper, we study the stability of the Hosoya polynomial of some family of graphs.

Keywords: Hosoya polynomial, Hosoya root, h-number, Hosoya stable graph.

1.   Introduction

Throughout this paper $G = (V, E)$ denotes a connected, simple and finite graph with vertex set $V = V(G)$ and edge set $E = E(G)$.

The distance $d(u, v)$ between two vertices u and v is the minimum of the lengths of paths between u and v. The diameter D of a graph G is defined as

$$D := \max \{d(u, v)\}. \ u, v \in V(G)$$

Let G be a connected graph of diameter D and let $d(G, k)$, $k \geq 1$, be the number of vertex pairs at distance k. The Hosoya polynomial of G is defined as

$$H(G, x) := \sum_{k=1}^{D} d(G, k) x^k.$$

A root of $H(G, x)$ is called a Hosoya root of G and set of all Hosoya roots of G is denoted by $Z(H(G, x))$.

2.   Main Results

2.1 h-number of Graphs

Definition 1. *Let G be a connected graph. The number of distinct real Hosoya roots of the graph G is called h-number of G and is denoted by $h(G)$.*

Theorem 1. *For any graph G, $h(G) \geq 1$.*

Proof. It follows from the fact that 0 is Hosoya root of any Graph.

Theorem 2. *If G_1 and G_2 are isomorphic graphs then $h(G_1) = h(G_2)$.*

Theorem 3. *Let G be a graph with diameter 2, then $h(G) = 2$.*

Proof. Let G has n vertices and m edges. Then by Theorem 1 in [5], we have

$$Z(H(G, x)) = \left\{ 0, \ \frac{m}{m - \binom{n}{2}} \right\}, \text{ hence } h(G) = 2.$$

Theorem 4. *For $n \geq 6$, the h-number of bipartite Cocktail party graph B_n is 3.*

Proof. By Theorem 8 in [5] we have the following quadratic equation:

$$x^2 + (n-1)x + (n-1) = 0.$$

It is easy to see that $\Delta = (n-1)(n-5)$, where Δ is the discriminant of the quadratic equation. Since $n \geq 6$, we have $\Delta > 0$. Therefore the Hosoya roots of bipartite Cocktail party graph B_n are real and distinct, for $n \geq 6$.

Theorem 5. *The h-number of bi-star graph $B_{(m,n)}$ is 1*

Proof. By the Theorem 13 in [5], the Hosoya polynomial of bi-star graph $B_{(m,n)}$ is $H(B_{(m,n)}, x) = mnx^3 + (m+n)x(x+1) + x$. It is suffices to prove that all the roots of $P(x) = mnx^2 + (m+n)x + m + n + 1$ are complex. The discriminant of $P(x)$ is $\Delta = (m+n)^2 - 4mn(m+n+1)$. If $m = n = 1$, $\Delta = -8$, therefore all the roots are complex. If m or n is 1, say $n = 1$, then

$$\Delta = (m+1)^2 - 4m(m+2)$$
$$< (m+1)(1 - 3m)$$
$$< 0.$$

Finally, if $m, n \neq 1$ then

$$\Delta = (m+n)^2 - 4mn(m+n+1)$$
$$< -3mn(m+n)$$
$$< 0.$$

Therefore all the nonzero Hosoya roots of the bi-star graph $B_{(m,n)}$ are complex.

Theorem 6. *The h-number of the corona $K_m \circ K_n$ is 1.*

Proof. Clearly, the diameter of $K_m \circ K_n$ is 3. Since the number of edges of

$$K_m \circ K_n \text{ is } \binom{m}{2} + m\binom{n}{2} + mn, d(K_m \circ K_n, 1) = \frac{1}{2} m(m + n^2 + n - 1).$$

Let

$V = \{v_1, v_2, \dots . v_m\}$ be the vertices of K_m and $V_i = \{v_{i1}, v_{i2}, \dots . v_{in}\}\{v_{i1}, v_{i2}, \dots, v_{in}\}$ be the vertices of ith copy of K_n for $i = 1, 2, \dots, m$. Then any vertices of V_i and any vertex $v_j \in V$, for $i \neq j$ are at distance 2. Therefore $d(K_m \circ K_n, 2) = m(m-1)n$. Finally, any vertices of V_i and any vertices of V_j are at distance 3, for $i \neq j$.

Hence $H(K_m \circ K_n, 3) = \frac{1}{2}m(m-1)n^2$ Therefore we have the following quadratic equation:

$$(m-1)n^2x^2 + 2(m-1)nx + n^2 + m + n - 1.$$

It is easy to see that the discriminant of the quadratic equation

$$\Delta = -4n^3(n+1)(m-1).$$

Since $K_m \circ K_n$ has nonzero Hosoya root only if $m > 1$. Therefore $\Delta < 0$, this completes the proof. Therefore all the nonzero Hosoya roots of $K_m \circ K_n$ are complex.

Corollary 7. *The h-number of Q(m,n) is 1.*
    Proof. It follows from the fact that $Q(m,n)$ and $K_m \circ K_{n-1}$ are isomorphic.

Theorem 8. *The h-number of the $n - $ barbell graph $B_{n,1}$ is 1.*
    Proof. It suffices to prove that all the nonzero Hosoya roots of the $n-$ barbell graph $B_{n,1}$ are complex. For $n = 1$, the $n-$ barbell graph $B_{n,1}$ has no nonzero roots. For $n > 1$, by Theorem 9 in [5] we have the following quadratic polynomial:
$$P(x) = (n-1)^2x^2 + 2(n-1)x + n(n-1) + 1.$$

It is easy to see that $\Delta = -4n(n-1)^3$, where Δ is the discriminant of the quadratic equation. Since $n \geq 2$, we have $\Delta < 0$. Therefore all the roots are complex.

Theorem 9. *Let G be a graph with diameter 3. Then either $h(G) = 3$ or $h(G) = 1$*
    Proof. We have 0 is a Hosoya root of any graph and number of complex roots are even. Therefore all the nonzero Hosoya roots of G are either complex or real. This implies that $h(G) = 3$ or $h(G) = 1$.

Theorem 10. *Let G be a graph of diameter 3 with n vertices and m edges. Then $h(G) = 3$ if and only if*

$$d(G,2) + 4m > \frac{2m}{d(G,2)}(n(n-1) - 2m$$

Proof. We have the Hosoya polynomial of G is

$$H(G,x) = d(G,3)x^3 + d(G,2)x^2 + d(G,1)x.$$

It is clear that the nonzero Hosoya roots of G and the roots of the quadratic polynomial
$$P(x) = d(G,3)x^2 + d(G,2)x + d(G,1)$$

are equal. But we have $d(G,1) = m$ and $d(G,3) = \binom{n}{2} - m - d(G,2)$ Then the discriminant of $P(x)$ is

$$\Delta = (d(G,2))^2 - 4m\left(\binom{n}{2} - m - d(G,2)\right)$$

$$= d(G,2)(d(G,2) + 4m) - 2m(n(n-1) - 2m).$$

Therefore the result follows from the fact that all the roots of quadratic polynomials are real and distinct if and only if $\Delta > 0$.

Corollary 11. *Let G be a graph of diameter 3 with n vertices and m edges. Then $h(G) = 2$ if and only if*

$$d(G,2) + 4m = \frac{2m}{d(G,2)}(n(n-1) - 2m)$$

Corollary 12. *Let G be a graph of diameter 3 with n vertices and m edges. Then $h(G) = 1$ if and only if*

$$d(G,2) + 4m < \frac{2m}{d(G,2)}(n(n-1) - 2m)$$

Theorem 13. *For $n \geq 2$, the h number of the path graph P_n is:*

$$h(P_n) = \begin{cases} 1 & ; if\ n\ is\ even \\ 2 & ; if\ n\ is\ odd \end{cases}$$

    Proof. From [2], the Hosoya polynomial of path graph P_n is

$$H(P_n, x) = x^{n-1} + 2x^{n-2} + \cdots + (n-1)x.$$

But

$$H(P_n,x)(x-1)^2 = x(x^n - nx + n - 1).$$

So it suffices to show that $x = 1$ is only real root of $f(x) = x^n - nx + n - 1$ when n is even and

Theorem 14. *We have the following:*

$$h(C_{2n+1}) = \begin{cases} 1 & ; if\ n\ is\ odd \\ 2 & ; if\ n\ is\ even \end{cases}$$

Proof. We have the Hosoya polynomial of C_{2n+1} is

$$H(C_{2n+1}, x) = (2n + 1)(x + x^2 + ... + x^n).$$

Therefore it is enough to show that $f(x) = 1 + x + x^2 + ... + x^{n-1}$ has no real root when n is odd and it has only one real root when n is even. This is followed from the fact that $x^n - 1 = (x - 1) f(x)$.

Graph G	Nonzero Hosoya roots of G	$h(G)$
$G1 \vee G2$	$\dfrac{n_1 n_2 + m_1 + m_2}{(n_1 n_2 + m_1 + m_2) - \binom{n_1 + n_2}{2}}$	2
Dutch-windmill graph G_3^n	$\dfrac{3}{2(1 - n)}$	2
Petersen graph	$-\dfrac{1}{2}$	2
Lollipop graph $L_{n,1}$	$-\dfrac{1}{1 - m} - \dfrac{m}{2}$	2
Bipartite Cocktail party graph B_n, for $n \geq 6$	$\dfrac{1 - n \pm \sqrt{(n - 1)(n - 5)}}{2}$	3
n-barbell graph $B_{(n,1)}$	$\dfrac{-1 \pm \sqrt{(n - n)^2}}{n - 1}$	1
Bi-star graph $B_{(m,n)}$	$\dfrac{-(m + n) \pm \sqrt{(m - n)^2 - 4mn(m + n)}}{2mn}$	1
Corona $K_m \circ K_n$	$\dfrac{-1 - m \pm \sqrt{n(n + 1)n(m - 1)}}{n(m - 1)}$	1
$Q(m,n)$	$\dfrac{1 - m \pm \sqrt{(n - 1)n(m - 1)}}{(n - 1)(m - 1)}$	1

Table 1: h-number of graph G

2.2 Stable Graph related to Hosoya Polynomial

We start with this section by defining a new terminology in graph theory.

Definition 2. *Let $G(V,E)$ be a simple finite connected graph. The graph G is said to be Hosoya stable or simply h-stable if all the nonzero Hosoya roots are lies in the left open half-plane, that is, if real part of the nonzero Hosoya roots are negative.*

Definition 3. *Let $G(V,E)$ be a simple finite connected graph. The graph G is said to be Hosoya unstable or simply h-unstable if G has a Hosoya root that lies in the right open half-plane, that is, if G has a Hosoya root with positive real part, that is G is not stable.*

Theorem 15. *The complete graph K_n is h-stable.*

Proof. The Hosoya polynomial of K_n is $\frac{1}{2}n(n - 1)x$ The result follows from the fact that K_n has no nonzero Hosoya roots.

Theorem 16. *Let G be a graph of diameter 2. Then G is h-stable.*

Proof. Let G be a graph with n vertices and m edges. Suppose G has diameter 2, then by Theorem 1 in [5] we have

$$H(G,x) = \left(\frac{1}{2}n(n - 1) - m\right)x^2 + mx$$

This implies that the nonzero Hosoya root of G is $\frac{-2m}{n(n-1)-m}$. Therefore it is enough to show that $n(n - 1) - m > 0$. Since the diameter of G is 2 we have,

$$m < \binom{n}{2}$$

$$= \frac{1}{2} n(n - 1)$$

$$< n(n - 1)$$

This completes the proof.

Corollary 17. *The Petersen graph P is h-stable.*

Corollary 18. *Let H and G be two graphs. Then $H \vee G$ is h-stable.*

Corollary 19. *The wheel graph W_n and is h-stable.*

Corollary 20. *r−partite graph Kn1,n2,...,nr (Kn1,n2,...,nr)2 is h-stable.*

Corollary 21. *The star graph S_n is h-stable.*

Corollary 22. *The Dutch windmill graph G_3^m is h -stable.*

Corollary 23. *The lollipop graph $L_{n,1}$ is h-stable.*

Theorem 24. *The bipartite Cocktail party graph B_n is h-stable.*
    Proof. By Theorem 4 we have all roots of B_n are real. Also we have all the real Hosoya roots are not positive. Therefore the bipartite Cocktail party graph B_n is h-stable.

Theorem 25. *The bi-star graph $B_{(m,n)}$ is h-stable.*
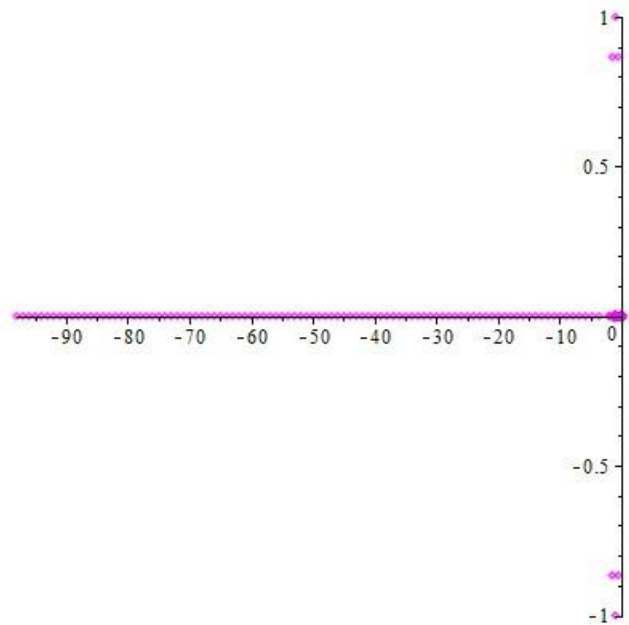
Figure 1: Hosoya roots of B_n for $1 \leq n \leq 100$.
    Proof. The Hosoya polynomial of bi-star graph $B_{(m,n)}$ [5] is
$$H\big(B_{(m,n)}, x\big) = mnx^3 + (m + n)x^2 + (m + n + 1)x$$

It is suffices to prove that all the roots of $P(x) = mnx^2 + (m+n)x + m+n+1$ are lies in the left half-plane. We have by Theorem 5 all the nonzero Hosoya roots of $B_{(m,n)}$ are complex. Observe that the real part of all the roots of $P(x)$ is $\frac{-(m+n)}{2mn}$. Therefore $B_{(m,n)}$ is h-stable.

Theorem 26. *The graph $K_m \circ K_n$ is h-stable.*
    Proof. It is suffices to prove that all the roots of $P(x) = (m-1)n^2x^2 + 2(m-1)nx + n^2 + m + n - 1$ are lies in the left half-plane. If $m = 1$, $K_m \circ K_n$ has no nonzero roots. If $m > 1$, we have by Theorem 6 all the nonzero Hosoya roots of $K_m \circ K_n$ are complex. Observe that real part of all the roots of $P(x)$ is $-\frac{1}{n}$, that is, $K_m \circ K_n$ is h-stable. □

Theorem 27. *The graph $Q(m,n)$ is h-stable.*
    Proof. We have if $Q(m,n)$ has a nonzero Hosoya root, then $m,n \geq 2$. From [2] we have the following quadratic equation:
$$(m - 1)(n - 1)^2x^2 + 2(m - 1)(n - 1)x + n^2 + m - n - 1.$$
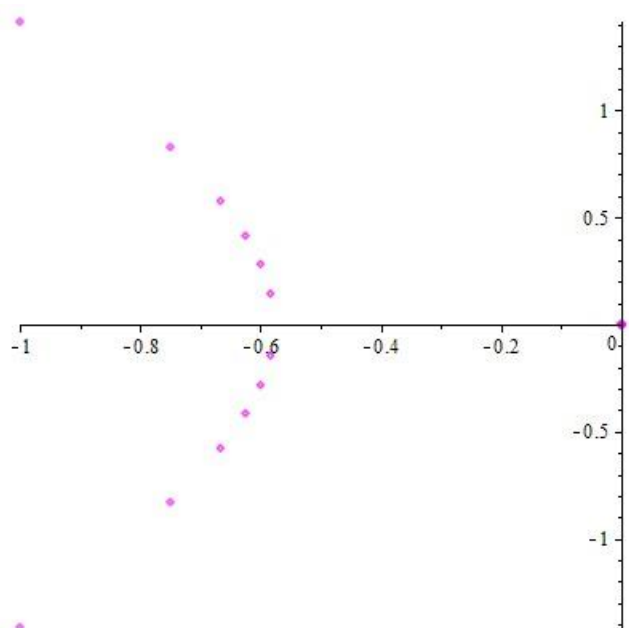
Figure 2: Hosoya roots of $B_{(n,n)}$ for $1 \leq n \leq 6$.
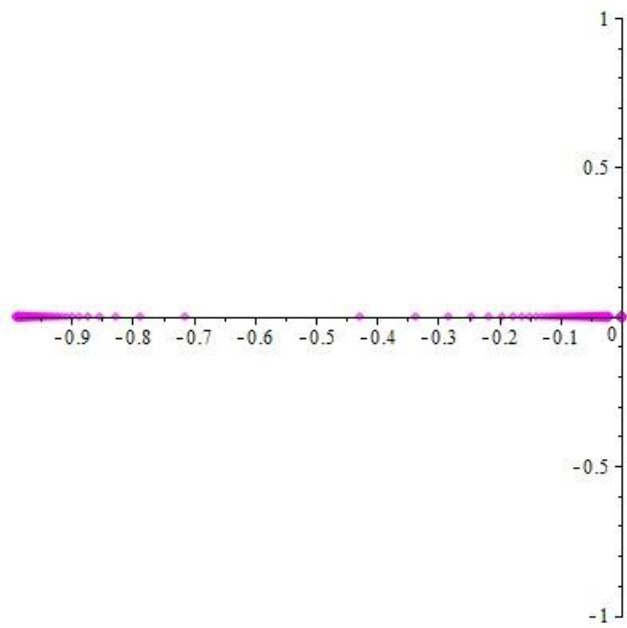
Figure 3: Hosoya roots of $B_{(n,n)}$ for $7 \leq n \leq 100$.
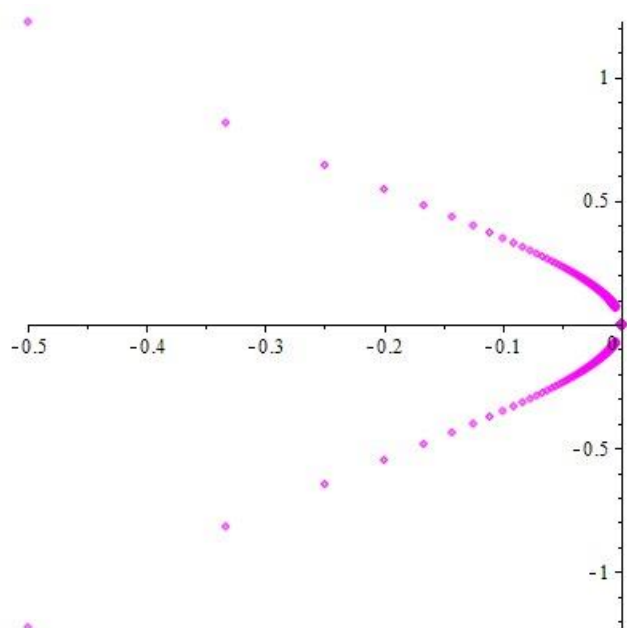
Figure 4: Hosoya roots of $K_n \circ K_n$ for $1 \leq n \leq 200$.

It is easy to see that the discriminant Δ of the quadratic equation is

$$\Delta = -4n(n-1)^3(m-1).$$

This implies that $n-1$, $m-1$ are positive. Therefore all the nonzero roots are complex and observe that real part of all the roots of the quadratic equation is $\frac{1}{1-n}$, this implies that $Q(m,n)$ is h-stable. Finally, we have diameter of $Q^2(m,n)$ is 2, therefore by Theorem 16 $Q^2(m,n)$ is h-stable.

Theorem 28. *The $n-$barbell graph $B_{n,1}$ is h-stable.*

    Proof. From [5] we have the following quadratic polynomial:

$$P(x) = (n-1)^2 x^2 + 2(n-1)x + n(n-1) + 1.$$

It is easy to see that $\Delta = -4n(n-1)^3$, where Δ is the discriminant of the quadratic equation. Since $n \geq 2$, we have $\Delta < 0$. Therefore all the roots are complex and observe that real part of all the roots of $P(x)$ is $\frac{1}{1-n}$, this implies that $Q(m,n)$ is h-stable. Finally, we have diameter of $Q^2(m,n)$ is 2, therefore by Theorem 16 $Q^2(m,n)$ is h-stable.

All the graphs discussed above have diameter less than 4 and nonzero Hosoya
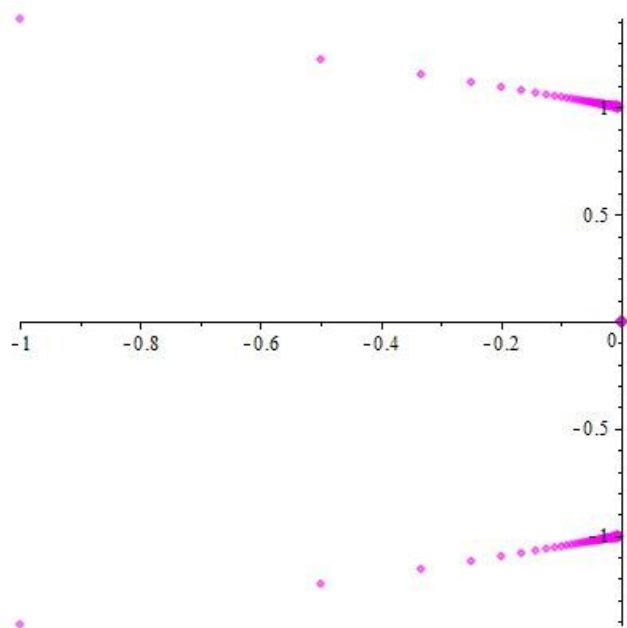
Figure 5: Hosoya roots of $B_{n,1}$ for $1 \leq n \leq 200$.

roots of these graphs are negative or have negative real part, that is, lies in the left half plane. This is no accident, but an instance of a general situation.

Theorem 29. *Let G be a graph with diameter D. If $D \leq 3$ then G is h-stable.*

    Proof. If $D = 1$, then zero is the only Hosoya root. If $D = 2$, then $H(G,x) = \binom{n}{2}x^2 - mx(x-1)$, where n and m are number of vertices and edges respectively. Therefore the only nonzero root is $\frac{-m}{\binom{n}{2}-m}$. Since m, $\binom{n}{2}$ are positive, that root is negative. Finally it suffices to prove that, if $D = 3$ then the roots of

$P(x) = x^2 + \frac{d(G,2)}{d(G,3)}x + \frac{d(G,1)}{d(G,3)}$ are negative or have negative real part. Consider the

Hurwitz matrix, $H_2 = \begin{bmatrix} \frac{d(G,2)}{d(G,3)} & 1 \\ 0 & \frac{d(G,1)}{d(G,3)} \end{bmatrix}$ whose determinant is always positive.

Therefore by Routh-Hurwitz Criteria [11] we have the result.

Corollary 30. *For any natural number l and m, the graph $B_{l,m,n}$ is h-stable for $n = 1,2$.*

Corollary 31. *For any natural number l and m, the graph $T_{l,m,n}{}^*$ is h-stable for $n = 1,2$.*

Remark 1. *The converse of the Theorem 29 need not be true. To show this we have to find a h-stable graph with diameter greater than 3. Therefore we are focused only on the graphs whose diameter is greater than 3.*

Next two theorems gives a necessary and sufficient condition for graphs of diameter 4 and 5 are *h*-stable

Theorem 32. *Let G be a graph of diameter* 4. *Then the graph G is h-stable if and only if*
$$d(G,2)d(G,3) > d(G,1)d(G,4)$$
    Proof. Let G be a graph of diameter 4. To study the location of the nonzero roots of the Hosoya polynomial $H(G,x)$ of G, it is suffices to study the behavior of the polynomial $P(x) = x^3 + \frac{d(G,3)}{d(G,4)}x^2 + \frac{d(G,2)}{d(G,4)}x + \frac{d(G,1)}{d(G,4)}$. The Hurwitz matrices of $P(x)$ are:

$H_1 = \begin{bmatrix} \frac{d(G,3)}{d(G,4)} \end{bmatrix}$ $H_2 = \begin{bmatrix} \frac{d(G,3)}{d(G,4)} & 1 \\ \frac{d(G,1)}{d(G,4)} & \frac{d(G,2)}{d(G,4)} \end{bmatrix}$ $H_3 = \begin{bmatrix} \frac{d(G,3)}{d(G,4)} & 1 & 0 \\ \frac{d(G,1)}{d(G,4)} & \frac{d(G,2)}{d(G,4)} & \frac{d(G,3)}{d(G,4)} \\ 0 & 0 & \frac{d(G,1)}{d(G,4)} \end{bmatrix}$

$\det H_2 = \frac{d(G,2)d(G,3)-d(G,1)d(G,4)}{(d(G,4))^2}$ and $\det H_3 = d(G,1)\frac{d(G,2)d(G,3)-d(G,1)d(G,4)}{(d(G,4))^3}$. It is clear that H_2 and H_3 has positive determinant if and only if
$$d(G,2)d(G,3) - d(G,1)d(G,4) > 0.$$

Therefore, by Routh-Hurwitz Criteria all the roots of the polynomial $P(x)$ are negative or have negative real part if and only if
$$d(G,2)d(G,3) > d(G,1)d(G,4).$$

This completes the proof.

Corollary 33. *The star-like tree graph $S_{(n,n,.....n)m\ times}$ is h-stable for every natural number n, m.*

    Proof. For $m,n = 1$, the only Hosoya root is zero. For $m,n \geq 2$, the diameter of the graph $S_{(n,n,.....n)m\ times}$ is 4. Therefore by Theorem 32, it suffices to prove that $d(G,2)d(G,3) > d(G,1)d(G,4)$. By a simple calculation we have
$$d(G,2)d(G,3) - d(G,1)d(G,4) = \frac{m^2(n-1)(m-1)^2}{2}$$
$$> 0 \text{ since } m, n \geq 2.$$

Therefore for every natural number n and m, the nonzero Hosoya roots of the star-like tree graph $S_{(n,n,.....n)m\ times}$ are lies in the left half-plane, that is, $S_{(n,n,.....n)m\ times}$ is h-stable.

Theorem 34. *Let G be a graph of diameter* 5. *Then the graph G is h-stable if and only if*

$$d(G,2)[(d(G,3)d(G,4) - d(G,2)d(G,5)] > d(G,1)(d(G,4))^2$$
    Proof. Suppose the graph G is h-stable. Then by Routh-Hurwitz Criteria, the

Hurwitz matrices of $P(x) = x^4 + \frac{d(G,4)}{d(G,5)}x + \frac{d(G,3)}{d(G,5)}x^2 + \frac{d(G,2)}{d(G,5)}x + \frac{d(G,1)}{d(G,5)}$ have positive determinant. In particular,

$$\det H_3 = \begin{vmatrix} \dfrac{d(G,4)}{d(G,5)} & 1 & 0 \\ \dfrac{d(G,2)}{d(G,5)} & \dfrac{d(G,3)}{d(G,5)} & \dfrac{d(G,4)}{d(G,5)} \\ 0 & \dfrac{d(G,1)}{d(G,5)} & \dfrac{d(G,2)}{d(G,5)} \end{vmatrix} > 0$$

This implies that $d(G,2)[d(G,3)d(G,4) - d(G,2)d(G,5)] > d(G,1)(d(G,4))^2$. Conversely, suppose that the inequality $d(G,2)[d(G,3)d(G,4) - d(G,2)d(G,5)] > d(G,1)(d(G,4))^2$ is hold. Then

$$\frac{d(G,2)[d(G,3)d(G,4) - d(G,2)d(G,5)] - d(G,1)(d(G,4))^2}{(d(G,5))^3} > 0.$$

That is, $\det H_3 > 0$. Also, the Hurwitz matrix $H_4 = \begin{bmatrix} \frac{d(G,4)}{d(G,5)} & 1 & 0 & 0 \\ \frac{d(G,2)}{d(G,5)} & \frac{d(G,3)}{d(G,5)} & \frac{d(G,4)}{d(G,5)} & 1 \\ 0 & \frac{d(G,1)}{d(G,5)} & \frac{d(G,2)}{d(G,5)} & \frac{d(G,3)}{d(G,5)} \\ 0 & 0 & 0 & \frac{d(G,1)}{d(G,5)} \end{bmatrix}$

$$\det H_4 = \frac{d(G,1)}{d(G,5)} \det H_3$$

Therefore $\det H_4 > 0$. Finally, by the inequality, we have

$$[d(G,3)d(G,4) - d(G,2)d(G,)] > 0.$$

This implies that

$$\det H_2 = \begin{vmatrix} \frac{d(G,4)}{d(G,5)} & 1 \\ \frac{d(G,2)}{d(G,5)} & \frac{d(G,3)}{d(G,5)} \end{vmatrix} = \frac{d(G,3)d(G,4) - d(G,2)d(G,5)}{(d(G,5))^2} > 0.$$

Therefore, by Routh-Hurwitz Criteria, all the nonzero Hosoya roots of G are lies in the left half-plane, that is the graph G is h-stable.

Remark 2. *Consider the Hosoya polynomial* $H(B_{2,3,4,x}) = 2x^5 + 3x^4 + 4x^3 + 5x^2 + 7x$. $d(G, D-1)d(G, D-2) = 3 \times 4 > 5 \times 2 = d(G, D-3)d(G, D)$. *But* $H(B_{2,3,4,x})$ *has roots in the right half-plane. That is, the generalized barbell graph* $B_{2,3,4}$ *is h-unstable, that is, the converse of the above theorem need not be true.*

2.2.1 Some h-unstable graphs
Now we discuss some h-unstable graphs.

Theorem 35. *For $n \geq 6$, the path graph P_n is h-unstable.*
Proof. From [2], the Hosoya polynomial of path graph P_n is
$$H(P_n, x) = x^{n-1} + 2x^{n-2} + \cdots + (n-1)x.$$

It is suffices to prove that for $n \geq 6$, $P(x) = x^{n-2} + 2x^{n-3} + \cdots + (n-1)$ has roots in right half-plane. It is easy to see that, the determinant of Hurwitz matrix H_3 is negative if $n = 6$ and zero if $n \geq 7$. Therefore by Routh-Hurwitz Criteria, for $n \geq 6$, the path P_n has roots in right half-plane, that is the path graph P_n is h-unstable.
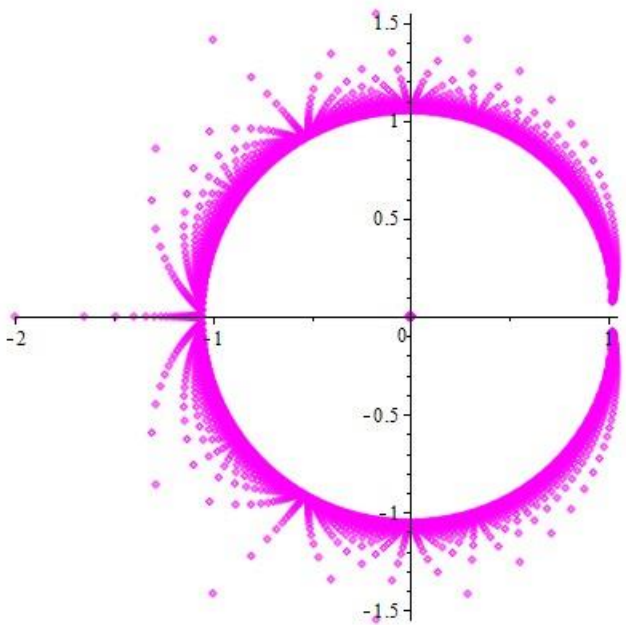
Figure 6: Hosoya roots of P_n for $1 \leq n \leq 100$.

Theorem 36. *The cycle graph C_n is h-unstable for $n \geq 9$.*
Proof. We have from [2], $H(C_{2n}, x) = 2n(x + x^2 + \cdots + x^{n-1}) + nx^n$ and $H(C_{2n+1}, x) = (2n+1)(x + x^2 + \cdots + x^n)$. It is suffices to prove that for $n \geq 5$, $P(x) = x^{n-1} + 2x^{n-2} + \cdots + 2x + 2$ and $Q(x) = x^{n-2} + x^{n-3} + \cdots + x + 1$ has Hosoya roots in the right half-plane. If $n = 5$, the determinant of the Hurwitz matrix H_3 of $P(x)$ is negative and the determinant of the Hurwitz matrix H_3 of $Q(x)$ is zero. If $n > 5$, the determinant of Hurwitz matrix H_3 of $P(x)$ is zero and the determinant of Hurwitz matrix H_2 of $Q(x)$ is zero. Therefore by Routh-Hurwitz Criteria, for $n \geq 9$, the cycle graph C_n has Hosoya roots in the right half-plane, that is, the cycle graph C_n is h-unstable.
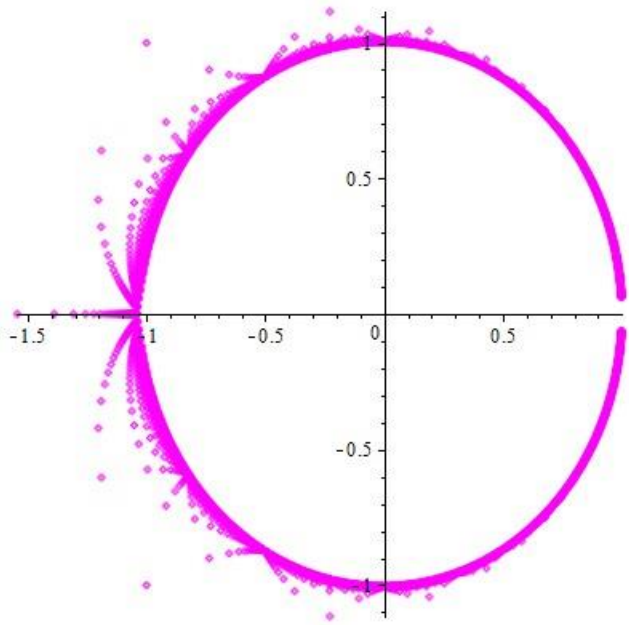
Figure 7: Hosoya roots of C_{2n} for $1 \leq n \leq 100$.

Theorem 37. *The graph $B_{m,m,n}$ is h-unstable for $n \geq 6$.*

Proof. Suppose $n \geq 6$, then the diameter of the graph $B_{m,m,n}$ is greater than or equal to 6. If $m = 1, 2$, $B_{1,1,n}$ and $B_{2,2,n}$ are the path graphs P_n and P_{n+2} respectively. Then by Theorem **??** we have the result. Suppose $m > 2$, by Theorem 35, it is enough to show that $d(G, n)d(G, n-1) - d(G, n-2)d(G, n+1) < 0$. By a simple calculation, we have

$$d(G, n)d(G, n-1) - d(G, n-2)d(n+1) = -2(m^3 - 4m^2 + 4m - 1)$$
$$= -2(m-1)(m(m-3) + 1)$$
$$< 0 \; for \; m > 2.$$

This completes the proof.

Theorem 38. *The graph $B_{3,m,n}$ is h-unstable for $m, n \geq 3$.*

Proof. By Theorem **??**, the Hosoya polynomial

$H(B_{3,m,n,x}) = H(K_{3,x}) + H(K_{m,x}) + H(P_{n,x}) + (m+1)\sum_{i=2}^{n} x^i + 2(m-1)x^{n+1}$. If m, n ≥ 3, then the diameter of the graph $B_{3,m,n}$ is greater than 3. By Theorem **??**, it is enough to show that $d(G, n)d(G, n-1)d(G, n-2)d(G, n+1) < 0$. If n ≥ 4, by a simple calculation, we have

$d(G, n)d(G, n-1)d(G, n-2)d(G, n+1) = (m+1)(m+2) - 2(m-1)(m+3)$
$$= -m(m+1) + 8$$
$$< 0 \; for \; m \geq 3$$

Theorem 39. *The graph $T^*_{m,m,n}$ is h-unstable for $m, n \geq 4$.*

Theorem 40. *The graph $T^*_{3,3,n}$ is h-unstable for $n \geq 4$.*

Proof. It is suffices to prove that for $n \geq 4$, $P(x) = x^n + x^{n-1} + \frac{5}{4}x^{n-2} + \frac{6}{4}x^{n-3} + \cdots \frac{n+1}{4}x^2 + \frac{n+4}{4}x + \frac{n+3}{4}$ has roots in right half-plane. It is easy to see that, the determinant of Hurwitz matrix H_2 is negative for all $n \geq 5$ and the determinant of Hurwitz matrix H_3 is negative if $n = 4$. Therefore by Routh-Hurwitz Criteria, for $n \geq 4$, the graph $T^*_{3,3,n}$ has Hosoya roots in the right half-plane, that is, the graph $T^*_{3,3,n}$ is h-unstable.

Corollary 41. *Let T^*_n as in [5]. ThenT^*_n is $h - unstable \; for \; n \geq 5$.*

Proof. It is suffices to prove that for $n \geq 5$, $P(x) = x^{n-1} + \frac{3}{2}x^{n-2} + \frac{4}{2}x^{n-3} + \cdots \frac{n-1}{2}x^2 + \frac{n+1}{2}x + \frac{n+1}{2}$ has roots in right half-plane. It is easy to see that, the determinant of Hurwitz matrix H_3 is negative for all $n \geq 5$ except 7 and the determinant of Hurwitz matrix H_5 is negative if $n = 7$. Therefore by RouthHurwitz Criteria, for $n \geq 5$, the graphT^*_n has roots in the right half-plane, that is $T^*_n \; h \; is - unstable$

Theorem 42. *The ladder graph L_n is h-unstable, for $n \geq 5$.*

Proof. It is suffices to prove that for $n \geq 5$, $P(x) = x^{n-1} + 3x^{n-2} + 5x^{n-3} + \cdots (2n-5)x^2 + (2n-3)x + \frac{3n-2}{2}$ has Hosoya roots in the right half-plane. Observe that the determinant of Hurwitz matrix H_3 is negative if $n = 5, 6$ and the determinant of Hurwitz matrices H_5 and H_6 are negative if $n = 7$ and $n = 8$
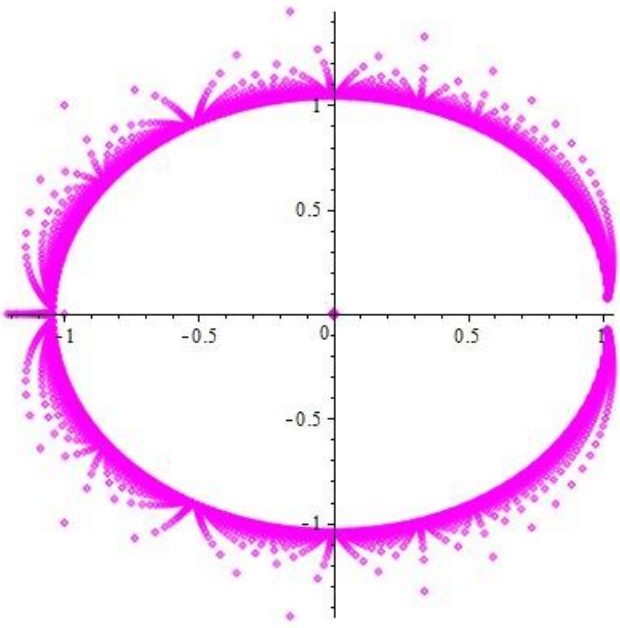
Figure 8: Hosoya roots of T_n^* for $1 \leq n \leq 100$.

Respectively also we can observe that the determinant of the Hurwitz matrix H_4 is zero if $n \geq 9$. Therefore by Routh-Hurwitz Criteria, for $n \geq 5$, the ladder graph L_n has Hosoya roots in the right half-plane, that is, the ladder graph L_n is h-unstable.

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Abstract:
This research examines the most recent advancements in artificial intelligence (AI) applications in many industries along with the challenges associated with their implementation. Notable advancements have been made in the domains of natural language processing healthcare, banking, autonomous automobiles and climate change mitigation. AI enhances personalized care and diagnosis in the medical field. Advanced models such as GPT-4 in natural language processing improve human-computer communication. Technology for self-driving cars is progressing toward more dependable and safe models and artificial intelligence (AI) in finance aids in fraud detection and algorithmic trading. AI also contributes to sustainability by controlling energy use and predicting changes in the environment. Despite these advancements, there are still problems with prejudice, transparency, data privacy, regulation, and technological limitations.

Ensuring data security, reducing biases, increasing model exploitability, establishing robust legal frameworks, and overcoming technological challenges are essential for achieving AI's full potential. The current study highlights the need for ongoing research, moral considerations, and collaborative efforts to address these challenges and maximize the benefits of AI applications.

Artificial intelligence (AI) is still changing a lot of industries by encouraging creativity, boosting output and offering solutions for difficult problems. Although AI technologies are advancing swiftly, this has led to significant breakthroughs in applications as well as new challenges. This article looks at the latest advancements in AI applications and pertinent problems that need to be solved.

Without a question, artificial intelligence is changing the game in many different fields by providing new opportunities and efficiencies. But in order for AI applications to be successfully integrated and implemented, major issues with data privacy, bias transparency laws, and technological constraints must be resolved. In order to fully utilize AI for the good of society, ethical concerns and cooperative efforts must be taken into account as the technology develops.

Introduction
Artificial Intelligence (AI) has quickly evolved from a specialized field within computer science to a ubiquitous technology impacting numerous businesses and societal sectors. AI has become increasingly popular in industries including healthcare finance, education and transportation during the last ten years thanks to developments in machine learning deep learning and neural networks. Advancements in customized medicine driverless cars, intelligent tutoring systems and predictive analytics have all resulted from the incorporation of AI into various domains.

The widespread application of AI presents a number of obstacles in addition to its amazing advancements and potential advantages. Critical aspects that need attention include data privacy concerns, openness and examinability challenges, bias and fairness ethics and the requirement for strong governance frameworks. In addition, there are operational and technological issues in integrating AI into current systems that must be resolved for a smooth and successful deployment.

The goal of this study is to show off the technology's revolutionary potential by analyzing current trends in AI applications across several industries. Another objective is to look at the main challenges that come with AI's rapid development and application. By giving a complete assessment of both the accomplishments and the obstacles, this study aims to provide insights into the future trajectory of AI and the actions necessary to safely and ethically harness its potential.

Artificial Intelligence (AI)
Artificial Intelligence (AI) is a game-changing technology that has quickly progressed from theoretical ideas into real-world uses that affect many facets of our everyday life. Artificial Intelligence has a wide-ranging and constantly growing impact ranging from improving healthcare outcomes to transforming transportation and customizing education. This article explores the many aspects of artificial intelligence (AI) looking at its possible uses, difficulties and present applications.
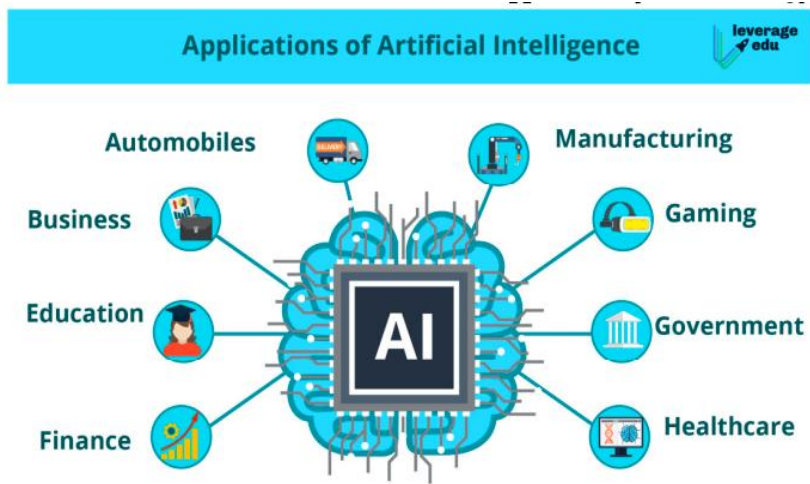
Figure 1

(i) Healthcare

AI is transforming the industry by enhancing the precision of diagnoses, customizing treatment regimens, and expediting administrative procedures. While predictive analytics aids in managing patient care and anticipating disease outbreaks, machine learning algorithms may analyze medical pictures to detect diseases like cancer at an earlier stage. Chatbots and virtual health assistants facilitate telemedicine and improve patient involvement, hence increasing accessibility to healthcare.

(ii) Finance

Artificial intelligence (AI) is used in the financial sector for risk assessment, fraud detection, and tailored financial services. Artificial intelligence (AI) systems examine transaction patterns to spot questionable activity and stop fraud. Artificial intelligence (AI)-driven solutions in investment management optimize profits by automating trading techniques and offering insights. AI chatbots and robo-advisors provide personalized financial advice to assist people in making wise financial decisions.

(iii)Education

AI is revolutionizing education by enabling flexible learning settings that can be tailored to each student's needs. Personalized material, pacing, and feedback are provided via intelligent tutoring systems and AI-powered educational platforms, which improve student engagement and learning outcomes. AI also helps with administrative duties like scheduling and grading, freeing up teachers to concentrate more on instruction.

(iv)Transportation

One of the most notable applications of AI in transportation is the development of autonomous cars. Self-driving cars can safely navigate roadways by processing data from cameras and sensors using AI algorithms. By anticipating demand and maximizing routes artificial intelligence (AI) also enhances supply chain management and logistics by lowering costs and increasing efficiency.

Challenges of AI

FIGURE 2

I.   Ethical and Social Implications

The ethical ramifications of using AI are among the biggest worries. Unfair and discriminating results can arise from problems like bias in AI algorithms which might be caused by training data that is not representative of the whole population. In order to preserve public confidence and accountability, artificial intelligence systems must be visible and comprehensible.

II.   Data Privacy and Security

Large volumes of data are necessary for AI systems to operate efficiently which raises questions around data security and privacy. Preserving user confidence and protecting personal data necessitates taking precautions against security breaches and making sure data protection laws are followed.

III.   Employment Displacement

Artificial intelligence (AI) systems' automation of jobs poses a danger to workers across a range of industries potentially resulting in job losses and economic instability. Proactive steps are needed to address the societal impact of AI on employment such as workforce transition support legislation and reskilling initiatives.

The Future of AI

AI has a bright future ahead of it with continuous research and development aimed at producing increasingly sophisticated and adaptable AI systems. The uses of AI technology will rise as it develops, spurring innovation and expansion in a variety of industries. But in order to fully utilize AI we must solve the technological, societal and ethical issues that surround its application.

Policymakers business executives and researchers may work together to create strong frameworks that guarantee the ethical and responsible application of AI. By doing this, we can leverage AI's potential to promote progress and build a better future for everybody.

Machine Learning (ML)

At the vanguard of the technological revolution, machine learning (ML) forms the basis of artificial intelligence (AI). The creation of algorithms that let computers to learn from and make judgments based on data is a transformational subset of artificial intelligence. Machine learning is a force behind innovation in many different industries, providing unmatched chances to improve productivity, precision, and customization. The foundations of machine learning, its uses, and the difficulties in putting it into practice are all covered in this article.

Understanding Machine Learning

The process of teaching algorithms to recognize patterns and make judgments with the least amount of human input is known as machine learning. Three essential elements are usually included in the process:

(i) **Data:** Used to train and validate algorithms, data is the cornerstone of each machine learning model. It can be organized or unstructured.

(ii) **Algorithms**: The mathematical structures known as algorithms are used to process data, spot trends, and come to conclusions or predictions. Neural networks decision trees and linear regression are examples of common algorithms.

(iii)**Models:** Following training, algorithms are improved to create models that are capable of classifying or predicting fresh unobserved data.

Machine learning can be categorized into several types:
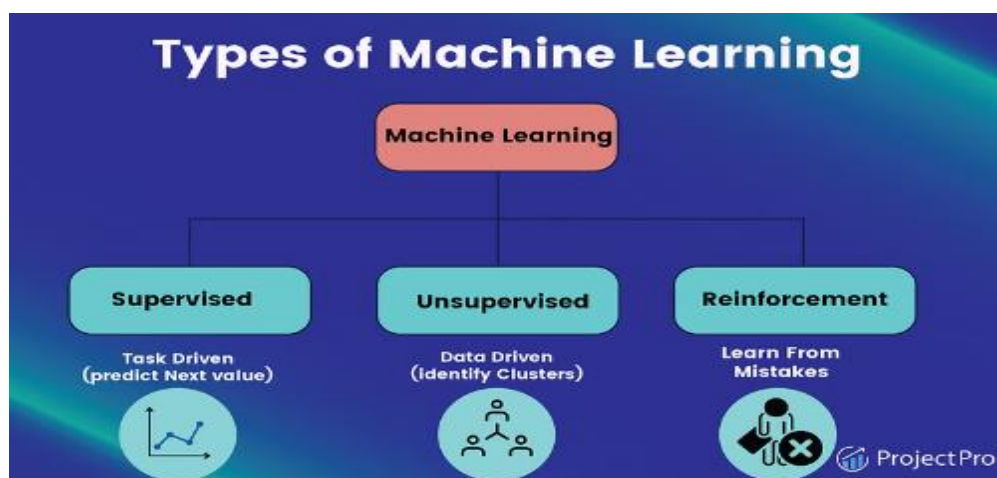
FIGURE 3

Supervised Learning: Labelled data, or input with associated output labels, is used to train algorithms. Regression and classification challenges make use of this kind of learning.

Unsupervised Learning: In order to find hidden patterns or structures, algorithms analyze unlabelled data. Applications like association and clustering are frequent.

Reinforcement Learning: Algorithms pick up new skills through interaction with their surroundings and feedback in the form of incentives or punishments. This method is frequently applied to gaming AI and robotics.

Applications of Machine Learning

Figure 4

Healthcare

Healthcare is undergoing a transformation thanks to machine learning, which enhances diagnosis, forecasts disease outbreaks, and customizes treatment regimens. Based on past data, algorithms can evaluate medical images to identify anomalies, forecast patient outcomes, and even recommend possible courses of action.

Finance

Machine learning algorithms are employed in the financial sector for risk assessment, algorithmic trading, and fraud detection. These algorithms can detect fraudulent activity, improve trading methods, and evaluate loan applicants' creditworthiness by examining transaction patterns and market data.

Retail

Inventory control, consumer sentiment analysis, and personalized suggestions are just a few ways that retail machine learning improves the shopping experience. Algorithms can recommend products, manage inventory, and enhance customer service by examining past purchases and client behavior.

Transportation

Among the most important uses of machine learning in transportation are autonomous cars route optimization and predictive maintenance. While logistics businesses employ predictive models to improve delivery routes and schedules, self-driving cars rely on machine learning (ML) algorithms to evaluate sensor data and navigate roadways safely.

Manufacturing

Machine learning is utilized in manufacturing for supply chain efficiency quality control and predictive maintenance. Algorithms can detect product flaws forecast equipment problems and optimize production procedures to save money and boost productivity.

Challenges of Machine Learning
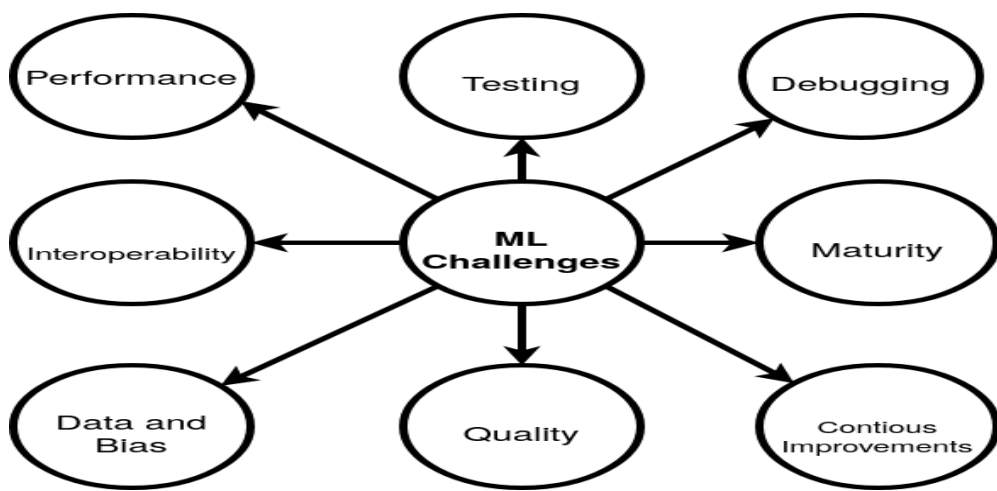
FIGURE 5

Data Quality and Availability

Reliable data is essential for training machine learning models that work. Nevertheless, gathering and selecting substantial, representative datasets can be difficult. An incomplete, skewed or noisy set of data might affect the fairness and accuracy of machine learning models.

Interpretability and Transparency

Deep learning algorithms in particular are often used as "black boxes" in machine learning models, providing minimal insight into the decision-making process. In crucial applications like healthcare and finance, where comprehension of the decision-making process is crucial this lack of interpretability may provide challenges.

Bias and Ethical Issues

Biases in training data can be reinforced and even amplified by machine learning models. It is imperative to guarantee equity and tackle ethical issues in machine learning, especially when these algorithms are employed in decision-making procedures that have an impact on people's lives.

Computing Capabilities

It takes a lot of processing power and resources to train complicated machine learning models. To manage the enormous volumes of data and the computations required, access to high-performance computing infrastructure and effective algorithms is crucial.

The Future of Machine Learning

Advances in areas like transfer learning, federated learning and quantum machine learning are poised to push the boundaries of what machine learning can achieve. Transfer learning for example allows models to leverage knowledge from one domain to improve performance in another reducing the need for large labelled datasets. Federated learning enables decentralized model training enhancing privacy and security by keeping data localized. Furthermore, quantum machine learning explores the integration of quantum computing with ML algorithms potentially revolutionizing the field with unprecedented computational power. Future directions for machine learning are bright and promising.

Conclusion

Artificial Intelligence is a potent instrument that is revolutionizing several sectors and changing our lifestyles and occupations. Even if artificial intelligence has many advantages, it is crucial to carefully and properly handle the problems that come with it. We can fully utilize AI and take advantage of its potential to create a more inventive, effective and just world by comprehending and resolving these issues.

Machine learning is a potent instrument propelling innovation and change in a variety of sectors. Its capacity to learn from data and generate precise predictions creates new avenues for improving effectiveness, precision, and customization. For ML technologies to be used responsibly and effectively, it is imperative that issues related to data quality, interpretability, ethical considerations, and computing resources be addressed. Machine learning is expected to become more and more important in influencing how society and technology develop in the future as research and development continue.

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Type: General Review

ABSTRACT

Body needs proper fuel for top physical performance, high quality nutrients are thus necessary during training sessions, but mal nutrition during training as well as in routine adversely affect the physical performance. Changing life style of adolescent not only affects the nutritional status but also affect their physical performance. Inclination towards Junk food became a major health issues among adolescents. Junk food has popular among children and adolescents. It has little or no nutritional value. Junk food became popular among children and adolescent due to its attractive appearance, taste, convenient, low cost and easy to consume. Several studies carried out on adolescent's physical performance support the statement. Keeping this view in mind the present study was designed to assess the physical performance of adolescent boys and girls who are habitual of junk food. The study was carried out on 300 school going children between the age group of 13-17 years of Durg city. The result reveals that boys who were habitual and less habitual of junk food had significantly lower scores in jumping (M=109.66), (M=116.06) as compared to non-habitual adolescent boys (M=133.40). We did not find any difference in girl's performance although boy's performance was better than girls.

Key Words: Junk Food, Performance and Children.

Introduction

Junk food or even a single fast-food meal make a difference in your whole health Consumption a poor-quality food high in junk food is related to a higher risk of obesity, depression, digestive is-sues, heart disease and stroke, type 2 diabetes, cancer, and initial death. And as you might believe, occurrence matters when it comes to the influence of junk food on your health. Short-term affects of junk food its human nature to think about profits and risks over the short term rather than seeing the influence our choices have over the long term. So intake of junk food affects your body over the short term. Junk foods are high in calories, low nutrition fats. Surplus consumption of junk foods would guide increase to a large mixture of health disorders. To examine patterns of around junk food consumption of junk food of children, their ingredients, nutritive significance and their impact on children health Data were drawn as of consumption and action in the child, a population-based. Children from 5 middle and high schools and household in India Surveys Participants: Parents and their children aged 9 to 13 years were exposed to consumption and action in the child, a population-based. Setting: children from 5 middle and high schools and household in India. A total of 200 children and Parents 200 in results age of group 9–13. Variables Measured region, Type of foods adds, Household Income, Parents education, Media, Eat at the restaurant, Favorite, foods, Household situation, Obesity, Diabetics and cardiovascular, Analysis, logistic regression models were used towards guesstimate links between health behaviors and junk food consumption, adjusting in favors of demographics. The data analyzed the data collected through the survey and plotted tables and interpretation after using the tools. In this researcher is going to give getting conclusion and recommendations depending on the results came out after in-progress research. Children should be reminded of recommendations to consume these junk foods only after protracted activity. There is also a need for future interventions designed to decrease consumption, to address the gathering of unhealthy behaviors. A PAN India survey organized by the Centre for Science and Environment (CSE) among 13,274 children between the ages 9–14 years reported that 93% of the children ate packed food and 68% consumed packaged sweetened beverages more than once a week, and 53% ate these products at least once in a day. Almost 25% of the School going children take ultra-processed food with high levels of sugar, salt, fat, such as pizza and burgers, from fast food outlets more than once a week. Children and adolescents who consume more junk food or addicted to such consumption might be even more vulnerable during the third wave, which will significantly affect the younger category.

OBJECTIVES

1. To research the trend of fast food intake
2. To examine the health Concern
3. To explore the varieties of Fast food
4. To research how children are becoming more and more tempted by fast food
5. To investigate the fundamental components of fast food

Reason for Eating Junk Foods: -

The Choice of easiest access

Busy schedules often minimise the amount of time individuals should spend cooking wholesome meals, enabling them to make quicker, easier options. While food products like hamburgers are sometimes delivered shortly after being ordered, entire foods like vegetables and meat need time and room to cook properly.

Reducing tension

Fast culture causes tension and worry. Stress causes the body to burn more energy, prompting people to crave fatty, sugary meals. Hysteria makes people seek solace in eating. Junk food's beneficial effects on the reward area of the brain make it a soothing go-to when stressed.

Not getting enough nap

Lack of sleep affects bad eating, too. When sleep is limited, the brain's reward centre becomes more active, and executive functions lag. This reduces possession, leading people to seek out fatty, sugary meals that stimulate the reward centre

Acquiring an addiction

People may make a decision based only on their bodily need on food. According to research, consuming meals with a lot of sugar or fat all at once alters the brain's chemical makeup in a

Highly consumed junk foods

Habitual physically inactive lifestyle, advertisements, media, and consumption of junk food have contributed significantly towards causing obesity in children and adolescents. Various list of Junk foods and their associated components showing the impact on health is mentioned in Table 1.

Table 1. List of Junk foods and its associated components showing impact on health.

Type of Junk Food	Components	Impact on Health
Fish sauce, Soy sauce (Olney et al., 1972; Lemkey-Johnston and Reynolds, 1974; Holick, 2003)	Monosodium Glutamate	Overweight, Brain lesions, obesity, diabetes, neurotoxic effects, endocrine disorders
Sweetened Soda, soft drinks (DeChristopher et al., 2020; Chapman et al., 2020)	High Fructose Corn Syrup	Weight gain and Diabetes, Hypertension, atherosclerosis, coronary heart disease, vascular resistance in the kidneys
Margarine, French fries, Dough nut, Pastry, Ice-cream (Islam et al., 2019; Zhu et al., 2019	Trans Fat	Increase in Inflammatory markers (Heart Risk), T2DM, cancer and diabetes, cardiovascular disease
Buns, Bagels, flour bleaching agent and a dough conditioner. (Kim et al., 2004; Ye et al., 2011)	Azodicarbonamide	Asthma, carcinogenicity
Soda, Flavoured water, processed cheese, chicken nuggets (Orozco-Guillien et al., 2021)	Phosphate additives	Kidney disease, Bone problem
Mayonnaise, Roasted pork (Ham et al., 2019; Yang et al., 2017)	Propyl gallate	Reproductive toxicant, testicular toxicity, abnormal implantation and placental development.
Burger packaging (Li et al., 2021)	Phthalates	Induce Reproductive toxicity towards the development of gonads and reproductive capability of environmental organisms.
Canned foods, polycarbonate tableware, food storage containers, water bottles, and baby bottles. (Zhang et al., 2021; Wang et al., 2021; Bordbar et al., 2021)	Bisphenol	Reproductive toxicity, cardiotoxicity and endocrine disrupting toxicity, Delayed bone development, Hepatotoxicity

Junk food and compromised immune system

    i) Effect of Junk foods on the signaling pathway

The intake of appetizing food is primarily under the control of the limbic system and stimulates endogenous opioids release, which binds to the opioid receptors present in the ventral tegmental area (VTA). VTA activates dopaminergic neurons in the brain, and in the nucleus accumbent, the site of dopamine release to potentiate dopamine signaling pathway (Bergevin et al., 2002; Fields and Margolis, 2015; Berridge, 1996). The stimulation of the dopamine signaling pathway by opioid interactions is thought to be involved in the mediation of the short-term pleasurable sensation linked with the consumption of appetizing food (Bodnar et al., 2005; Bodnar, 2015). It is observed that a reduction in MuR expression in the offspring of dams maintained on a junk food diet during pregnancy and lactation is present in the VTA at the weaning stage, i.e., 3 weeks after birth (Gugusheff et al., 2013). Nonetheless, MuR expression in the NAcis found in elevated levels during the first postnatal week and declining to adult levels over the next two weeks (Tong et al., 2000).

    ii) Effect of Junk foods on Immunity

Micronutrients like trace elements, antioxidants, and vitamins play a significant role in the regenerative process, coping with existing oxidative stress in the body tissues and providing Immunity against pathogens (Chapple et al., 2007; Enwonwu et al., 2002). Obesity in the early years of life alters the immune system by inducing changes in cytokines concentrations and proteins and the number and function of the immune cells, ultimately leading to a pro-inflammatory condition, leading to the onset or exacerbation of numerous diseases like asthma, atopic dermatitis, allergy and sleep apnea (Kelishadi et al., 2017). Various per- and polyfluorinated substances (PFAS)might affect growth, infantile behavior, learning, and older children. It also lowers the chance of pregnancy, interferes with the defense of natural hormones, increases the cholesterol levels, reduces vaccine-induced immune protection in children, and increase the risk of cancer (Velez et al., 2015; Grandjean et al., 2017; Bach et al., 2015). Various reports from the conducted human studies conclude that some PFAS can take as long as 8–9 years to get cleared from the body (Bartell et al., 2010). It can also cross the placental barrier and

be secreted through breastmilk (Mondal et al., 2013; Kingsley et al., 2018). It was observed that the immune response was impaired in children, especially cellular to influenza virus, and also inadequate vaccine responses were seen when they were obese (Green and Beck, 2017). Thus, the importance of nutrition must be considered when it comes to Immunity. Similarly, there is enhanced knowledge about food, nutritional habits, and other lifestyle aspects, which are essential in aiding the proper functioning of the immune system (Gombart et al., 2020).

In concern with obesity, there is a negative relationship between BMI and the intake of trace elements identified in obese people (Farhat et al., 2019). Therefore, obesity has a strong correlation with an increased risk of infectious diseases accompanied by severe complications, elevated critical illnesses, and prolonged hospitalization (Ritter et al., 2020). Systemic inflammatory reactions occur in covid 19 due to cytokine storms which leads to the imbalance of the immune system observed in obesity, and it contributes to a worse clinical outcome. Adipocytokines, mainly leptin, play an integral role in Immunity, as they influence the number and the function of immune cells through direct effects on cell metabolism (Kim and Nam, 2020).

Conclusion

Overweight and obesity are predominantly associated with numerous cardiac complications and are mostly mediated through the risk of metabolic syndrome. Obesity, like other malnutritional states, is known to impair immune function by altering leucocyte count as well as cell-mediated responses and causes organ damage. Not only is it causing physiological repressions, but it has significant psychological manifestations-that can damage a child's intellect and personality. Covibesity associated individuals are more prone to alteration of the immune system, and thus those people having junk food habits should be more cautious in this pandemic by maintaining health hygiene and getting vaccinated. It is to be noted that junk foods and packaging materials have drastic outcomes on health by impairing the immune system.

Thus, a combination of junk food, physical inactivity, and constant psychological stressors on children and adolescents during the pandemic makes them more vulnerable to increased weight along with decreased Immunity and thus an increased chance of infectivity during the third wave of COVID-19. There is an urgent need to spread awareness among children and young adults about these adverse effects of junk food, and they are not a good substitute for good healthy nourishment. There is no better time than now to build a supportive environment nurturing children and young adults in society and promising good health. As a result of economic factors, fast food has genuinely contributed to the partitioning of the Third World. It is an essential component of existence in both industrialised societies and civilizations that are still developing, and it is making a comeback with the tremendous growth in obesity and the difficulties that come along with it. Consuming junk food in moderation, on an irregular basis, and in as few large amounts as possible are the keys to successful feeding. In a competition between junk food and nutritious meals, the latter is far easier to win. On the other hand, one must exercise caution since the attraction can be too great, which would lead to confirmation. It is important to keep in mind that an addiction to junk food is really beneficial to the economy. We are forced to make a decision between our health and our nutritional needs. Choose the choice that is good for you instead of the unhealthy one! Stay away from junk food if you want to keep your health!

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Abstract
In 2022, Indian industries navigated a complex landscape shaped by both opportunities and challenges. The year marked a phase of recovery from the, with sectors gradually resuming operations and adapting to new economic realities. Economic Growth India saw a resurgence in economic activity, driven by sectors such as technology, pharmaceuticals, and renewable energy. GDP growth showed signs of rebounding, supported by government stimulus measures and increased consumer demand. Digital Transformation The year witnessed accelerated digital transformation across industries. Companies embraced technologies like AI, block chain, and IoT to enhance productivity, customer engagement, and operational efficiency. E-commerce continued to thrive, reshaping consumer behavior and business models. Policy Initiatives. The Indian government continued to focus on initiatives such as Make in India and reforms to bolster manufacturing and attract foreign investment. Policies aimed at improving ease of doing business and infrastructure development was rolled out to stimulate industrial growth. Challenges: Industries faced challenges including inflationary pressures, supply chain disruptions, and regulatory changes. Sectors like automotive, real estate, and traditional manufacturing sectors struggled to recover fully amidst global supply chain constraints and fluctuating raw material prices. Sustainability and Innovation: There was a growing emphasis on sustainability, with industries investing in green technologies and practices. Renewable energy adoption increased, driven by government incentives and global environmental commitments. Sector-specific Dynamics: While sectors like IT and pharmacy thrived, others such as hospitality, aviation, and small-scale manufacturing continued to face recovery challenges. Rural sectors saw mixed fortunes COVID-19 pandemic, with agriculture grappling with productivity issues and infrastructure constraints. Looking ahead, the trajectory of Indian industries in 2022 reflected a blend of resilience, adaptation to digital imperatives, and ongoing efforts to navigate economic uncertainties and global dynamics. Continued policy support, technological innovation, and sustainable practices are expected to shape the future landscape of Indian industries.

Introduction:
In 2022, India's industrial landscape stands at a pivotal juncture, shaped by a confluence of global economic shifts, domestic policy reforms, and ongoing recovery efforts from the unprecedented disruptions caused by the COVID-19 pandemic. Here multifaceted dynamics defining the current state of Indian industries, examining key sectors, emerging trends, challenges, and opportunities that characterize this transformative period. Amidst fluctuating global markets and evolving consumer behaviors, Indian industries have displayed resilience and adaptability, leveraging digital advancements and strategic initiatives to navigate challenges and capitalize on emerging growth prospects. From the resurgence of manufacturing driven by initiatives like "Make in India" to the accelerated adoption of digital technologies across sectors, the landscape reflects both continuity and transformation. However, the path forward is not without obstacles. Industries continue to grapple with supply chain disruptions, inflationary pressures, and regulatory reforms that necessitate agile responses and innovative strategies. Moreover, sectors such as agriculture, hospitality, and traditional manufacturing face distinct challenges in their journey towards recovery and sustained growth. As India charts its course in 2022 and beyond, the convergence of policy frameworks, technological innovations, and global economic trends will play a decisive role in shaping the trajectory of its industrial sectors. This article aims to provide a comprehensive overview of the current status, highlighting the opportunities for growth, the barriers to overcome, and the strategic imperatives for stakeholders across diverse industries.

Double-digit credit growth in Industry driven by MSMEs
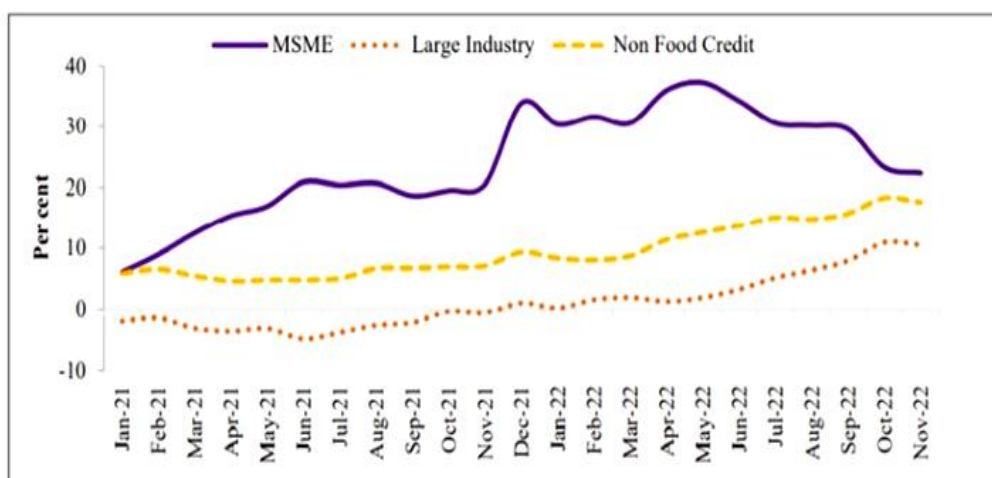
From 2021 to 2022, the double-digit credit growth in the industry, driven by MEMS (Micro-Electro-Mechanical Systems), highlights a significant expansion in the adoption and application of MEMS technology across various sectors. This growth can be attributed to several key factors:

1. **Increased Demand Across Industries:** MEMS technology has seen rising demand across sectors such as automotive, healthcare, consumer electronics, and industrial automation. Applications range from sensors and actuators to microfluidic devices and biomedical implants, driving overall industry growth.

2. **Technological Advancements:** Continuous advancements in MEMS fabrication techniques, including improved precision, miniaturization, and cost-effectiveness, have expanded the potential applications of MEMS devices. This has led to broader adoption and increased investment in MEMS-related projects.

3. **Emerging Applications:** New and emerging applications of MEMS in areas like Internet of Things (IoT), wearable devices, and autonomous systems have created new market opportunities, further fueling industry growth.

4. **Government and Private Sector Investments:** Supportive policies, government funding, and private sector investments in research and development of MEMS technology have contributed to its rapid growth and deployment in various industrial applications.

5. **Market Dynamics:** Competitive dynamics within the MEMS industry, including strategic partnerships, mergers, and acquisitions, have also played a role in driving credit growth as companies seek to expand their market presence and technological capabilities.

Overall, the double-digit credit growth in the industry driven by MEMS from 2021 to 2022 reflects both the expanding market demand and technological advancements that are shaping the future of MEMS-based solutions across global industries.

India Industrial Sector – Growth Prospects -2022
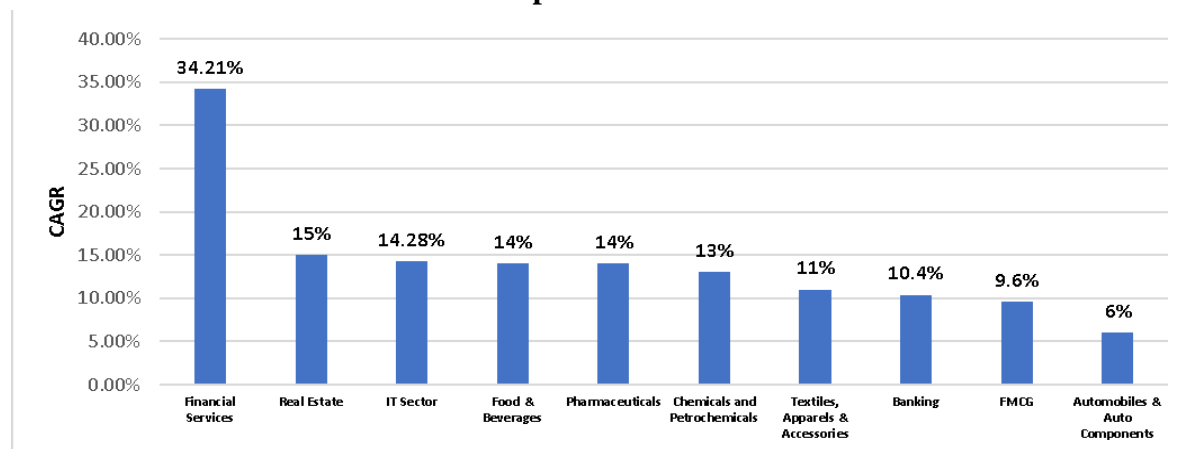
As of 2022, India's industrial sector shows promising growth prospects driven by several key factors:

1. **Manufacturing Resurgence:** India's manufacturing sector has been on a path of recovery and expansion post-pandemic. The government's initiatives such as "Make in India" and various production-linked incentive (PLI) schemes have incentivized domestic manufacturing across sectors like electronics, automotive, pharmaceuticals, and textiles.

2. **Infrastructure Development:** Significant investments in infrastructure projects, including roads, railways, airports, and smart cities, are boosting demand for industrial products and services. This infrastructure push aims to enhance connectivity, logistics efficiency, and urban development.

3. **Technological Advancements:** Adoption of advanced technologies such as digitalization, automation, artificial intelligence, and Internet of Things (IoT) is transforming India's industrial landscape. This digital transformation is improving efficiency, reducing costs, and enabling innovation across manufacturing and related industries.

4. **Global Trade Opportunities:** India continues to benefit from global supply chain realignments and trade diversification efforts. Trade agreements and partnerships, particularly with countries in Southeast Asia, Africa, and the Middle East, are opening new export avenues for Indian industrial products.

5. **Renewable Energy Transition:** The shift towards renewable energy sources, supported by government policies and incentives, is driving growth in sectors like renewable energy equipment manufacturing, solar power generation, and electric vehicles (EVs).

6. **Policy Support:** Pro-business reforms and policy initiatives aimed at ease of doing business, labor reforms, and sector-specific incentives are bolstering investor confidence and attracting both domestic and foreign investments into the industrial sector.

7. **Consumer Market Expansion:** India's large and growing consumer market, coupled with increasing disposable incomes and urbanization, is driving demand for consumer goods, electronics, automobiles, and other industrial products.

Challenges such as regulatory complexities, infrastructure bottlenecks, and global economic uncertainties remain, but India's industrial sector in 2022 is positioned for growth, driven by proactive government policies, technological advancements, and evolving consumer dynamics. Continued focus on sustainability, innovation, and competitiveness will be crucial in realizing the sector's full potential.

Development and Prospects of Industries:
As of last update in January 2022, here's a general overview of the current status and trends in Indian industries:

Information Technology (IT): India remains a global leader in IT services, software development, and outsourcing. Companies like TCS, Infosys, and Wipro continue to dominate the sector, with a growing emphasis on digital transformation services, cloud computing, and cyber security.

Automobiles: The Indian automotive industry is one of the largest in the world, with major players like Maruti Suzuki, Hyundai, and Tata Motors. There is a growing focus on electric vehicles (EVs), driven by government incentives and environmental concerns.

Pharmaceuticals: India is a major player in the global pharmaceutical industry, known for generic drugs and vaccines production. Companies like Sun Pharma, Dr. Reddy's, and Cipla have significant market presence both domestically and internationally.

Telecommunications: With a massive subscriber base, India's telecom sector has seen rapid growth, fueled by affordable data plans and expanding internet penetration. Reliance Jio, Bharti Airtel, and Vodafone Idea are key players in this competitive market.

Banking and Financial Services: The banking sector in India is dominated by public sector banks like State Bank of India (SBI) and private banks like HDFC Bank and ICICI Bank. Fintech is also gaining traction, with startups offering digital payment solutions and lending services.

Real Estate: The real estate sector has seen ups and downs, influenced by factors like regulatory changes, demand fluctuations, and the impact of COVID-19. There's a gradual shift towards affordable housing and sustainable development.

Retail: India's retail sector is diverse, ranging from traditional markets to modern retail chains and e-commerce platforms. Companies like Reliance Retail, Flip kart, and Amazon India are major players shaping the sector's growth.

Renewable Energy: India has committed to increasing its renewable energy capacity, aiming to achieve its targets under the Paris Agreement. Solar and wind energy sectors have shown significant growth, supported by government policies and investments.

Manufacturing: The government's 'Make in India' initiative aims to boost domestic manufacturing across various sectors, including electronics, defense, and textiles. Efforts are underway to enhance infrastructure and attract foreign investments.

Healthcare: The healthcare industry in India is undergoing transformation, with advancements in medical technology, telemedicine, and healthcare infrastructure. Hospitals, pharmaceuticals, and diagnostic services are key areas of growth.

Overall, while some sectors have faced challenges due to global economic conditions and the COVID-19 pandemic, others have shown resilience and growth potential. Government initiatives, technological advancements, and demographic trends continue to shape the landscape of Indian industries in 2022 and beyond.

Objective:
In 2022, the objective status of Indian industries reflects a mixed landscape influenced by various factors including economic policies, global trends, technological advancements, and the ongoing impact of the COVID-19 pandemic. Here's a sector-wise overview:

Information Technology (IT):
    Objective: To maintain leadership in IT services globally, expand digital transformation offerings, and leverage emerging technologies like AI, cloud computing, and cyber security.
    Current Status: Strong growth continues with increased demand for digital services, though challenges such as talent shortages and data privacy concerns persist.

Automobiles:
    Objective: Transition towards electric vehicles (EVs), sustainability, and modernization of manufacturing processes.
    Current Status: Growing focus on EVs, with major players investing in R&D and infrastructure; however, supply chain disruptions and semiconductor shortages pose challenges.

Pharmaceuticals:
    Objective: Strengthen position as a global hub for generic drugs, enhance R&D capabilities, and expand vaccine manufacturing.
    Current Status: Significant role in global COVID-19 vaccine supply, ongoing growth in generic drugs; challenges include regulatory issues and global supply chain disruptions.

Telecommunications:
    Objective: Expand network coverage, improve internet speeds, and enhance digital connectivity.
    Current Status: Competitive market with rapid expansion of 4G and 5G networks; ongoing spectrum auctions and regulatory challenges impact growth strategies.

Banking and Financial Services:
    Objective: Enhance digital banking services, expand financial inclusion, and manage NPA (Non-Performing Assets) levels.
    Current Status: Stable growth with digital banking adoption, fetch innovation; concerns over asset quality and regulatory compliance remain.

Real Estate:
    Objective: Revitalize sector through affordable housing initiatives, sustainable development, and regulatory reforms.
    Current Status: Recovery post-pandemic with increased demand for residential properties; commercial real estate faces challenges due to remote work trends.

Retail:

Objective: Modernize retail infrastructure, enhance e-commerce capabilities, and improve supply chain efficiency.

Current Status: Shift towards omni channel retailing, growth in e-commerce platforms; regulatory changes and competitive pressures impact market dynamics.

Demand Stimulus to Industrial Growth on 2022.

In 2022, India faced several challenges that impacted industrial growth, prompting discussions on demand stimulus measures to support economic recovery and industrial revival. Here are some of the demand stimulus strategies that were considered or implemented during that period:

Infrastructure Investments: Increased government spending on infrastructure projects such as roads, railways, airports, and urban infrastructure. These investments not only create immediate demand for construction materials but also support long-term industrial growth by improving logistics and connectivity.

Tax Incentives: Reduction or deferment of taxes for industries, especially sectors facing significant downturns or impacted by external factors such as global economic conditions or supply chain disruptions.

Credit Facilities and Subsidies: Enhanced credit availability at lower interest rates through schemes like the Emergency Credit Line Guarantee Scheme (ECLGS) to provide liquidity support to industries, particularly small and medium-sized enterprises (SMEs).

Promotion of Export-oriented Industries: Incentives and support for industries focusing on exports, such as export credit facilities, export promotion schemes, and easing of export procedures to boost foreign exchange earnings and mitigate the impact of domestic demand fluctuations.

Consumer Spending Boost: Stimulus measures aimed at increasing consumer spending, such as direct cash transfers, subsidies on essential goods, or incentives for consumer durables, which can indirectly benefit industries producing these goods.

Sector-specific Support: Tailored support packages for industries facing acute challenges, such as hospitality, tourism, aviation, and automotive sectors, which were heavily impacted by the COVID-19 pandemic and subsequent waves.

Technology and Innovation Incentives: Support for research and development initiatives, innovation hubs, and technology adoption across industries to enhance productivity and competitiveness in the global market.

Regulatory Reforms: Simplification of regulatory procedures, easing of compliance burdens, and reforms aimed at improving the ease of doing business to attract investments and stimulate industrial growth.

These demand stimulus measures were aimed at revitalizing industrial activities, creating employment opportunities, and fostering sustainable economic growth amidst challenging economic conditions in 2022

Industry Groups and their Challenges in 2022

In 2022, various industry groups in India faced specific challenges that impacted their operations and growth prospects. Here's an overview of some key industry groups and their respective challenges during that period:

Information Technology (IT) and Software Services:

Talent Acquisition and Retention: The IT sector continued to face challenges in attracting and retaining skilled talent amidst global competition and increasing demand for specialized skills like AI, cyber security, and data analytics.

Data Privacy and Regulatory Compliance: Compliance with international data privacy laws (such as GDPR) and evolving regulatory frameworks posed challenges, necessitating investments in compliance measures and infrastructure.

Automobiles:

Supply Chain Disruptions: Persistent disruptions in global supply chains, particularly semiconductor shortages, impacted production schedules and led to inventory management challenges for automakers.

Transition to Electric Vehicles (EVs): Meeting regulatory requirements and consumer demand for EVs while managing costs associated with technology upgrades and infrastructure development posed significant challenges.

Pharmaceuticals:

Regulatory Compliance: Stringent regulatory requirements in both domestic and international markets required continuous adaptation and investment in compliance measures and quality standards.

Intellectual Property Protection: Challenges related to intellectual property rights protection and patent litigation, particularly in the global market, influenced strategies and investments in R&D.

Telecommunications:

Competitive Pricing and Profitability: Intense competition in the telecom sector led to pricing pressures, impacting profitability margins and necessitating operational efficiencies and cost-cutting measures

Investment in 5G Technology: High capital expenditures required for the rollout of 5G networks and infrastructure upgrades posed financial challenges for telecom operators.

Energy (Oil and Gas, Renewable Energy):

Volatility in Oil Prices: Fluctuations in global oil prices affected revenue projections and profitability margins for oil and gas companies, influencing investment decisions and exploration activities.

Policy and Regulatory Uncertainty: Policy changes and regulatory uncertainties, particularly in the renewable energy sector, affected investment flows and project timelines.

Conclusion

The status of Indian industries in 2022 reflects a dynamic landscape characterized by both opportunities and challenges across various sectors. Diversity and Resilience India's industrial base is diverse, encompassing sectors such as IT and software services, automobiles, pharmaceuticals, telecommunications, energy, financial services, retail, and real estate. This diversity contributes to the resilience of the economy against external shocks and allows for adaptation to changing global trends. Technological Advancements Industries have been increasingly adopting advanced technologies like AI, IoT, and digital platforms to enhance efficiency, competitiveness, and customer engagement. This trend is particularly noticeable in sectors such as IT, telecommunications, and financial services. Global Integration Many Indian industries, especially IT services, pharmaceuticals, and automotive, maintain a strong global presence, exporting goods and services to international markets. This global integration provides opportunities for growth and diversification but also exposes industries to global economic fluctuations and regulatory challenges. Challenges and Constraints Despite growth prospects, industries face challenges such as regulatory complexities, infrastructure gaps, supply chain disruptions, talent shortages, and environmental sustainability concerns. These challenges require strategic interventions and policy support to sustain growth momentum. Government Initiatives The Indian government has introduced various initiatives to support industrial growth, including infrastructure investments, tax incentives, regulatory reforms, and sector-specific policies. These efforts aim to stimulate demand, attract investments, foster innovation, and enhance competitiveness across industries. Path Forward Looking ahead, leveraging technological innovation, enhancing infrastructure, fostering sustainable practices, and addressing skill gaps will be crucial for Indian industries to maintain momentum and achieve long-term growth. Collaboration between the government, industry stakeholders, and academia will be essential in navigating challenges and seizing opportunities in the evolving global economic landscape. In essence, while Indian industries in 2022 faced multifaceted challenges, they also demonstrated resilience and adaptability, positioning themselves for sustainable growth with strategic planning and concerted

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Abstract:
The present work is aimed at addressing the water quality monitoring for selected ponds in and around Biharsharif and the determination of recreational value especially for fishing in different ponds. This has been determined by collecting surface water samples for a comprehensive Physico- chemical and Bacteriological analysis. In the present study, fifteen samples are collected from the ponds (Maa Sheetla talab, Mora talab, Indra talab) in and around Biharsharif during three different seasons (Summer season, Monsoon, and Winter season) of a year. During the research work several water quality parameters have been considered such as, Dissolved Oxygen., Alkalinity, Acidity, Total Hardness, Calcium Hardness, Magnesium Hardness, Chloride, Temperature, pH, Conductivity, Turbidity, Total Solid, Total Dissolved solid, Total Suspended solid, Iron, Nitrate, Phosphate, ammonia etc. for water quality monitoring of each pond. The objective of this research work is to study the condition of pond water at different selected sites of Biharsharif with reference to recreational value. This project entitled "Assessment of fitness of the water for recreational value of different ponds of Biharsharif", which was undertaken with the main objective to study the physico- chemical and Bacteriological analysis and to determine water quality of selected ponds of Biharsharif. The selection of sampling sites was done in the town of Biharsharif and all the sampling sites are at a distance of 15 km in Biharsharif.

Introduction
Water is one of the foremost critical variables for each living life form on this blue planet. Water is basically utilized for washing, drinking, fisheries and other house hold purposes. Lakes and ponds are one of the imperative water assets utilized in this region. On the other hand, it gives a living space toof or spineless creatures, angles and many feathered creatures. Water which is a neutral oxide of hydrogen with formula H_2O is one of the most important oxides known. It is abundant in the earth's crust. It's presence is otherwise said to influence human settlement. Monitoring water quality in freshwater aquaculture ponds, in and around Biharsharif, Bihar, typically involves assessing several key parameters to ensure optimal conditions for fish growth and health. Here are some important aspects and parameters that are usually monitored:

1. **Temperature**: Fish have specific temperature requirements for optimal growth and metabolism. Temperature affects oxygen levels and other water chemistry parameters.
2. **Dissolved Oxygen (DO)**: Essential for fish respiration. Low DO levels can stress or suffocate fish.
3. **pH**: Influences nutrient availability and toxicity of ammonia. Fish generally prefer a pH range between 6.5 to 8.5.
4. **Ammonia**: Ammonia is released from fish waste and uneaten feed. It can be toxic at high concentrations (above 0.02 mg/L for unionized ammonia).
5. **Nitrite and Nitrate**: Nitrite is toxic to fish at elevated levels, while nitrate can affect algae growth and contribute to eutrophication.
6. **Turbidity**: Measures water clarity, which can affect light penetration and primary productivity.
7. **Alkalinity and Hardness**: These parameters influence pH stability and overall water quality.
8. **Total Suspended Solids (TSS)**: High TSS can reduce water clarity and affect fish health.
9. **Phytoplankton and Zooplankton**: Presence and abundance of these organisms can indicate water fertility and provide food for fish.
10. **Microbiological Parameters**: Monitoring for pathogens and indicator organisms (e.g., E. coli) is crucial for preventing disease outbreaks.

Regular monitoring of these parameters helps aqua culturists maintain optimal conditions for fish growth, prevent disease outbreaks, and ensure sustainable aquaculture practices. Local environmental conditions and seasonal variations may also influence these parameters, so monitoring should be frequent and adaptable.

Method
Monitoring water quality in freshwater aquaculture ponds in and around Biharsharif involves employing various methods and techniques to assess the

parameters critical for fish health and growth. Here are some common methods used for monitoring water quality in aquaculture ponds:

1. **Sampling**: Regular sampling of water from different depths and locations within the pond is essential. Samples are usually and accordingly collected using a water sampler or a clean container.
2. **Temperature**: Temperature is measured using a calibrated thermometer. It's important to measure temperature at different times of the day since it can fluctuate and is done and recorded carefully.
3. **Dissolved Oxygen (DO)**: DO levels can be measured using a dissolved oxygen meter (electrochemical sensor) or through titration methods (e.g., Winkler method). During this work DO Meter is used on field to measure dissolved oxygen of the sample collected.
4. **pH**: pH is measured using a pH meter calibrated with standard buffer solutions. It's crucial to measure pH early in the morning before photosynthesis starts to get an accurate reading. It is measured timely and properly and recorded as well.
5. **Ammonia**: Ammonia levels were assessed using colorimetric test kits or specific ion-selective electrodes. In some cases, it was also analyzed through laboratory methods like spectrophotometry to verify the data.
6. **Nitrite and Nitrate**: Colorimetric test kits were used to measure nitrite and nitrate concentrations of water samples.
7. **Turbidity**: Turbidity were measured using a turbidimeter and a Secchi disk as well. A Secchi disk is lowered into the water until it disappears, and the depth is noted as a measure of water transparency.
8. **Alkalinity and Hardness**: Alkalinity and hardness were often measured using titration methods with specific chemical indicators and reagents.
9. **Total Suspended Solids (TSS)**: TSS were determined by filtering a known volume of water through a pre-weighed filter paper and weighing the dried residue.
10. **Phytoplankton and Zooplankton**: These were assessed by collecting water samples and examining them under a microscope to identify and quantify plankton species.
11. **Microbiological Parameters**: Testing for microbiological parameters involved collecting water samples and analyzing them for bacterial indicators

All the Samples were collected from the following concrete ponds at different sites within Biharsharif, Nalanda, Bihar, India.
1. MAA SHEETALA TALAB (MAGHRA)
2. MORA TALAB (MORA PACHASA)
3. INDRA TALAB (NALANDA)

CLIMATE: The climate of the whole region is tropical monsoon in character. The year may be broadly divided into three seasons i.e.
(i) SUMMER SEASON: from March to Mid-June.
(ii) RAINY (MONSOON) SEASON: from June to October.
(iii) WINTER SEASON: from November to February

Sampling Site:
1. Maa Sheetla Talab

Parameters	First Sampling	Second Sampling	Third Sampling	Average
Temp0C(A/W)	28/26	30/25	22/20	26.6/23.6
pH	7	7.73	7.54	7.42
D.O (mg/L)	1.1	3.4	1.4	1.96
Conductivity	740	750	131	540.3
BOD(mg/L))	7	6	5	6
Total Alkalinity (mg/L)	260	250	320	276.66
Chloride	65	125	66	85.33
Total hardness(mg/L)	175	180	200	185
Ca-hardness(mg/L)	90	105	124	106.33
Mg-hardness (mg/L)	81	82	78	80.33
Total solid(mg/L)	440	510	1000	650
Turbidity NTU	40	>20	40	33.33
Nitrogen as Nitrate(mg/L)	0.43	0.121	0.295	0.282
Ammonia (mg/L)	0.920	ND	0.320	0.413
Phosphorous as Phosphate (mg/L)	0.0420	1.310	ND	0.450
TC	>220000	140000	100000	153333.33
FC	>110000	9000	4300	41100

2. Mora Talab

Parameters	First Sampling	Second Sampling	Third Sampling	Average
Temp0C(A/W)	34/26	27/24	24/20	28.3/23.3
pH	9	8	8	8.5
D.O (mg/L)	8	6	10	7.4
Conductivity	945	123	127	395
BOD(mg/L))	6	2	2.3	5
Total Alkalinity (mg/L)	220	85	110	149
Chloride	15	50	30	25
Total hardness(mg/L)	104	90	84	93

	52	64	62	59
Ca-hardness(mg/L)	52	64	62	59
Mg-hardness (mg/L)	54	26	22	35
Total solid(mg/L)	520	90	430	340
Turbidity NTU	20	40	60	40
Nitrogen as Nitrate(mg/L)	0.24	0.1	0.440	0.26
Ammonia (mg/L)	ND	0.185	ND	0.080
Phosphorous as phosphate (mg/L)	46000	20000	9600	26,200
TC	20000	46000	4000	9600
FC	30000	50000	6000	76000

3. Indra Talab

Parameters	First Sampling	Second Sampling	Third Sampling	Average
Temp0C(A/W)	34/26	27/24	24/20	28.3/23.3
pH	9	8	8	8.5
D.O (mg/L)	8	6	10	7.4
Conductivity	945	123	127	395
BOD(mg/L))	6	2	2.3	5
Total Alkalinity (mg/L)	220	85	110	149
Chloride	15	50	30	25
Total hardness(mg/L)	104	90	84	93
Ca-hardness(mg/L)	52	64	62	59
Mg-hardness (mg/L)	54	26	22	35
Total solid(mg/L)	520	90	430	340
Turbidity NTU	20	40	60	40
Nitrogen as Nitrate(mg/L)	0.24	0.1	0.440	0.26
Ammonia (mg/L)	ND	0.185	ND	0.080
Phosphorous as phosphate (mg/L)	46000	20000	9600	26,200
TC	20000	46000	4000	9600
FC	30000	50000	6000	76000

Observation and Calculation

Observing and calculating water quality in freshwater aquaculture ponds in and around Biharsharif involved a systematic approach to collect data, analyze trends, and make informed decisions to optimize fish health and growth. Here's a structured outline on how observations and calculations are typically conducted:

1. Field Observation:
- **Temperature:** Water temperature was measured at various depths and times of day using a calibrated thermometer. Daily variations were recorded to understand thermal stratification and its impact on fish metabolism.
- **Dissolved Oxygen (DO):** A DO meter was used to measure DO levels throughout the pond, especially in the morning and evening when levels are typically lowest due to night time respiration and biological activity.
- **pH:** pH was monitored using a pH meter regularly. pH impacts ammonia toxicity and overall water chemistry as well.
- **Turbidity:** water clarity was assessed using a turbidity meter and Secchi disk, as high turbidity can reduce light penetration, affecting phytoplankton growth and overall productivity.
- **Water Depth:** Water depth was measured to calculate pond volume accurately and to monitor changes over time.

2. Laboratory Analysis:
- **Ammonia (NH_3/NH_4^+):** Colorimetric methods were used to analyze total ammonia nitrogen (TAN) and to calculate the unionized ammonia (NH_3) concentration, which is crucial for assessing toxicity to fish.
- **Nitrite (NO_2^-) and Nitrate (NO_3^-):** Spectrophotometric or colorimetric methods were used to determine nitrite and nitrate levels. Nitrite is toxic at elevated concentrations, while nitrate can contribute to algae growth and oxygen depletion.
- **Total Suspended Solids (TSS):** A measured volume of water sample was filtered through and dried the solids to determine TSS concentration, which affects water clarity and light penetration.
- **Alkalinity and Hardness:** Titrimetric methods are used to measure alkalinity and hardness, influencing pH stability and fish health.
- **Microbiological Parameters:** Water samples were analysed for total coliforms, fecal coliforms, and other pathogens to assess health risks to fish and potential for disease outbreaks.

3. Calculation and Interpretation:
- **NH_3/NH_4^+ Calculation:** The unionized ammonia concentration was calculated using the measured TAN and pH values. Tables and online calculators were used to determine toxic levels.
- **Water Quality Index (WQI):** Individual parameters (e.g., DO, pH, ammonia, nitrite etc.) were combined into a comprehensive index to assess overall water quality and identify trends over time.
- **Comparison with Standards:** Observed values were compared with regulatory/optimal ranges for aquaculture species. Accordingly, recommendations were conveyed to the stakeholders to adjust management practices for the parameters exceeded/varied recommended levels to avoid stress or mortality in fish.

4. Data Management and Reporting:

- **Record Keeping:** Detailed records of all measurements and analyses, noting any trends or anomalies observed were maintained promptly.
- **Reporting:** Regular reports were prepared summarizing water quality data, trends, and management actions taken. Findings were communicated to stakeholders (farm managers, regulators) to ensure transparency and compliance with standards.

By following these steps, aqua culturists can effectively monitor and manage water quality in freshwater ponds near Biharsharif as well as in other areas too, promoting sustainable aquaculture practices and optimizing fish production. Regular monitoring allows for timely interventions to maintain favourable conditions and mitigate potential risks to fish health and pond productivity.

Recommendations:
1. **Supplementation of Calcium and Magnesium**: A supplementation plan should be implemented to correct Calcium and Magnesium deficiencies. It can be achieved through commercially available mineral supplements or through natural sources, if feasible.
2. **Continued Monitoring**: A consistent schedule should be maintained for monitoring water quality parameters such as pH, dissolved oxygen, ammonia, and others. Consider seasonal variations and adjust monitoring frequency accordingly.
3. **Management Practices**: Best Management Practices (BMPs) should be incorporated to enhance water quality and overall pond management. This includes proper feeding practices, regular maintenance of pond infrastructure and monitoring of stocking densities.
4. **Training and Education**: Training to aqua culturists should be provided on water quality management and the importance of regular monitoring. This empowers them to make informed decisions and implement corrective actions effectively.
5. **Environmental Considerations**: The broader environmental impacts of aquaculture practices should also be considered. Various measures should be implemented to minimize nutrient runoff and ensure sustainable use of water resources.

Conclusion

The pond water investigated, were in general fit for pond fish productivity except for calcium and magnesium deficiency which could be corrected with some supplement. It is also important to note that regular water monitoring is worthwhile in order to improve the water quality of the ponds. Based on the investigation of pond water quality in and around Biharsharif for freshwater aquaculture, the findings indicate overall suitability for fish productivity, with some specific areas for improvement of suitability for fish productivity. The water quality parameters such as temperature, dissolved oxygen, pH, and ammonia levels generally support fish growth and health.

Calcium and Magnesium Deficiency: Identified deficiencies of Calcium and Magnesium can potentially affect water hardness and overall nutrient availability for fish. These deficiencies should be addressed through appropriate supplementation.

Importance of Regular Water Monitoring: The study underscores the importance of regular monitoring of water quality parameters. Regular monitoring allows aqua culturists to detect changes in water quality promptly, implement corrective measures, and maintain optimal conditions for fish.

By addressing these recommendations and maintaining vigilance through regular water monitoring, aqua culturists can optimize fish productivity, improve overall pond health, and contribute to sustainable aquaculture practices in the region.

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Abstract

This paper delves into the intricate dimensions of the trauma of death, examining its portrayal from various perspectives. It specifically aims to analyze the theme of death-related trauma within modern literature, focusing on Louise Glück's poetry collection "Ararat." Louise Glück, one of America's most renowned contemporary poets, made history in 2020 as the first American woman in 27 years to win the Nobel Prize in Literature, following Toni Morrison in 1993. Glück, a Pulitzer Prize laureate and author of twelve critically acclaimed books, explores profound themes in her work. This study begins with an introduction to the concept and experience of the trauma of death, providing context for both the subject matter and the author. It then focuses on "Ararat" (1990), Glück's sixth poetry collection, which confronts the hollow life of her father and her mother's emotional reticence with devastating irony. Although these powerful, deeply felt lyrics might appear as a belated act of rebellion by a daughter, they are ultimately reinforced by love and understanding. While the poems primarily address the poet's family, death features prominently throughout, reflecting its significance in the poet's life, particularly in relation to the deaths of her father and sister.

Keywords: Trauma of Death, Louise Glück, Ararat, Psychoanalytic Study, Modern Literature

Introduction

Louise Glück, an acclaimed poet and former U.S. Poet Laureate (2003-2004), is celebrated for her intimate explorations of family relationships and the self. Her poetry blends personal revelations with archetypal subjects from classic myths. Notable works include "The Wild Iris" (1992), which won the Pulitzer Prize for Poetry. This thesis examines her last six books, starting with "Ararat" (1990), named after the Jewish cemetery where her family is buried. "Ararat" delves into traumatic family events and Glück's personal history. Her poetic journey spans from her troubled childhood in "Ararat" to philosophical musings on God, navigating a difficult divorce, and contemplating death in "Averno." These collections map out a woman's life stages, exploring existential and spiritual lessons learned. Glück's poetry aids in healing emotional wounds and achieving personal redemption, offering readers a symbolic mirror for self-discovery and emotional recovery. Her work fosters trust and empathy, allowing readers to apply her lessons to their lives.

The Notion of Death-Induced Trauma

Traumatic experiences disrupt daily life and erode self-worth, dignity, and a sense of security. Death is the ultimate traumatic event, as it ends life completely, transforming a person into a lifeless body incapable of any earthly activity. While death, loss, and pain are natural aspects of life, sudden and unexpected deaths, such as those from car accidents or suicides, can be devastating. The trauma of the experience combined with the sorrow of the loss can be overwhelming. According to K. R. Eissler, "man is the only creature that is aware of death, and this awareness determines his existence. As a result, the death drive is not (innate), and no one desires death. Furthermore, coping with the death of a loved one can be one of the most difficult challenges anyone faces. This can be due to murder, accident, or suicide. Death can be traumatic, and often violent, which can lead to increased distress" (195).

Freud suggested that the unconscious mind does not contemplate our own death. Although birth answers the question of existence, our history shows that everything born eventually perishes. To confront this inevitability, humans have sought solace in religion, philosophy, mysticism, art, and psychology. In "Beyond the Pleasure Principle," Freud noted that the purpose of existence is revealed through death, implying a fundamental desire to die. He proposed that living beings naturally seek to die on their own terms.

"Every man's life is haunted by its haunting shadow, no matter how carefully (analyzed) it may be. Every time we come face-to-face with it, we suffer some degree of trauma. There is just one (trauma of birth). Throughout a man's life, he is subjected to the trauma of death several times. The realization of one's mortality is one of life's most enduring, persistent, and tragic traumas" (Slochower, 1964, p21).

The fear of death often reflects a desire to live fully and with dignity. Death, the ultimate unknown, casts a shadow over life, causing recurring trauma. Recognizing one's mortality is a persistent, tragic trauma.

Death remains a compelling literary theme, captivating writers and readers. Louise Glück portrays death as harsh and agonizing, forcing readers to confront its power. Her unique, insightful depiction ensures death's enduring significance in literature and life.

Understanding the Concept of Trauma

Trauma reflects the human experience, with its manifestation varying based on individual or group responses. In literary works, memories of unforgettable events serve as key elements. The brilliance of these works lies in their ability to intertwine literary imagination with the spiritual and psychological effects on real or fictional characters. "To deal with the extensive descriptions of trauma and its impact on human conduct in the future, it is necessary to analyze the cultural context of social appreciation, which emphasizes the significance of remembering the past and the impact it has on one's own identity." (Sulaiman,2020, p12). In its general definition, trauma is described " as the response to an unexpected or overwhelming violent event or events that are not fully grasped as they occur but return later in repeated flashbacks, nightmares, and other repetitive phenomena." (Caruth,1995, p91). Trauma reflects the human experience, with its manifestation varying based on individual or group responses. In literary works, memories of unforgettable events serve as key elements. The brilliance of these works lies in their ability to intertwine literary imagination with the spiritual and psychological effects on real or fictional characters. "the sequence of the incidence of the event, its denial, and eventually its reappearance." (Verbestal, 2010, p 11). It is a consequence of hostile life experiences that engulf an individual's capacity to deal with and adjust positively to whatever threat s/he faces (Van der Kolk,1995,p 96).Cathy Caruth describes Freudian trauma as follows: " Wound of the mind—the breach in the mind's experience of time, self, and the world—is not, like the wound of the body, a simple and healable event..." (Caruth,1995,p4).

Cathy Caruth's interest in trauma theory led her to publish "Unclaimed Experience," a seminal book exploring the connection between trauma and literature. This work is regarded as one of the most significant contributions to trauma studies. "An overpowering experience of abrupt or catastrophic occurrences in which the reaction to the incident happens in the frequently delayed, uncontrolled recurring emergence of hallucination and other intrusive phenomena", she writes in her book (Caruth,1995,p11). Caruth suggests that an "overwhelming experience" leaves the brain unprepared for trauma's impact. Traumatic memory acts as a collective memory, engaging readers in healing. Traumatic events disrupt daily life, undermining belief, confidence, dignity, and security. Speech often fails after trauma, leaving indelible memories. Traumatized individuals may despair, withdraw, and lose future interest. Remembering the trauma is essential for healing.

Trauma and Shock in "Ararat" (1990)

In "Ararat," Glück removes the mask of mythical or fabled figures to expose the raw expressions of traumatic shocks through her language: "I was wounded a long time ago. The first poem in this collection is, "Parodos", a poem in which the poet presents herself as the teller of her autobiographical drama." (Glück ,1995, p15). This poem in "Ararat" boldly defies the norm that poetry should suggest rather than explain. Glück emphasizes inactivity, using the auxiliary verb "to be" and short sentences with parallelism, apposition, and balanced antithesis to challenge the idea that good writing requires active verbs. "As a hero, Ararat's speaker attributes to herself both blindness and hubris and, balancing self - dramatization with self – incrimination. she writes in the first poem, "Parodos", a poem in which the poet presents herself as the teller of her autobiographical drama." (Glück, 1990, p 15). The title hints at a Greek play's choral beginning, suggesting theatricality and allusion. Yet, the traditional frame Glück chose cannot contain the speaker's unexplained disturbance. "Alerts us to the separate uniqueness of the fragmentary being whose battle starts at birth, the breaking into existence leaving a wound that never heals," Melissa Brown says of the poem (Brown,1997, p 67). In "Parodos," the narrator describes an event blurring life and death, blending ordinary speech with the mystic tones of a clairvoyant who has paid dearly for her gift.

"Long ago, I was wounded. I learned to exist, in reaction, out of touch with the world: I'll tell you what I meant to be a device that listened. Not inert: still. A piece of wood. A stone. Why should I tire myself, debating, arguing? Those people breathing in the other beds could hardly follow, being uncontrollable like any dream- Through the blinds, I watched the moon in the night sky, shrinking and swelling. I was born to a vocation: to bear witness to the great mysteries. Now that I've seen both birth and death, I know to the dark nature these are proofs, not mysteries." (Glück,1990, p 15).

The poet reveals her internal conflict, hoping for resolution, as the reader sees the origins of her wound and her deep detachment from the world. Glück romanticizes this detachment and her emotional damage by telling herself that, as a poet, she was "born to a vocation: to bear witness to the great mysteries…birth and death." However, she learns throughout the book that birth and death are not mysteries but proofs of the value of mortality, making life's events significant. "The speaker portrays herself as "a bit of wood" who is "out of touch / with the world." "A stone", she says. Glück describes her speaker's emotional state as mental numbness and geographical disorientation using these visuals." (Selinger,1993, p20). She may connect to nature's inert elements, but remains detached, existing as a voice processing thoughts. Glück's speaker is a broken medium, "a gadget that listened." Slinger likens Glück to Adrienne Rich's "half-destroyed instruments" in "Diving into the Wreck." Like Dickinson, Rich, and Glück, trauma humorously disrupts truthfulness, creating authenticity through an imperfect narrative. In "Ararat," Glück portrays three generations of women mourning recent family losses. "The Untrustworthy Speaker" reveals profound sadness, integrating the wound into her words:

If you really want the truth,

You have to close yourself to the older daughter

block her out: when a living thing is

That is why I should not be believed.

Because a mental hurt is the same as a physical wound. (Glück ,1990, p35).

Glück invites us to distinguish between deception and insincerity by describing her character as untrustworthy (Morris, 2021, p122). Dishonesty provides credibility to the description of how the "wound to the heart" gets expressed like the "wound of the intellect" in trauma writing.

The narrator portrays herself as an ideal victim, a scapegoat to be "factored out / in the interest of truth." In "The Untrustworthy Speaker," she admits, "don't trust a word I say, I have had my heart broken, so now my mind is broken too." This raises the question of trust: Is the narrator objective, revealing truths with precision, or subjective, focusing only on her perceived flaws due to her pain? The paradox invites readers to question the reliability of her narrative. "Don't listen to me; my heart's been broken.

I don't see anything objectively.

I know myself; I've learned to hear like a psychiatrist.

When I speak passionately, that's when I'm least to be trusted ".

Glück often omits details, expecting readers to fill in the blanks, unlike poets who spoon-feed their stories. This approach depends on whether the speaker trusts readers to piece things together or simply wants to tell their story "as-is." In "The Untrustworthy Speaker," Glück presents herself as a traumatic victim, using her poetry to partially imagine herself while revealing her aggressive instincts. By adopting a biblical framework, she critiques the misuse of language and authority to conceal violence. Glück draws parallels between the Bible's imaginative power and the literary canon, revealing and hiding her aggressive nature through her texts. Although she maintains a complex relationship with the Bible, she uses it to revise traditional gender, Jewishness, and identity concepts. Her poetry, like Hebrew interpretive traditions, favors dialogue and critique over rigid identities. Glück balances familiarity and alienation from scripture, giving her anguish a public dimension while distancing herself from everyday life, which she finds painful and isolating.

In "Lost Love," the speaker is a victim of a traumatic event. She suffers from a lack of affection and kindness from parents consumed by their own grief over the premature loss of another daughter.

Something did change: when my sister died,

My mother's heart became very cold, very rigid,

Like a tiny pendant of iron (Glück,1990, p17).

The speaker's youth was effectively stolen by her sister, who took their mother's adoration to the grave. In "Lost Love," "The Untrustworthy Speaker" admits that her portrayal as a victim of tragic circumstances has obscured, rather than revealed, a crucial aspect of her identity.

I never see myself,

Standing on the front steps,

Holding my sister's hand.

That's why I can't account

For the bruises on her arm, where the sleeve ends. (Glück,1990, p 34).

She claims that part of recovering from trauma is admitting accountability for why her language has failed to reconstruct the self in the past. In this example, "she acknowledges that she needs to come to grips with her angry emotions and violent conduct toward her sister when they were both youngsters to rehabilitate." (Sadoff,2001, p82). The "Widows" are a group of emotionally traumatized individuals who, like "The Untrustworthy Speaker," are coming to grip with their violent inclinations toward one another over the regulating form of a deadly serious card game:

My mother's playing cards with my aunt,

Spite and Malice, the family pastime, the game

my grandmother taught all her daughters.

Midsummer: too hot to go out

Today, my aunt's ahead;

she's getting the good cards.

My mother's dragging,

Having trouble with her concentration. (Glück,1990,p 42).

Conclusion:

In psychology, numerous theories have emerged to heal trauma. Pain, in any form, is a harsh, cruel, and unfair test. It strips away pretenses and challenges relationships uniquely. Louise Glück's poems vividly explore themes of loss, sorrow, pain, and life's daily struggles. Her sixth collection, "Ararat," confronts, with devastating irony, her father's hollow existence and her mother's emotional suppression. These fierce, deeply felt lyrics, however, are steeled by love and understanding, not mere rebellion.

"Ararat" features a semi-autobiographical narrator discussing family relationships, including her newborn sister's death, sibling rivalry, her father's early death, and her mother's reaction to these losses. The collection also addresses her challenges as a parent. Accessible to most readers, the poems unsentimentally tackle grief and family dynamics. Both the first and last poems in "Ararat" begin with, "Long ago, I was wounded." By the last poem, the narrator better understands her silent, undemonstrative father and herself.

The sequence begins and ends with meditations on her father's death, with poems exploring sibling rivalry, selfhood, and parenthood in between. Compared to her later work, the language is more formal and self-conscious, the imagery more developed and controlled. Family, grief, and memory take precedence over nature and the present moment. While sometimes repetitive, the individual poems are well-crafted and affecting. Glück frequently draws on her experiences, tracing a journey toward healing and self-discovery. The subject of trauma draws both passionate advocacy and skepticism in disproportionate measure.

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ABSTRACT

The development of student abilities of scientific research activity in the process of studies appears as a highly important area. In the course of studies, students not only increase their general competencies, acquire professional abilities and skills but also learn to conduct research. This does not mean that all students will build their careers in the field of scientific research in the future. Scientific research activity should be universally stimulated and developed. Scientific research activity is not an entertainment but responsible, thorough work requiring a lot of self-independence. Improvement on scientific research activity is not possible without empirical data based on the status. Such activity promotes student analytical thinking, the abilities of searching and using information and they learn how to analyze the collected material, prepare reports, make research presentations, etc. The study is focused on the development of activities for the development of research activities of students in the learning process in Higher Education. The author analyzed the summary of students' research activities, identified the main tasks of students' research activities and found that the development of students' research activities in higher education will be useful and will be reflected in the dynamics of their creative self-development if it is carried out within the framework of the research development program as a joint activity of a teacher and a student. The author proposed a method for the development of research activities of students in the learning process and empirically tested its effect. The research has revealed student understanding of scientific research activity, its key strengths and weaknesses as well as allowed assessing the significance of such activity during higher education.

Keywords: Scientific research activity, Higher Education, Research development, Qualitative research, scientific research.

Introduction

The development of the abilities of scientific research activity during higher studies is an important area still requiring serious attention. The carried-out research demonstrates that scientific research activity significantly contributes to their professional development by providing opportunities to apply the knowledge acquired at the higher studies in a real professional environment and to courageously move forward according to the selected academic area. The full implementation of potential synergies between faculty research and undergraduate education also plays a substantial role (Prince et al., 2007). A teacher-researcher constantly reflects his/her individual activity, organizes research on educational activity, employs different research methods and creatively applies research results. Recently, speeches and documents prepared by education policy-makers (Pollard et al., 2008) have put a particular emphasis on the objective of the teacher to develop research activity and to become a teacher-researcher in educational practice. Student scientific research activity can be easily organized by the teachers that have experience in this field and manage to effectively create scientific research situations when students are engaged in research activity itself and when satisfaction in the search process is promoted.

1.   Literature Review

In the context of a changing educational environment, the requirements for the qualifications of students in higher studies, for their preparedness in the professional and social sense, also change (Karyy & Knjazevska, 2009; Barnea, 2020). Teaching methods and tools are gradually changing (Tkachenko et al., 2019). Society sets before education the task of training innovative specialists with nonstandard creative thinking and productive activities.

The idea of concentrated education was considered by foreign and domestic scientists (Luo et al., 2019); models used in the conditions of general education, vocational and higher education (Ibragimov, 1995; Ibragimov, 2003); as well as the experience of applying the technology of concentrated learning in a university and explores the efficiency and efficacy of concentrated learning is sufficiently substantiated in the works (Brookfield, 2003; Baun, 2015).

Research activity is one of the main components of the process of teaching university students, and in current conditions, it already begins with 1-2 courses of study (Svasta et al., 2004; Ginsburg, 2011). The introduction of educational standards of a new generation poses several problems for higher education, including the question of the continuous development of the individual as a subject of education throughout his life (Ginsburg, 2011). It becomes essential to orient the educational process towards the development of the creative potential of the

individual, his self-education, self-development. Therefore, the issues of the development of research activities of students in the process of studying at the higher educational institutions become more and more urgent.

2. Students' Research Activity

The primary meaning of research in the field of education is that it is educational, pointing out the need to develop the intellectual qualities of a person, creative thinking, therefore when determining the essence, structure and content of research activity following provisions are adopted:

- research activity is a holistic education that includes interrelated components;
- research activity should be considered in the context of the general psychological theory of activity, proceeding from the law on the unity of development of activity and personality (Rubinstein, 1973).
- research activity is carried out based on an acmeological approach and is considered as a creative activity that allows realising the ideas of self-actualisation and self-development in the process of research activity.
- the integrative developmental approach involves the implementation of the principles of development and integration in learning.

The development of research activities of university students will open up opportunities to approach problem-solving in a creative way. In this sense, the issues of the creative development of the individual, the achievement of effectiveness and the potential for creative self-realisation inactivity are covered in detail in the acmeological theory.

The main tasks of the research activities of students are:

- formation of the scientific worldview, mastering the methodology and methods of scientific research;
- assisting students in the accelerated mastery of the speciality, the achievement of high professionalism;
- development of creative thinking and individual abilities of students in solving practical problems;
- instilling in students the skills of independent research activities;
- development of initiative, the ability to apply theoretical knowledge in their practical work, the involvement of the most capable students in solving scientific problems that are essential for science and practice;
- the need for constant updating and improvement of their knowledge;
- expanding the theoretical horizons and scientific erudition of the future specialist;
- creation and development of scientific schools, creative teams, education in the walls of the higher educational institution of the reserve of scientists, researchers, teacher.

The research activity of students is represented by a set of interrelated components: cognitive, axiological, creative, organisational-activity, reflexive-evaluative, which are manifested at a limited, permissible, optimal level.

3. Organisational and educational conditions for the development of research activities of university students

Organisational conditions are considered as a set of prerequisites for the organisation of learning and the mechanism of interaction between the subjects of the learning process, providing purposeful research activities of students. The idea of concentrated learning, which has attracted increased interest among educational researchers and practitioners in recent years, is being applied at various levels of the educational system (Luo et al., 2019).

The experience of applying the technology of concentrated learning in a university and explores the efficiency and efficacy of concentrated learning is sufficiently substantiated in the works (Brookfield, 2003 and Baun, 2015) and allows its use in a university environment. Students' research work can take place both within and outside the educational process (Table 1).

Classifying various ways of organising concentrated education, G. Ibragimov proposes three models used in general education, vocational and higher education (Ibragimov, 1995; Ibragimov, 2003):

- the first model assumes the study of one main subject for a particular time;
- the second model of concentrated learning involves the enlargement of only one organisational unit - a school day, the number of subjects studied is reduced to one or two;
- the third model assumes the expansion of the academic week.

Table 1. Students' research work within and outside the educational process

Within the educational process	Outside the educational process
- writing abstracts of scientific literature on a specific topic in the process of studying the disciplines of the socio-humanitarian cycle, fundamental and vocational, specialized disciplines, specialization courses and electives; - performance of laboratory, practical, seminars and independent tasks, control work containing elements of problem search. - performance of a typical research tasks during the period of industrial practice, at the request of enterprises, institutions, organizations, cultural institutions etc. - Development of methodical materials with the use of research methods (glossaries, crossword puzzles, programs and methods of sociological search, etc.)	- Participation of students in the work of scientific circles, problem groups, creative sections, laboratories, etc.; - Involvement of students in the implementation of the state budget or self-supporting scientific work, researching within the creative co-operation of departments, faculties, computer centre with cultural institutions, education etc.; - Work in student information- analytical and cultural centres, translation bureaus; - Advertising, lecturing etc., - Writing articles, abstracts, other publications.

• Preparations and defence of term papers and dissertations related to research issues of specialised departments.	

From several studies, the second model of concentrated education proposed by G. Ibragimov is the most preferable in the conditions of a university. The authors note that the learning process based on the second model, more fully than in the first and third, takes into account the physiological characteristics of students.

Thus, the theoretical analysis gives grounds to consider a concentration in time, reflexive co-management and the gradually increasing complexity of problematisation of the content of the training as justified conditions in the development of students' research activities. The organisational conditions are concentration in time and reflexive co-management, the pedagogical situation is the gradually increasing problematisation of the content of education.

Based on this provision, the concept of concentrated teaching of education in the development of research activities of university students has been imposed which clarify the content of the concept of "problem-focused learning", which is considered as a type of developmental learning, the result of which is the creative self-development of students.

4. Model of the development of research activities of students

The proposed model for the development of research activities of university students in the process of problem-focused learning allows us to present evolution as a joint activity of the teacher and students in the development of problematic content (Table 2). The model reveals the procedural and substantive aspects of learning through various components (organisational, content, activity, evaluation and performance blocks) and functional ties (organisational, developmental, management, evaluation and performance).

Table 2. Model of the development of research activities of students

Organization:	Content:	Activity:	Evaluation and effectiveness:
includes elements based on which the process of organising problem- focused learning is built (learning principles, regulatory learning conditions, training blocks (modules), forms and methods of education).	reveals the content side of problem-focused knowledge and focuses on its developmental character, the primary criterion for selecting the content of education and its structure in the discipline is problematic.).	presupposes interconnectedness, orderliness, organisation and reflexive co-management of the teacher and the controlled activities of students, reflecting the nature of their interaction in the development of research activities of students.	is intended to determine the effectiveness of the development of research activities of university students; it is necessary to determine the criteria and indicators
principles of teaching, organisational and pedagogical conditions of education, organisational and methodological blocks, forms and methods of teaching.	problem situations, educational and creative tasks, creative projects	Stages of training support: Value-orientation; Information and analytical; Planned and predictive; Organisational and executive; Communication; Control and evaluation; Regulatory and corrective	Components: Cognitive - Axiological; Creative; Organizational and activity-based; Reflexive-evaluative Development levels: Limited; Valid; Optimal
organisational function of the model determines the process of organizing problem focused learning by the identified principles, organisational and pedagogical conditions, forms and methods of teaching.	development function of the model is not only in the formation of knowledge, special skills but also in the stimulation of cognitive activity, creative self-development, the creation of components of students' research activities. The control function is aimed at reflective interaction.	management function of the model is aimed at reflexive interaction (co-management) of the subjects of the learning process, the formation of students' ability to plan, self-organise and self-manage their activities.	evaluative and productive function of the model is aimed at diagnosing the levels of development of research activities of university students, with qualitative and quantitative changes in the components of students' research activities; determination of the effectiveness of its development.
EFFICIENCY OF RESEARCH ACTIVITY DEVELOPMENT: dynamics and effectiveness of creative self-development			

With the help of above model, it is possible to represent the process under study visually, to systematise knowledge about it, to create integral classifications, and to detail the relationship between components.

5. Experimental stage and the analysis of results

The purpose of the experimental stage of the study was to identify the state of development of research activities of students and the representation of conditions that contribute to its growth in the educational process of the university. The survey involved 18 teachers and 174 students of 1-5 courses of two universities and five colleges.

The program of the ascertaining stage of the research was implemented as a diagnosis of the general state of development of research activities of students in the educational process of universities and was carried out in the following areas:
- diagnostics of the development of components of research activities and determination of the levels of development of research activities of students;
- determination of the content of the activities of teachers, aimed at the development of research activities of students and its actual representation in the educational practice of universities;

To solve the set tasks at the ascertaining stage, the authors used empirical research methods (Table 3).

Table 3. Methods and techniques for studying the levels of development of components of research activities among university students

Research components	Methods and techniques
Cognitive	1. Observation of the activities of students during training sessions, conversations, assessment, self-assessment. 2. Methodology "Assessment of the ability to reason, self-development and self-education
axiological	1. Observation of the activities of students during training sessions, conversations, assessment, self-assessment. 2. Methodology "Value orientations"
creative	1. Observation of the activities of students during training sessions, conversations, assessment, self-assessment. 2. Methodology "Self-assessment of the level of a person's creative potential"
organisational and activity	1. Observation of the activities of students during training sessions, conversations, assessment, self-assessment. 2. Methodology "Ability of self-government"
reflective evaluative	1. Observation of the activities of students during training sessions, discussions, assessment, self-assessment. 2. Tests-questionnaires of reflexivity, "Research skills", "Who am I?"

The students were divided into two groups: where the proposed model for the development of student research activities was not applied (Group A) and where it was applied (Group B). Further, teachers assessed the dynamics of students' research activities, and expert teachers assessed the qualification work of bachelors and masters by components. The summary results are presented in Tables 4-5.

Table 4. The results of evaluating the components of students' research activities (Group A)

Research components	Insufficient level (0-1)	Acceptable level (2-3)	Acceptable level (4-5)	Optimal level (6-7)
cognitive	17	39	29	15
Axiological	25	35	18	22
Creative	9	53	17	21
organizational and activity	11	25	38	26
reflective evaluative	20	30	36	14

Table 5. The results of evaluating the components of students' research activities (Group B)

Research components	Insufficient level (0-1)	Acceptable level (2-3)	Acceptable level (4-5)	Optimal level (6-7)
Cognitive	13	31	31	25
Axiological	15	30	30	25
Creative	6	47	25	22
organizational and activity	6	20	35	39
reflective evaluative	10	21	44	25

For clarity of comparison, we present the results graphically (Fig. 1). Thus, the hypothesis that the development of students' research activities in the process of studying at a university will be more productive and will be reflected in the dynamics of their creative self-development if it is carried out within the framework of the program for the development of research activities using "problem-focused learning", was empirically confirmed.

The study showed that the earlier the proposed model was applied, the better the results were. It is recommended to use the model of development of research activities of students from the first year of study. The study also showed that there is a category of students who did not perceive the measures for the development of students' research activities; accordingly, it is necessary to take into account factors such as motivation. This proves that research activity makes quite definite requirements for the student's personality: the presence of the ability for creative self-development, reflection, which presupposes concentration (concentration) on a particular object. In general, the growth of the components of students' research activities ranged from 5% to 62%.
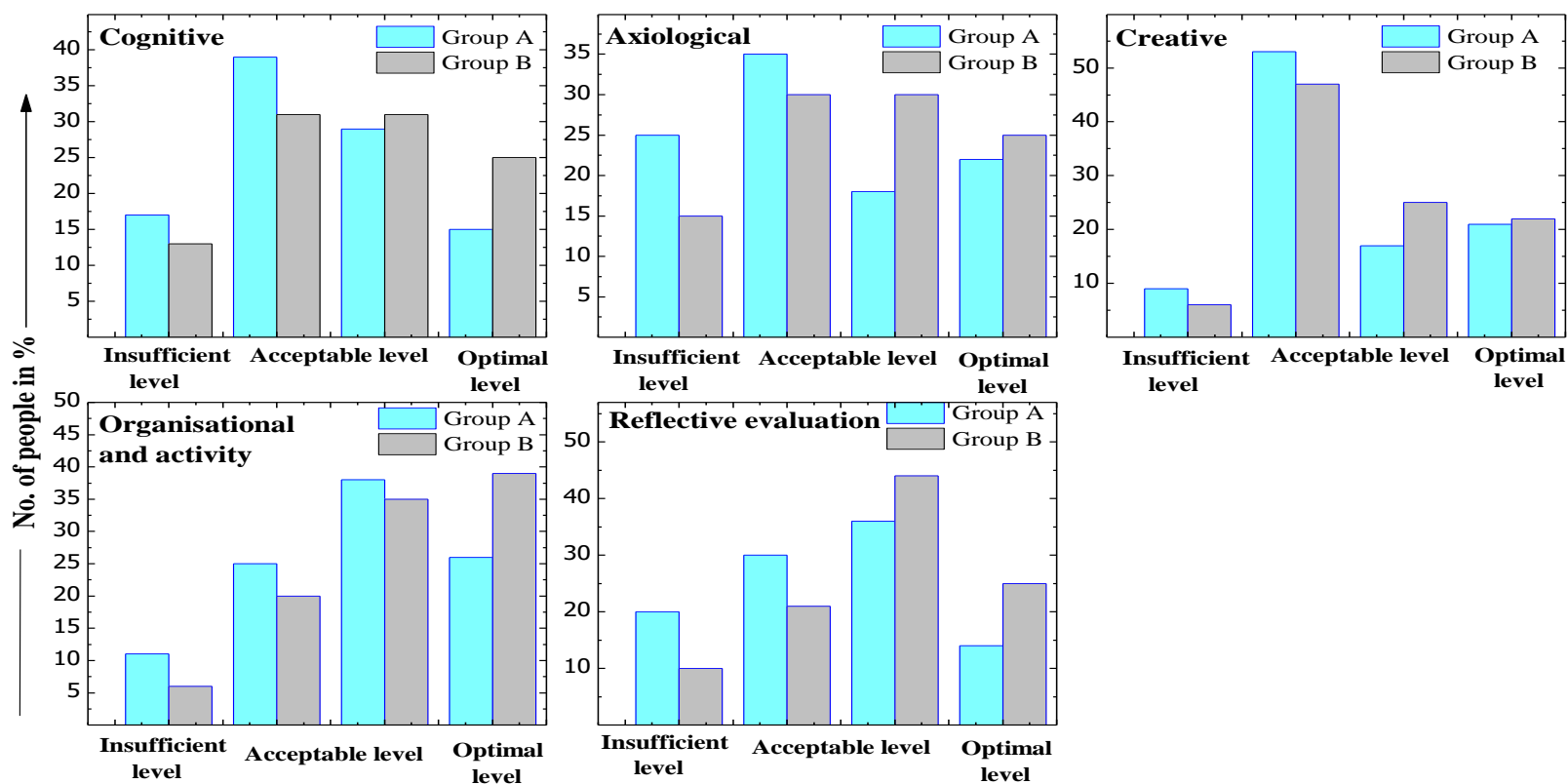
Figure 1: Model of development of research activities of students

6. Conclusion

Development is always individual, which means that the level of development of research activities for different students will be different. The results of the development of students' research activities are considered through scenarios (forecasts) of local, modular and systemic changes, which make it possible to realise the multivariance and nonlinearity of development paths in the aggregate of necessary and sufficient organisational and pedagogical conditions for problem-focused learning. Research activity makes quite definite requirements for the student's personality: the ability to creative self-development, reflection, which presupposes concentration (concentration) on a particular object, which is why "problem-focused learning" gives effective results.

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Abstract

This paper investigates the multifaceted challenges and barriers that impede education and skill development among women in Jharkhand, with a particular focus on Santhal and Munda women in the Ranchi and Khunti districts. Despite numerous governmental and non-governmental efforts, significant obstacles persist, hindering women's educational and professional advancement. The primary barriers identified include socio-economic constraints, cultural and social norms, and infrastructural deficiencies. Socio-economic barriers, such as poverty and child labour, force many girls to abandon their education in favour of contributing to household income. Additionally, entrenched gender biases often prioritize boys' education over girls', perpetuating a cycle of inequality. Cultural norms further complicate matters, with early marriage and social stigma acting as significant deterrents to educational attainment. The lack of female role models within communities also diminishes aspirations for higher education and professional growth among girls. Infrastructural challenges, such as inadequate transportation, poor school facilities, and safety concerns, exacerbate these issues, particularly in rural areas. Many educational institutions lack essential amenities like sanitation, electricity, and adequate learning materials, creating an unfavourable environment for education. Despite these challenges, various initiatives by the government and NGOs strive to bridge the educational gap. Government schemes like BetiBachaoBetiPadhao and grassroots NGO efforts aim to empower women through educational support and vocational training. However, the unique cultural and linguistic context of Santhal and Munda women require tailored approaches that respect their cultural identity and involve community participation. To address these barriers effectively, this paper recommends economic support for families, community engagement in educational planning, infrastructural investments, and awareness campaigns to challenge gender stereotypes. By implementing these strategies, Jharkhand can create a more equitable environment for women's education and skill development, fostering socio-economic progress in the region.

Introduction

Education and skill development are crucial for the socio-economic advancement of any community. In Jharkhand, a state with a significant tribal population, the educational attainment of women, particularly among the Santhal and Munda tribes, remains alarmingly low. This paper explores the diverse challenges that impede educational and professional growth among these women, despite the efforts of various governmental and non-governmental initiatives. Understanding and addressing these barriers is essential for creating an equitable society and promoting sustainable development.

Literature Review

Several studies have highlighted the challenges faced by women in accessing education and skill development in India. According to the Annual Status of Education Report 2020 (ASER), there is a significant gender gap in educational attainment in rural India. Studies focusing on tribal women, such as those by Das (2012) and Singh (2018), underscore the compounded disadvantages due to socio-economic and cultural factors. These barriers include poverty, child labour, early marriage, and gender biases that prioritize boys' education over girls'. Moreover, infrastructural challenges such as poor school facilities and lack of transportation further exacerbate the issue, particularly in rural and tribal areas.

Government initiatives like BetiBachaoBetiPadhao and NGO efforts have shown some success in improving educational outcomes. However, as Sharma (2021) points out, these programs often fail to address the unique cultural and linguistic needs of tribal communities. There is a growing recognition of the need for culturally sensitive approaches that involve community participation and respect for indigenous identities.

Research Design

This study employs a mixed-methods approach, combining qualitative and quantitative research methods to provide a comprehensive understanding of the barriers to education and skill development among Santhal and Munda women in Ranchi and Khunti districts of Jharkhand.

Objectives

1.   To identify the socio-economic, cultural, and infrastructural barriers to education among women in Jharkhand.

2. To evaluate the effectiveness of government and NGO initiatives aimed at improving women's education and skill development.

3. To recommend strategies for overcoming these barriers and promoting equitable educational opportunities.

Hypotheses
1. H1: Socio-economic constraints significantly hinder women's education in Jharkhand.
2. H2: Cultural norms and gender biases are major barriers to educational attainment.
3. H3: Infrastructural deficiencies adversely affect women's access to education.
4. H4: Tailored approaches that respect cultural identities can improve educational outcomes.

Sampling Strategy

The study targets Santhal and Munda women in the Ranchi and Khunti districts of Jharkhand. A stratified random sampling method ensures representation from different socio-economic backgrounds. The sample size includes 300 respondents, with equal representation from both tribes and districts.

Data Collection

Primary Data
- Surveys: Administered to 200 women to gather quantitative data on educational attainment, socio-economic status, and perceptions of barriers
- Interviews: Conducted with 50 women, 20 educators, and 10 community leaders to gain qualitative insights
- Focus Group Discussions: Held with 40 women to discuss experiences and challenges in education and skill development

Secondary Data
- Government Reports: Analysis of documents such as the Jharkhand State Education Report and BetiBachaoBetiPadhao program evaluations
- NGO Publications: Review of reports and case studies from organizations working in the region
- Academic Articles: Examination of studies on tribal education and women's empowerment

Data Analysis

Qualitative Analysis

Thematic analysis is used to identify recurring themes and patterns from interviews and focus on group discussions. This method helps in understanding the contextual and cultural nuances of the barriers faced by Santhal and Munda women.

Quantitative Analysis

Statistical analysis of survey data is conducted using SPSS software. Descriptive statistics, cross-tabulations, and regression analysis are employed to explore relationships between variables and test hypotheses.

Hypothesis Testing

Statistical tests such as chi-square tests and t-tests are used to validate the hypotheses. The significance of socio-economic, cultural, and infrastructural barriers is examined, and the effectiveness of tailored educational approaches is assessed.

Descriptive Analysis

Demographic Profile

The demographic analysis reveals that the majority of respondents are between 18 and 35 years old, with varying levels of educational attainment. Most women belong to low-income households, with agriculture being the primary occupation.

Socio-economic Barriers

Poverty emerges as a significant barrier, with many girls forced to abandon their education to contribute to household income. Child labour is prevalent, particularly in rural areas, exacerbating the educational gap.

Cultural and Social Norms

Early marriage and entrenched gender biases significantly deter educational attainment. Cultural expectations often prioritize domestic responsibilities for girls, limiting their time and opportunities for education.

Infrastructural Challenges

Inadequate transportation and poor school facilities are major obstacles, particularly in rural areas. Many schools lack basic amenities such as sanitation, electricity, and adequate learning materials, creating an unfavourable environment for education.

Discussion

The findings highlight the multifaceted nature of the barriers to education and skill development among Santhal and Munda women. Socio-economic constraints, cultural norms, and infrastructural deficiencies are deeply intertwined, creating a complex web of challenges. Despite various initiatives, there is a need for more culturally sensitive approaches that involve community participation and respect for indigenous identities.

Recommendations
1. **Economic Support:** Provide financial assistance to families to reduce the economic burden of education. This could include scholarships, stipends, and conditional cash transfers.
2. **Community Engagement:** Involve community leaders and members in educational planning and decision-making. Community-led initiatives can ensure that educational programs are culturally relevant and widely accepted.
3. **Infrastructural Investments:** Improve school facilities, particularly in rural areas, by ensuring access to sanitation, electricity, and adequate learning materials. Transportation facilities should also be enhanced to facilitate safe and reliable access to schools.
4. **Awareness Campaigns:** Launch campaigns to challenge gender stereotypes and promote the value of girls' education. Highlighting successful female role models within the community can inspire and motivate young girls.

Conclusion

This paper underscores the critical need for a multifaceted approach to address the barriers to education and skill development among Santhal and Munda women in Jharkhand. By addressing socio-economic constraints, challenging cultural norms, and improving infrastructure, Jharkhand can create a more equitable environment for women's education and skill development. Such efforts are essential for the socio-economic progress of the region and the empowerment of its women.

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Abstract
Economic growth in India has significantly lifted millions out of poverty over the past few decades, especially through the expansion of industries like information technology and services. However, the benefits of this growth have not been equally distributed across the population. Income inequality remains a significant challenge, with marginalized communities, rural areas, and informal sector workers often being left behind. To effectively combat poverty, India needs to implement targeted policies that focus on providing opportunities for skill development, improving access to quality education and healthcare, and creating employment in sectors that benefit the most vulnerable populations. Additionally, social safety nets and welfare programs can help protect those most at risk of falling into poverty, while efforts to promote inclusive growth can ensure that all segments of society benefit from economic progress. Overall, the relationship between economic growth and poverty in India underscores the need for a holistic approach that combines sustained economic development with social policies that prioritize equity and inclusion. By addressing both the macroeconomic factors driving growth and the social determinants of poverty, India can work towards a more equitable and prosperous future for all its citizens.

Introduction
The relationship between poverty and economic growth in India is complex. Economic growth can help reduce poverty by creating more job opportunities, increasing incomes, and improving living standards. However, the benefits of economic growth do not always reach the most vulnerable segments of society, leading to income inequality and persistent poverty. Addressing poverty requires targeted interventions, social welfare programs, and inclusive economic policies to ensure that the benefits of economic growth are equitably distributed among all segments of the population. India faces ongoing challenges of poverty and unequal economic growth. While the country has made significant progress in reducing poverty rates, millions still live below the poverty line. Economic growth has been impressive, yet unevenly distributed, with disparities between rural and urban areas widening. Factors like corruption, insufficient infrastructure, and education gaps perpetuate these issues. Addressing poverty necessitates sustainable development policies, improved access to education and healthcare, and equitable wealth distribution to foster inclusive economic growth in India. India's battle with poverty and economic growth encapsulates a complex interplay of social, political, and economic factors. Despite being one of the fastest-growing economies globally, a significant portion of the population still grapples with poverty. The rural-urban divide stands out starkly, with rural areas witnessing slower development compared to urban centers. Factors contributing to persistent poverty include limited access to quality education and healthcare, lack of infrastructure, high levels of corruption, and inadequate job opportunities. These issues are further compounded by challenges such as climate change impacts, population growth, and insufficient social safety nets. The Indian government has implemented various poverty alleviation programs and economic reforms to address these issues. Initiatives like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and the National Rural Livelihood Mission aim to provide employment opportunities and improve livelihoods in rural areas. Additionally, economic policies promoting foreign investment, industrial growth, and entrepreneurship have bolstered economic progress. To achieve sustainable development and inclusive growth, India must focus on improving education and skill development, enhancing healthcare facilities, strengthening social welfare programs, and fostering equal economic opportunities across different regions and sections of society. By addressing these multifaceted challenges comprehensively, India can pave the way for a more equitable and prosperous future for all its citizens.

The relationship between poverty and economic growth in India
Poverty affects economic growth:
1. **Limited consumer market:**
   Poverty reduces consumer spending, hindering economic growth.
2. **Low productivity:**
   Poor health, education, and nutrition limit workforce productivity.
3. **Inequality:**

High poverty rates exacerbate income inequality, reducing economic mobility.

Economic growth affects poverty:
1. **Job creation:**
   Economic growth generates employment opportunities, reducing poverty.
2. **Increased income:**
   Growth leads to higher incomes, enabling people to escape poverty.
3. **Improved infrastructure:**
   Economic growth funds infrastructure development, benefiting the poor.

Challenges in India:
1. **Inclusive growth:**
   India's economic growth has not been inclusive, with benefits largely accruing to the wealthy.
2. **Regional disparities:**
   Growth has been concentrated in certain regions, leaving others behind.
3. **Social and economic inequalities:**
   Persistent inequalities hinder poverty reduction efforts.

Initiatives to address poverty and promote economic growth:
1. **Inclusive policies:**
   Implement policies targeting the poor, such as social welfare programs.
2. **Invest in human capital:**
   Focus on education, healthcare, and skill development.
3. **Infrastructure development:**
   Invest in rural infrastructure to promote inclusive growth.
4. **Encourage entrepreneurship:**
   Support small businesses and entrepreneurship to create jobs.

Poverty Growth in India

Poverty:
- According to the World Bank, India had 176 million people living below the international poverty line of $1.90 a day in 2020.
The poverty rate has declined from 45.3% in 1993 to 13.4% in 2018 (World Bank).
However, India still has a significant number of poor people, with 22% of the population living below the national poverty line (2019-20, NSSO).

Growth:
- India has experienced rapid economic growth, with GDP growth averaging 7% per annum over the last two decades.
The country has become the 5th largest economy in the world, with a GDP of over $2.7 trillion (2021).
Growth has been driven by services, manufacturing, and agriculture, with a growing middle class and increasing urbanization.

Challenges:
- Despite growth, poverty and inequality persist, with benefits of growth not reaching all segments of society.
Regional disparities, with some states experiencing slower growth and higher poverty rates.
Need for inclusive growth policies to address poverty, inequality, and social exclusion.

Initiatives:
- Government schemes like Ayushman Bharat, PM-KISAN, and MGNREGA aim to address poverty and inequality.
Emphasis on education, skill development, and job creation to promote inclusive growth.
Digital India and Startup India initiatives to foster entrepreneurship and innovation.

Economic Growth in India

Overview:
India's economy has transitioned from a mixed planned economy to a mixed middle-income developing social market economy 1.

GDP:
India has the world's fifth-largest economy by nominal GDP and the third-largest by purchasing power parity (PPP) 1.

Growth Rate:
The annual average GDP growth has been 6% to 7% since the start of the 21st century [1].

Sectors:
The service sector makes up more than 50% of GDP and remains the fastest growing sector, while the industrial sector and the agricultural sector employs a majority of the labor force 1.

Challenges:
India faces high unemployment, rising income inequality 1 and a drop in aggregate demand 1

Objectives:
1. **To analyze the relationship between poverty and economic growth in India:**
   Examine the correlation between economic growth rates and poverty reduction.
2. **To identify the impact of economic growth on poverty:**
   Determine how economic growth affects poverty rates, income inequality, and human development.
3. **To assess the effectiveness of poverty reduction strategies:**
   Evaluate government policies and programs aimed at reducing poverty.
4. **To explore the role of inclusive growth in poverty reduction:**
   Investigate how economic growth can be made more inclusive to benefit disadvantaged groups.

5. **To examine regional disparities in poverty and growth:**
   Compare poverty rates and economic growth across different states and regions.
6. **To investigate the impact of poverty on economic growth:**
   Analyze how poverty affects economic growth, including reduced consumer spending and limited labor productivity.
7. **To identify key drivers of poverty reduction:**
   Determine the most effective factors in reducing poverty, such as education, healthcare, and job creation.
8. **To develop policy recommendations for inclusive growth and poverty reduction:** Provide evidence-based suggestions for policymakers to promote inclusive growth and reduce poverty.

Poverty and Economic Growth in India in 2024
1. **Poverty Reduction:**
   India has seen a significant reduction in poverty over the last decade, with provisional estimates suggesting a decline to 3-5% if using the Tendulkar line of poverty, and 8-11% using the Rangarajan line [1].
2. **Economic Growth:**
   Economic growth is considered a necessary requirement for long-run poverty reduction [1]. India's economic growth since liberalization has led to a rapid decline in poverty [1].
3. **Growth Elasticity of Poverty:**
   The growth elasticity of poverty (GEP) measures the percentage reduction in poverty rates associated with a percentage change in per capita income [1]. India's GEP has been highest in the last decade, indicating a sharp decline in poverty [1].
4. **Structural Transformation:**
   Economic development involves structural transformation, where workers move from agriculture to manufacturing and services, leading to increased productivity and reduced poverty [1]. India's growth model has been reliant on shifting weights within the non-agricultural sectors, benefiting the upper and middle classes [1].
5. **Inclusive Growth:**
   Inclusive growth remains a challenge, as the benefits of growth have not been evenly distributed, with a small fraction of the population benefiting from high-end services [1].

Conclusion

India's economic prospects for the fiscal year 2023-24 are characterized by optimism and a promising growth trajectory. Various factors, including favorable monsoon patterns, increased capital expenditure, robust new company registrations, and sustained credit growth, contribute to this positive outlook. poverty is not the problem of a person but of the whole nation. Also, it should be deal with on an urgent basis by the implementation of effective measures. In addition, eradication of poverty has become necessary for the sustainable and inclusive growth of people, society, country, and economy.

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Type: General Review

Abstract
India has a rich tradition of education and learning right from ancient times and especially during the Renaissance period, the Golden Age of Indian Culture. The major three achievements in education, during this period were the decimal system, the great Sanskrit epics, and the contribution to the sciences of astronomy, mathematics, and metallurgy. The four Vedas, i.e., the Rigveda, Yajurveda, Samaveda, and the Atharvaveda were configured through ideals, practices, and conducts. The doctrine of action (Karma) occupies a very significant place in the Indian system of education and has evolved during the transition from ancient to modern education. Two methods of teaching were being practiced during the Vedic period. First, the verbal/oral method, and the second based on thinking (Chintan). Current higher education has shown trends of multidisciplinary approaches along similar lines. NEP 2020 also suggests a multidisciplinary approach.

Key Words: - Education, learning, curriculum, ancient, medieval, modern

Introduction
Proper education will play a significant role in making youth future-ready and increasing economic growth by providing skilled persons which will also boost industrial development. In the modern era of education, every institution or university is adapting new teaching methods using their teaching methodologies. Indian education is the biggest and well-known education systems in the world. During ancient education, there were 5 big well-known universities like Takshashila, Nalanda, Vallabhi, etc., which focus on the all-round development of students and those in the medieval period there exists 2 institutions madrasah and maqtabs which mostly focus on building student religious and leaders of the future. During ancient education, students live away from their parents, their education comprises of subjects like physical education, mental education, politics, economics, etc. They were shaped in a way that they can live in any condition considering how difficult the situation will be, Medieval education also followed the same protocol as ancient education in spite that their education mostly focuses on religion. everything is changed like the living standard of students, curriculum, all-round development. The principle objective of the student has been to just achieve its goal and be successful.

Ancient Indian education holds significant importance in shaping not only the cultural and intellectual landscape of the region but also influencing educational practices worldwide. Here are some key aspects highlighting the significance of ancient Indian education:

1. **Holistic Approach to Education**:
Ancient Indian education, particularly in Vedic and classical periods, emphasized a holistic approach to learning. It integrated spiritual, moral, and intellectual dimensions, aiming to nurture well-rounded individuals capable of contributing positively to society.
2. **Gurukula System**:
The Gurukula system was a hallmark of ancient Indian education where students lived with their gurus (teachers) in an immersive environment. This system emphasized personalized learning, mentorship, and experiential knowledge transfer across diverse fields including philosophy, mathematics, astronomy, medicine, and the arts.
3. **Advancements in Knowledge and Sciences**:
Ancient Indian scholars made pioneering contributions in various fields such as mathematics (concept of zero, decimal system), astronomy (concept of heliocentrism), medicine (Ayurveda), philosophy (Yoga, Vedanta), and literature (Sanskrit literature). These contributions laid the foundation for subsequent developments in global knowledge systems.
4. **Promotion of Liberal Arts and Sciences**:
Education in ancient India promoted a broad-based curriculum encompassing liberal arts (grammar, logic, rhetoric, poetry) as well as sciences (mathematics, astronomy, medicine). This balanced approach fostered intellectual curiosity, creativity, and critical thinking among students.
5. **Transmission of Cultural Heritage**:
Ancient Indian education played a crucial role in preserving and transmitting cultural heritage, traditions, and values through oral traditions, texts, and rituals. It served as a repository of knowledge that reinforced societal cohesion and identity.
6. **Influence on Global Education Systems**:

Ideas and educational practices from ancient India, such as the Gurukula system and contributions to mathematics and astronomy, influenced educational systems in neighbouring regions such as Southeast Asia, Central Asia, and the Middle East. The concept of universities (like Nalanda and Takshashila) also influenced the development of early centers of learning globally.

7. **Spiritual and Ethical Development**:

Education in ancient India placed a strong emphasis on moral and ethical development alongside intellectual pursuits. Concepts like Dharma (duty/righteousness) and Karma (action/consequence) were integral to the educational philosophy, fostering a sense of responsibility and ethical behavior among students.

8. **Continued Relevance**:

Many aspects of ancient Indian education, particularly its emphasis on holistic development, personalized learning, and the integration of spiritual and intellectual growth, resonate with contemporary educational philosophies like holistic education, personalized learning approaches, and mindfulness practices.

Ancient Indian education holds significant importance not only for its contributions to knowledge and sciences but also for its holistic approach to learning, moral values, and cultural transmission. It continues to inspire educational reforms and philosophies worldwide, reflecting its enduring impact on global intellectual heritage.

Objectives: -
The significance of ancient Indian education can be understood through several key objectives that shaped its development and enduring impact on Indian society and beyond:

1. **Transmission of Knowledge and Wisdom**:

   One of the primary objectives of ancient Indian education was the transmission and preservation of knowledge across generations. This included knowledge of scriptures, sciences (such as astronomy, mathematics, medicine), philosophy, arts, and literature. The Gurukula system facilitated direct mentorship from gurus to disciples, ensuring the continuity and deep understanding of traditional wisdom.

2. **Holistic Development of Individuals**:

   Ancient Indian education aimed at the holistic development of individuals, encompassing intellectual, spiritual, moral, and physical aspects. Education was not merely about acquiring academic knowledge but also about fostering virtues like humility, compassion, and self-discipline. This holistic approach aimed to cultivate well-rounded individuals capable of contributing positively to society.

3. **Preservation of Cultural and Spiritual Heritage**:

   Education in ancient India played a crucial role in preserving and perpetuating cultural and spiritual heritage. It upheld traditions, rituals, languages (especially Sanskrit), and philosophical concepts like Dharma (righteous duty) and Karma (law of cause and effect). This preservation ensured the continuity of cultural identity and societal values.

4. **Promotion of Ethical Values and Social Harmony**:

   Another objective was to install ethical values and principles that promoted social harmony and cohesion. Concepts like Ahimsa (non-violence), Satya (truthfulness), and Seva (selfless service) were integral to educational teachings. Education was seen as a means to cultivate responsible citizens who contributed positively to their communities and upheld moral integrity.

5. **Advancement of Knowledge and Innovation**:

   Ancient Indian education fostered an environment conducive to intellectual inquiry, critical thinking, and innovation. Scholars made significant advancements in various fields such as mathematics (inventing the decimal system, concept of zero), astronomy (accurate planetary positions), medicine (development of Ayurveda), and architecture (building techniques). These contributions laid foundations for future developments in science and technology.

6. **Influence on Global Education Systems**:

   The objectives of ancient Indian education extended beyond regional boundaries, influencing educational systems in neighbouring regions such as Southeast Asia, Central Asia, and the Middle East. Concepts like universities (Nalanda, Takshashila) and educational philosophies like the Gurukula system left a lasting impact on early centers of learning globally.

7. **Promotion of Social Mobility and Equality**:

   Education in ancient India was not restricted to a particular social class or gender. While access varied, depending on the time period and region, there were instances where education was open to individuals from diverse backgrounds. Education served as a means of social mobility, allowing individuals to rise above their circumstances through knowledge and skills.

The objectives of ancient Indian education were rooted in the transmission of knowledge, holistic development of individuals, preservation of cultural heritage, promotion of ethical values, advancement of knowledge and innovation, global influence on education systems, and promotion of social mobility. These objectives collectively contributed to the rich intellectual and cultural legacy of ancient India, shaping its societal values and influencing educational philosophies worldwide.

Evolution of ancient Indian education: -
The evolution of ancient Indian education is marked by a rich and diverse history that spans several millennia, characterized by significant developments in pedagogy, curriculum, institutions, and philosophical underpinnings. Understanding this evolution illuminates the profound significance of ancient Indian education:

Evolution of Ancient Indian Education:
1. **Vedic Period (1500 BCE - 500 BCE)**:
   - **Gurukula System**: Education during this period was primarily imparted through the Gurukula system, where students lived with their gurus (teachers) in an ashram-like environment. The curriculum included the study of Vedas, scriptures, rituals, philosophy, grammar (Vyakarana), and astronomy (Jyotisha).
2. **Buddhist and Jain Period (500 BCE - 500 CE)**:

- **Monastic Education**: With the rise of Buddhism and Jainism, monastic institutions (Viharas and Sanghas) became centers of learning. Education focused on moral teachings, philosophy, logic, ethics, and meditation, emphasizing non-violence (Ahimsa) and spiritual liberation.
3. **Mauryan and Gupta Period (300 BCE - 600 CE)**:
   - **Nalanda and Takshashila**: The Mauryan and Gupta empires saw the establishment of renowned universities such as Nalanda and Takshashila. These institutions attracted scholars and students from across Asia, offering advanced education in diverse subjects including mathematics, medicine (Ayurveda), literature, linguistics, and astronomy.
4. **Medieval Period (600 CE - 1200 CE)**:
   - **Islamic Influence**: With the advent of Islamic rule, educational institutions like madrasas emerged alongside traditional centers of learning. The curriculum expanded to include Persian and Arabic languages, Islamic theology, law (Sharia), and literature, while traditional subjects continued to be taught.
5. **Bhakti and Sufi Movements (1200 CE - 1700 CE)**:
   - **Devotional Education**: The Bhakti and Sufi movements emphasized devotion (Bhakti) and mystical experience (Sufism). Education included the study of religious texts, poetry, music, and philosophy, promoting spiritual unity and tolerance among diverse communities.

Significance of Ancient Indian Education:
1. **Intellectual Legacy**: Ancient Indian education laid the foundation for significant intellectual achievements in fields such as mathematics (concept of zero, decimal system), astronomy (accurate astronomical observations), medicine (Ayurveda), linguistics (Sanskrit grammar), and philosophy (Nyaya, Vedanta).
2. **Cultural Continuity**: Education played a pivotal role in preserving and transmitting cultural heritage, languages (especially Sanskrit), literature, arts, and rituals. It fostered a sense of cultural identity and unity among diverse communities across India.
3. **Philosophical Depth**: Education in ancient India integrated philosophical teachings with practical knowledge, emphasizing moral values (Dharma, Karma), ethics (Ahimsa), and societal responsibilities. This holistic approach aimed at nurturing balanced individuals capable of contributing positively to society.
4. **Global Influence**: The educational systems and philosophical ideas of ancient India, such as the Gurukula system and contributions to mathematics and astronomy, influenced educational practices and intellectual thought in neighboring regions like Southeast Asia, Central Asia, and the Middle East.
5. **Ethical Foundation**: Education promoted ethical values and principles that emphasized social harmony, compassion, tolerance, and respect for diversity. These values continue to resonate in contemporary Indian society and contribute to its pluralistic ethos.

In conclusion, the evolution of ancient Indian education underscores its profound significance in shaping intellectual thought, preserving cultural heritage, promoting ethical values, and influencing global educational systems. It serves as a testament to India's enduring legacy of learning and innovation, contributing to its rich cultural tapestry and global intellectual heritage

Relevance of ancient education in modern education system: -
The relevance of ancient Indian education in the modern education system lies in its enduring principles, holistic approach, and profound contributions to knowledge and human development. Here are key aspects highlighting the significance of ancient Indian education in today's context:

Significance of Ancient Indian Education in Modern Context:
1. **Holistic Development**:
   - **Integrated Learning**: Ancient Indian education emphasized a holistic approach that integrated intellectual, spiritual, moral, and physical dimensions. This resonates with modern educational philosophies advocating for a well-rounded education that nurtures all aspects of an individual's development.
2. **Ethical Values and Character Building**:
   - **Emphasis on Values**: Education in ancient India focused on imparting ethical values such as compassion, tolerance, non-violence (Ahimsa), and respect for diversity. These values are crucial in fostering responsible citizenship and ethical leadership in modern society.
3. **Cultural Preservation and Heritage**:
   - **Preservation of Heritage**: Ancient Indian education played a pivotal role in preserving and transmitting cultural heritage, languages (especially Sanskrit), literature, arts, and rituals. In today's globalized world, understanding and preserving cultural identity through education remains important for maintaining societal cohesion and pride.
4. **Knowledge Systems and Innovations**:
   - **Scientific Contributions**: Ancient India made significant contributions to mathematics (concept of zero, decimal system), astronomy (precise astronomical observations), medicine (Ayurveda), and philosophy. These contributions laid foundational knowledge that continues to influence and inspire modern scientific inquiry and innovation.
5. **Personalized and Mentorship-based Learning**:
   - **Gurukula System**: The Gurukula system exemplified personalized learning and mentorship, where students learned directly from gurus in an intimate, experiential setting. This model can inspire modern educational practices that prioritize individualized attention, mentorship, and student-centered learning approaches.
6. **Relevance in Global Education**:
   - **Influence on Global Thought**: Ideas from ancient Indian education, such as the concept of universities (Nalanda, Takshashila) and interdisciplinary learning, have influenced educational systems globally. They continue to inspire educational reforms aimed at fostering critical thinking, creativity, and lifelong learning skills.
7. **Spiritual and Emotional Well-being**:

- **Mind-Body Connection**: Ancient Indian education recognized the interconnectedness of mind, body, and spirit, promoting practices like yoga, meditation, and mindfulness. These practices are increasingly valued in modern education for promoting mental health, emotional well-being, and stress reduction among students and educators.

8. **Adaptation to Modern Challenges**:
   - **Integration of Traditional Wisdom**: Integrating insights from ancient Indian education can help address modern challenges such as sustainable development, ethical dilemmas in technology, and global citizenship. Drawing from traditional wisdom can provide ethical frameworks and perspectives to navigate complex societal issues.

The relevance of ancient Indian education in the modern education system lies in its enduring principles of holistic development, ethical values, cultural preservation, knowledge systems, personalized learning approaches, global influence, and adaptability to contemporary challenges. By recognizing and integrating these insights, modern education can enrich its curriculum, pedagogical practices, and educational goals to foster well-rounded individuals capable of contributing positively to a diverse and interconnected world.

Analysis of ancient education compared to modern education: -Comparing ancient Indian education to modern education reveals both similarities and differences, each contributing uniquely to the educational landscape. Here's an analysis highlighting their significance:

Ancient Indian Education:
1. **Holistic Approach**:
   Significance: Ancient Indian education emphasized holistic development, integrating intellectual, spiritual, moral, and physical dimensions. It aimed to cultivate well-rounded individuals capable of contributing meaningfully to society.
   Methods: Education was often imparted through personalized mentorship in Gurukulas, where students lived with gurus and learned through oral traditions, experiential learning, and direct engagement with texts and nature.
2. **Ethical and Moral Foundations**:
   Significance: Emphasis on values such as non-violence (Ahimsa), truthfulness (Satya), and duty (Dharma) aimed at shaping character and fostering social responsibility.
   Methods: Moral teachings were embedded in religious texts and philosophical discourses, emphasizing ethical conduct and societal harmony.
3. **Cultural Preservation**:
   Significance: Education played a crucial role in preserving and transmitting cultural heritage, languages (especially Sanskrit), literature, arts, and rituals.
   Methods: Institutions like Nalanda and Takshashila served as centers of learning that attracted scholars from across Asia, contributing to the diffusion of Indian cultural and intellectual traditions.
4. **Integration of Knowledge Systems**:
   Significance: Contributions to mathematics (decimal system, concept of zero), astronomy (accurate astronomical observations), medicine (Ayurveda), and philosophy influenced global knowledge systems.
   Methods: Scholars engaged in rigorous intellectual inquiry and debate, advancing scientific knowledge and philosophical discourse.

Modern Education:
1. **Specialization and Formalization**:
   Significance: Modern education emphasizes specialized knowledge and formalized curriculum structures aligned with academic disciplines and career pathways.
   Methods: Classroom-based learning, standardized testing, and accreditation systems ensure rigor and accountability in educational outcomes.
2. **Technological Integration**:
   Significance: Use of technology enhances teaching methods, access to information, and global connectivity in learning.
   Methods: Digital platforms, online courses, and interactive tools facilitate personalized learning experiences and educational equity.
3. **Critical Thinking and Problem-Solving**:
   Significance: Modern education focuses on developing critical thinking, analytical skills, creativity, and adaptability to address complex global challenges.
   Methods: Project-based learning, inquiry-based approaches, and STEM education promote practical application of knowledge and skills.
4. **Global Perspective and Diversity**:
   Significance: Emphasis on global citizenship, cultural awareness, and diversity prepares students for a interconnected world.
   Methods: International exchange programs, multicultural curricula, and inclusive education practices promote understanding and collaboration across borders.

Significance of Ancient Indian Education in Comparison:
- **Cultural Continuity**: Ancient Indian education emphasizes cultural preservation and values, providing a foundation for identity and societal cohesion.
- **Philosophical Depth**: Integration of ethics, spirituality, and moral teachings in ancient education enriches understanding of human values and social responsibility.
- **Holistic Development**: Focus on holistic development complements modern education's emphasis on specialized knowledge and skills.
- **Global Influence**: Contributions to knowledge systems in ancient India continue to inspire global intellectual discourse and interdisciplinary approaches in modern education.

In conclusion, while modern education has evolved with technological advancements and specialized disciplines, ancient Indian education's emphasis on holistic development, ethical foundations, cultural continuity, and global influence remains significant.

Integrating insights from both systems can enrich educational practices, fostering well-rounded individuals equipped to address contemporary challenges with a deep sense of cultural and ethical awareness

Conclusion

A holistic and multidisciplinary education will help develop well-rounded individuals that possess critical 21st-century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion, and debate; and rigorous specialization in a chosen field or fields. The influence of ancient education in the modern education system is tremendous. The emphasis on Indian Knowledge System, Value education, Yoga, and Skill based education is to develop psychological well-being through grit. The perceived grit in a person is highly influenced by psychological well-being, hence the focus on holistic education. Ancient education always focused on higher knowledge of self and knowledge of strength. Modern-day education emphasizes on this concept of self-awareness and skill development through experiential and multidisciplinary learning

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Abstract:
Ecosystem functions and services have been compromised by fast environmental changes and the continued loss of global biodiversity. Ecosystem monitoring and management are primarily concerned with the delivery of ecosystem functions and services under present environmental conditions. However, this could lead to ineffective management policies and an underestimating of biodiversity's importance. It is vital to maintain ecosystem processes and services in the face of major expected future environmental changes (i.e., resilience). We discover a collection of processes that support the robustness of ecosystem functioning across three ecological scales. Although it may be less important in the short term, biodiversity, which includes variation within species and across landscapes, can be critical to the long-term resilience of ecosystem functions and their underlying services. There are numerous approaches and case studies aimed at maintaining ecosystem resilience across diverse landscapes and riverine ecosystems as biodiversity increases and decreases. Linking the concept of ecosystem multi-functionality to ecosystem stability has the possibility to shift views on diversity's effects on ecological stability and improve in transforming this science into policy-relevant information.

Keywords: Ecosystem function, Biodiversity, ecosystem resilience, ecological system

Introduction
Adapting to environmental change presents several management and policy difficulties. For example, we must comprehend how resilient ecosystems are in terms of reducing the effects of outside forces. We also need to determine if they can bounce back from functional disruptions. Lastly, we need to have a basic grasp of the dynamics that ecosystems may display in the future due to modifications in external factors like pollution levels, climate, or land management techniques. Discussions surrounding the concept of "resilience" have collectively addressed the problems of ecosystem resistance and recovery.

Recent programs like the Millennium Ecosystem Assessment (MA) have brought attention to the importance of the resilience issue by demonstrating the connection between biodiversity and human well-being (MA, 2005). According to the MA's findings, there are increasing external pressures on ecosystems around the world due to factors like pollution, invasive species, land use change, and climate change. These pressures will have an effect on how well ecosystems function and how well ecosystem services are provided (Defra, 2007). Although the association between biodiversity losses and reduced resilience to and/or recovery from disturbances has not yet been established, there is growing concern in the broader academic and policy literatures (e.g. Loreau et al., 2002). Nonetheless, there is mounting evidence that resilience and biodiversity are intimately related. As a result, Isbell et al. (2009) have demonstrated that ecological stability can be supported by species diversity and more varied patterns of species interactions, which in turn can sustain the output of ecosystem services.

Ecosystem resilience (ER) has gained a lot of attention in ecological science, conservation management, and policymaking due to the necessity of maintaining ecosystem services in the face of substantial environmental change brought on by human activity and multiple recent regime upheavals [4]. Nonetheless, scientists have not yet come to an agreement over how biodiversity contributes to resilience. Some writers, like [7], even go so far as to say that managing ecosystems for resilience could be detrimental to biodiversity. Furthermore, several writers [9] have questioned the notion put out by ecosystem ecology pioneers, such as [8], that complexity guarantees ecosystem stability. It is crucial to remember that writers who examine the connection between resilience and biodiversity frequently concentrate on species richness, particularly on species diversity concurrently with the Convention on Biological Diversity.

Diversity of ecosystems and diversity within and between species are both components of biodiversity. Furthermore, according to Panarchy theory, it's critical to recognize the interdependence of ecological dynamics at many scales in order to comprehend ER [14]. Therefore, this paper's goal is to evaluate the empirical data that is now available and explore complexity mechanisms that ensure resilience at various biodiversity levels in order to highlight the critical role that biodiversity plays in ER. We'll also talk about the practical ramifications of comprehending biodiversity's numerous roles in ER.

The Importance of Resilience

Global conservation efforts have not been able to stop the loss of biodiversity [1], which will eventually affect a lot of the services that ecosystems provide [2]. Quantifying and predicting the geographical and temporal distribution of ecosystem functions and services is critically important to support environmental management in the face of competing land-use demands (see Glossary) [4-6]. Although there has been progress in this field, there is a significant problem with the way that the current environmental conditions—such as the climate, land use, and habitat quality—have been largely included into models and monitoring of ecosystem functioning. This disregards the requirement to guarantee the provision of resilient ecosystem functions, or the ability of vital ecosystem functions to continue operating in the face of various environmental disturbances that may arise in the near future. In order to improve environmental monitoring and management, the goal of this review is to identify the variety of processes that support the provision of resilient ecosystem functions. It is challenging to concentrate on the current state of the environment since circumstances in the future may differ significantly from those in the present (for example, a rise in the frequency of extreme weather occurrences). [7] and pollution [8]), which may consequently cause abrupt, nonlinear changes in the way ecosystem function is provided that are not anticipated by the models in use today.

Reactive management may be too delayed to prevent the ensuing functional deficiencies, which could have an influence on the welfare of society [9]. This issue can be compared to the difference between monitoring and correcting damage to avoid a bridge from collapsing in the first place, versus monitoring and determining whether the bridge actually collapsed and so requires rebuilding. Environmental scientists have endeavored to ascertain this "safe operating space" on a worldwide scale to guarantee that limits are not breached that would result in abrupt losses in ecosystem services [11]. There is a chance, nevertheless, that the regional and local evaluations of ecosystem functions and management recommendations that are now in place do not take these risk assessments into account. Because higher levels of biodiversity may be required to support similar levels of function under environmental change [18], even though relatively low levels of biodiversity can be sufficient to provide current function [12], this could lead to poor management advice and an underestimation of the importance of biodiversity. As a result, it's important to define robust ecosystem function traits and include them in management guidelines and predictive models.

Defining and Applying the Resilience Concept

The term "resilience" has multiple meanings in the social, ecology, and other sciences [19–21]. In ecology, the idea of "ecological resilience," which recognizes multiple stable states and the capacity of systems to withstand regime shifts and maintain functions—possibly through internal reorganization—has gradually replaced the earlier focus on the stability of ecosystem processes and the speed at which they return to an equilibrium state following disturbance (also known as "engineering resilience" or recovery). Although separate mechanisms may underlie recovery and resistance, and in certain situations there may be trade-offs between them, parts of both are included in recent definitions of resilience [24].

Nevertheless, depending on the timeframe in which a system is examined, some mechanisms can support both resistance and recovery (e.g., very rapid recovery can look like resistance). As a result, we view resistance and recovery as two complementary but linked facets of resilience in this context [25]. The idea of resilience has been extensively discussed theoretically and semantically, but our focus here is on developing measurements for practical uses. The species makeup of an ecosystem at any given time can define it [26], and a wealth of theoretical and experimental ecological literature focuses on community stability [16], which may have implications for resilience. Naturally, a community's species are crucial to the execution of numerous ecosystem tasks, which form the biological basis of ecosystem services [3]. But the resilience of ecological processes does not necessarily depend on the stability of species composition. In species communities, turnover may be precisely what makes resilient functioning possible. For instance, it is anticipated that warm-adapted species will proliferate in populations affected by climate change, whereas cold-adapted species will decrease [30]. Although management can slow the decline of cold-adapted species [31], their local extinction may often be inevitable [32].

Ecosystem functioning may be negatively impacted if certain species play significant roles, unless they are replaced by other species that fulfill comparable tasks. In fact, quite different community forms may accomplish comparable sets of tasks [33]. Thus, whereas an ecosystem's species composition is usually the focus of conservation efforts, ecosystem functions—rather than species composition—need to be robust in order to preserve ecosystem services (Figure 1). The notion of resilience that applies here is the extent to which an ecosystem's function can withstand or quickly recover from environmental disturbances, keeping it functioning above what is considered socially acceptable. This can be interpreted as the opposite of ecological "vulnerability" [34], or as resilience as it relates to ecosystem services [19]. In this context, resilience is associated with the stability of an ecosystem function as indicated by its continuity over time [35]. However, the utilization of a minimum threshold approach more precisely quantifies ecological function deficits that affect human welfare (e.g., [14]). It should be noted that while ecosystem managers will eventually want to take into account the suite of ecosystem functions supporting essential services in a given location, here we concentrate on the resilience of individual ecosystem functions, which may be appropriate for policy formulation (e.g., pollination resilience).

Threats to Ecosystem Functions

Although environmental change is not unusual—ecosystems have always experienced cyclical and ongoing changes—anthropogenic activities, such as land conversion, carbon emissions, disturbances to the nitrogen cycle, and the introduction of new species, are currently causing environmental change to occur at previously unheard-of rates and intensities [36]. Via environmental filtering and biotic interaction disruption, rapid alterations to the abiotic environment may modify local and regional species pools, resulting in modifications to the suites of characteristics and interactions that influence ecosystem functioning [39]. The timelines involved are often measured over years to decades, taking into account pertinent human involvement. The disturbances to the ecosystem could be of three types: temporary (drought), long-term (disease), or transitory (loss of habitat). Complex temporal patterns can be displayed by certain environmental stressors. For instance, short-term disturbances brought on by climatic extremes on top of long-term warming are included in the concept of climate change, with the possibility of abrupt shifts if tipping points are reached [40].

The availability of resilience-granting ecosystem features, which involve interacting mechanisms at several ecological scales, will determine how disturbances to the environment affect ecosystem functions (see the following section). The resilience and eventual temporal patterns in ecosystem function are determined by these processes, which also determine the nature of the functional response to environmental change and their rates in relation to the source of environmental change.

Mechanisms Underpinning Resilient Ecosystem Functions

While earlier research has tried to define resilient systems from a wide socioeconomic standpoint [20], in this work, we concentrate on the biological foundations of ecosystem functions' resilience in order to guide specific environmental management strategies. Many factors operating at different levels of biological organization—species, communities, and landscapes—are anticipated to influence how resilient ecosystem functions are to environmental change. Because of the interconnectivity of these ecological systems, modifications at one level can have a cascading effect on other levels within the same system. The distribution of effect and response traits, community structure, and composition are all impacted by the ways that particular species react to environmental change, for example, by mediating changes in population abundance and the interactions that ensue with other species [39]. These alterations can affect entire ecosystems, but the resilience of ecosystem function is influenced by the ecosystem context, which includes habitat connectivity and heterogeneity at the landscape level. Here, we offer a fresh evaluation of the data supporting the processes that sustain ecosystem functions' resilience across these ecological layers. The goal of our assessment is to increase overall resilience to a variety of key threats to ecosystem function.

Species-Level Mechanisms

Because of interactions between features, the makeup of the landscape, and the scale at which they experience environmental factors, species rarely suffer the same effects of environmental change [41]. The short- and long-term resilience of ecosystem services are determined by the differences in response within and between particular species. The five main species-level mechanisms are listed below, along with theories explaining how they could affect the resilience of ecological services.

Sensitivity to Environmental Change

The ability of different species to endure changes in their surroundings is attributed to a variety of physiological and behavioral adaptations known as response characteristics [43]. These characteristics exhibit both intraspecific and interspecific variance. People that possess characteristics that lessen their susceptibility to environmental changes will be more resilient to changes in the ecosystem [44]. For instance, the non-structural carbohydrate levels of trees influence their sensitivity to drought [44], which may have an impact on the resilience of the ecosystem services that trees offer (Table 1). Variations in sensitivity are also likely to be explained by broader suites of features, such as the plant resource economics spectrum [45].

However, keep in mind that sensitivity and intrinsic growth rates may be negatively correlated, with slower-growing species offering more resilient ecosystem services but having a reduced ability to rebound in the event of perturbation.

Intrinsic Rate of Population Increase

Generation time, mortality, and fecundity rates are among the associated variables that govern an organism's ability to expand quickly from low numbers. When environmental disturbances occur, species with a high intrinsic rate of growth either demonstrate resistance or recover from them more quickly [46]. This is especially true if population reinforcement takes place during the disturbance.

Table 1. Mechanisms underpinning the resistance and recovery of ecosystem functions to environmental perturbation.

Species (Intraspecific)	Community (Interspecific)	Landscape (Ecosystem Context)
Sensitivity to environmental change (RES)	Correlation between response and effect traits (RES)	Local environmental heterogeneity (RES)
Intrinsic rate of population increase (RES/REC)	Functional redundancy (RES/REC)	Landscape-level functional connectivity (RES/REC)
Adaptive phenotypic plasticity (RES/REC)	Network interaction structure (RES)	Potential for alternative stable states (RES/REC)
Genetic variability (RES/REC)	-	Area of natural habitat cover at the landscape scale (RES/REC)
Allee effects (RES/REC)	-	-

The acronyms RES, REC, and RES/REC denote the significance of individual mechanisms for resistance, recovery, or both.

Adaptive Phenotypic Plasticity

People are able to adapt their behavior or physiological responses to environmental changes in order to increase their chances of survival [43] and the resilience of ecosystem services. For instance, many ectoderms that function in temperatures near or over their physiological limits seem to depend on thermoregulatory activity as a vital survival mechanism [47]. Furthermore, adaptations may provide the flexibility to optimize resource acquisition and growth rates in response to altered environmental conditions, facilitating a quicker recovery of the population and the restoration of ecosystem function.

Genetic Variability

A population is more likely to have genotypes that are tolerant of a particular environmental perturbation when there is greater adaptive genetic variation in the population [18]. This increases ecosystem function resistance [49] and lessens the effects of environmental disturbances on populations [48, 49]. Furthermore, higher population recovery rates are anticipated to result in improved function recovery rates due to the persistence of tolerant genotypes locally [48]. Standing genetic variation may contain adaptive genotypes, and this is more likely at larger effective population numbers. As an alternative, they may originate locally as a result of immigration from other populations or mutation [18]. Additionally, it is becoming more and more clear that ecologically significant traits might exhibit heritable variation due to epigenetic effects [51].

Allee Effects

Allee effects increase a population's susceptibility to environmental disturbances that might cause crashes from which recovery is arduous [52]. Due to factors like restricted ability to engage in cooperative activities, inability to avoid predators, or difficulty finding mates, certain species are more vulnerable to Allee effects.

Community-Level Mechanisms
The biological community's structure and composition, in addition to an individual's tolerance and flexibility, play a crucial role in the resilience of ecosystem services. We have listed the three main supporting mechanisms below.

Correlation between Response and Effect Traits
Less resilient ecosystem functions will result if the degree of a species' population loss after an environmental disturbance (mediated by response characteristics) is positively connected with the size of the species' impacts on an ecosystem function (via effect traits) [54]. This could happen if traits mediate both response and effects, or if traits indirectly associate with one another. Because structure and function are limited by biophysical constraints, correlations and trade-offs are likely a typical feature of features [55]. Body size, for instance, has been connected to both response traits (sensitivity to environmental change) and effects traits (maintenance of ecosystem services), such as bee pollination [56], dung beetle recycling of nutrients [58], and predatory invertebrate control [59].

In contrast, as responses of species to environmental change are dissociated from their effects on function, entirely uncorrelated response and effects traits lead to higher resilience in ecosystem function [56]. For instance, Diaz et al. [39] compile a number of research that indicate that there is no relationship between a plant's ability to decompose—a feature that affects soil fertility and nutrient cycling—and its ability to persist in the seed bank, which is a property that responds to disturbances brought on by intensified agriculture.

Functional Redundancy
The resistance of an ecosystem function will be higher if various species demonstrate different reactions to environmental perturbations when they perform comparable activities (i.e., when species exhibit some redundancy in their contributions to ecosystem processes) [61]. This results in the "insurance effect" of biodiversity [62], which has strong theoretical and empirical support [16]. One of the underlying mechanisms is a statistical effect that leads to higher resistance ('portfolio effects') when averaging across independently fluctuating species populations. This effect is further amplified when species' population sizes exhibit negative spatial and/or temporal covariance (asynchrony) due to varying responses to environmental change or competition [62].

Continuous or categorical features (e.g., complementing effect qualities, such as sward- and ground-active predators for pest management [63]) might modulate the functional roles of species. Increased resistance results from having more species overall (assuming that response traits vary) as well as from evenly distributing those species throughout the effect-trait space. In actuality, there can also be intraspecific variation in traits; in cases when this is significant in comparison to interspecific variation, it may be pertinent to take individual dispersion and redundancy into account across the effect-trait space [64].

Network Interaction Structure
The majority of the theoretical and empirical research mentioned above focuses on organisms that belong to a single trophic level, although interactions between species, such as mutualism, parasitism, and predation, can have a significant impact on how a community reacts to environmental change [65]. In interaction networks, the loss of highly linked species can lead to extinction cascades and decrease network stability [66]. The resistance of the ecosystem services these species offer will be poor if they are especially vulnerable to environmental change [69]. Response and effect qualities that are coupled and structured in networks along extinction cascades will have a bigger impact on ecosystem function. For instance, body size is associated with the probability of extinction as well as the ability of some taxa, such as pollinators and pesticides, to perform ecosystem services [70].

Generally speaking, compared to networks dominated by strong specialized interactions, densely connected nested networks dominated by generic interactions are less vulnerable to cascade extinction effects and provide more resilient ecosystem functions [72].

The effects of species loss are expected to affect the number of surviving species, which means that the provision of ecosystem function can be largely predicted by the existence or absence of density compensation after species loss [73]. For instance, species loss from atmospheric nitrogen deposition may occur in some plant communities; yet, density compensation of surviving species may sustain net primary output.

Landscape-Level Mechanisms
The above-discussed intraspecific and community-level mechanisms are impacted by the local site's environmental context as well as the larger landscape. The abiotic environment, which can alter the effects of environmental disturbances on individuals and communities, as well as the local and regional species pool, are determined by the landscape context.

Local Environmental Heterogeneity
By (i) enabling the persistence of individual species under environmental perturbations by providing a range of resources and a microclimatic refuge [78] and (ii) increasing overall species richness [79] and, consequently, functional redundancy, spatial heterogeneity can improve the resilience of ecosystem functions. These heterogeneity impacts can be seen at three different scales: small, as in the case of vegetation structural diversity [75], medium, as in the case of top edaphic diversity [76], and large, as in the case of diversity of land cover types [78]. Furthermore, it has been demonstrated that environmental variety between sites (fostering beta diversity) raises the stability of ecosystem functioning [27].

Landscape-Level Functional Connectivity
According to meta population theory, populations in landscapes with high connectivity will either recolonize more quickly or survive longer after an environmental disturbance (the so-called "rescue effect"). Research supporting this theory includes field research conducted at the landscape level [83] and microcosm experiments [81]. Experiments have demonstrated that connectedness improves community recovery following local perturbations, and this hypothesis also applies to metacommunities [84]. The mechanism known as "spatial insurance" [86] has been demonstrated in a few instances when the recovery of community structure through dispersal results in the restoration of ecosystem functioning to pre perturbation levels, including productivity and carbon sequestration.

Area of Natural Habitat Cover at the Landscape Scale
Greater range and quantity of resources are typically provided by bigger regions of natural or seminatural habitat, which not only improves functional connectivity for specific species but also encourages higher species richness and larger population sizes for each

species [88]. More genetic variety and functional redundancy will result from this, which will help ecosystem functions become more resilient [61].

Potential for Alternative Stable States

Alternative stable states are linked to hysteresis, tipping points, and rapid changes in ecosystems, all of which put conventional methods of managing ecosystems in jeopardy [89]. Internal feedback processes within ecological states provide resistance to ecosystem functions, hence maintaining ecosystem stability. Disturbances in the ecosystem, however, may make it more likely that a regime shift will occur and that the assemblages of species performing roles may fundamentally alter. Near these key tipping points, systems may be more vulnerable to brief perturbations and environmental stochasticity, which could result in abrupt shifts to a new equilibrium [53]. The ability of an ecosystem to recover from some alternative stable states that are unfavorable to ecosystem functions may be limited. Hysteresis, which is the process of returning to earlier conditions by extensive and expensive management interventions, may be necessary. Alternative states are documented in a wide variety of ecosystems from local to global scales, although how stable and persistent these are remains uncertain [91].

Managing for Resilience

Applied Ecosystem Management

It is starting to happen that key land-management programs—like the EU Common Agricultural Policy and REDD+—integrate ecosystem services. Nevertheless, these programs fall short in terms of measuring, tracking, and directly managing the resilience of ecosystem functions [92]. According to the ecological theory and empirical data covered above, a variety of factors will influence an ecosystem's resilience. Which will matter more in determining resilience in specific roles or ecosystems is still unknown. It is obvious that certain factors—like genetic variability at the population level and landscape structure—will be easier to manage than others. (e.g., environmental sensitivity of specific species, presence of alternative stable states). Furthermore, trade-offs and synergies between resilience and ecosystem functions' short-term performance are possible [93].

Synergies and Trade-Offs with Short-Term Performance

There are times when there are benefits to both the long-term resilience and the short-term performance of ecosystem functions. For instance, richness of species is linked to higher function levels in the current environment because of complementarity [13] and to higher function resilience because of increased functional redundancy [54]. In these situations, management that prioritizes immediate results will also improve resilience. Trade-offs, however, may arise in different situations. For instance, the goal of producing the "best locally adapted phenotype" may clash with the preservation of genetic variety for the robustness of ecosystem services [49]. Currently, a lot of intense agricultural management concentrates on these low-diversity systems, which may be less resilient yet yield high amounts of provisioning services [93].

Moreover, habitat variability can, in the near term, decrease the availability of particular habitats needed by critical species, even though it can help species persist through climatic extremes [78]. Resilience may be hampered in these situations by short-term intervention aimed at higher levels of ecosystem performance.

Measuring and Monitoring Resilience

Although long-term resilience in Earth systems management is acknowledged, reporting on ecosystem services has emphasized the short term [92]. Thus, creating reliable and affordable indicators of the resilience of ecosystem services and functions is a challenge (Table 1). Research on the availability of current data, the viability of data collecting, and the validation of indicator metrics are required in order to build indicators. Significant interdisciplinary research with the socioeconomic sciences will also be needed for the subsequent implementation of resilience indicators to inform environmental management; this research will be needed, for example, to determine target suites of ecosystem functions in various areas and to set socially acceptable minimum thresholds for functions. Finding and balancing trade-offs between the resilience of several functions will be another difficulty. Such research, however, is essential to safeguard the provision of ecosystem functions under the significant environmental perturbations expected within the next century.

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Type: General Review

Abstract
Mahatma Gandhi National Rural Employment Guarantee Act is a program launched by Government of India as a measure to fight with rural un employment and poverty. The scheme was lunched for the first time in 2005 and was started on 2 February 2006 in country including Chhattisgarh. In Chhattisgarh the scheme was started in three phase. In first phase MNREGA was started in 11 districts then in second phase it was extended to 4 more districts and in third phase scheme was extended to remaining districts. MNREGA provides a minimum of 100 days f job to job card holders under the scheme from 2013-14 an additional 50 days job is provided by the state government the expenditure of extra work days are born by state government solely. The present paper is an attempt to examine the impact of MNREGA in rural employment, women empowerment. The study in present paper is based on secondary data available in MNREGA official site , study shows that MNREGA plays a vital role in employment generation in rural area for male , female and divyang it not only helps in creation of employment but is also sustainably creating assets in rural areas such as ponds, gardens etc .

Key Words- Employment, Poverty, Women Empowerment.

Review of literature –
1.)   The paper by Heya shah To what extent did the MNREGA impact women in rural areas (2021) author has compared various research papers on the implementation of MNREGA and found that MNREGA resulted in reduction in gender pay gap ,its impact was more in women than ST,SC or male in order of economic benefits, increase in education ratio of their children but also created domestic violence against women more prone as in some states they did not have access to their accounts and in some states like Bihar male members of family restricts them from going out them for work.
2.)   In paper by anas khan and lamaan shami (2016),authors have done empirical study to examine the impact of MNREGA on employment generation in selected economic backward districts of Indi for study a sample of 30 villages were taken and data were collected by personal interview regression analysis and correlation analysis methods were used to test the significance of hypothesis .Major findings of paper are ,MNREGA significantly created employment in selected rural areas and generated income it also changed the consumption pattern in selected districts.
3.)   Mukesh Chahal and Pradeep Kumar In their paper have evaluated impact of MNREGA on employment generation in Haryana by secondary data collected from various articles and news papers. In paper it was found that MNREGA is playing a significant role in employment generation in rural Haryana specially for women. The scheme is not only enhancing employment generation but also in environment protection by using sustainable ways to development. 100 days job is being created by the scheme per year since the inception of scheme.

Introduction
In India about 70 percent people depends on agriculture as their primary source of income where almost all members of family participate in farming that looks like all the members are employed but that is actually disguised un employment. Country also lacks skilled labors to cope with many job requirements which also leads to un employment as well as poverty. In order to uplift the rural conditions MNREGA was introduced on 2 February 2006 to ensure at least 100 days employment to unskilled labors in rural India. The Mahatma Gandhi National Employment Scheme creates a sense of group responsibility as well as unity and is ensuring to fulfill dream of Mahatma Gandhi ji's dream of panchayati raj system .it also provides legal entitlements to the job seekers through this act and non-compliance of such provisions will be considered as offence .several rights are provided under the act for job seekers such as -:
1.   Right to get a job card.
2.   Right to demand and receive work.
3.   Right to get unemployment allowance.
4.   Right to plan and prepare projects.
5.   Right to conduct social audit of expenditures of the act.
6.   Right to be aware of wage rate.
7.   Right to get facilities in site.

Objectives of MNREGA-Followings are the objectives of MNREG Act-
1.   To provide at least 100 days job to rural unskilled labors

2. To generate employment within 15 days of getting application from a job card holder.
3. To enhance job security in rural area.
4. To help in sustainable development.
5. To create assets using local resources.

Objectives of study –
1. To examine the impact of Mahatma Gandhi National Rural development Program on employment generation in Chhattisgarh.
2. To examine the expenditures under the scheme.

Research Methodology

Research methodology is a set of procedure and technique in order to select, process and analyze and evaluate overall reliability of study Basically there are 7 types of research methods which includes,- observation, survey method ,interviews , focus groups, experiments, secondary data analysis and mixed method. This paper is based on secondary data availed from the official site of MNREGA from 2018-2023.

About Chhattisgarh

The state Chhattisgarh also known as Dhan ka Katora is a land lock state surrounded by Orrissa, Uttar Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Andhra Pradesh and Telangana. Having abundance of natural resources such as coal, iron ore, tin etc. The state came into existence on 2 November, 2000 as 26th state .The states area is about 135192 km square which is around 2.11 percentage of the total area of the nation and population is about 25545198 as per the census report of 2011 .The states estimated GDP for financial year 2023-24 is around 5.09 lakh crore which amounts to growth of 11.2 percent from 2022 .

Employment generated for Divyang job card holders

From 2015-16 appropriate jobs like irrigation of plants in garden or in construction site as per the comfort level of divyang jan is being provided under the scheme to ensure job creation for them. The number of persons got the employment under the scheme from 2018-2022 is as under.

Year	Number of divyang jan
2018-19	30,119
2019-20	30,103
2020-21	35,598
2021-22	32,757
2022-23	20,957

Number of divyang jan
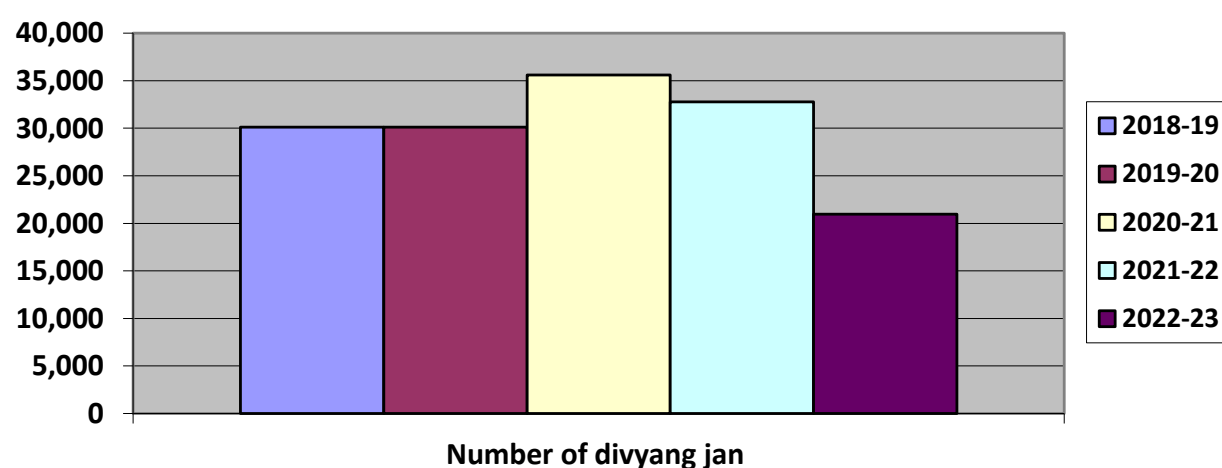
Provision of additional 50 days job

In Chhattisgarh a provision of additional 50 days employment for Van Adhikar Patra Dharak is granted by the state government expenditure of which is born by the state government. the provision came into existence in 2013-14.

Year	Amount Spent (in lakhs)
2018-19	5,870
2019-20	17,771.66
2020-21	19,112.81
2021-22	26,867.19
2022-23	5,000

Amount Spent (in lakhs)
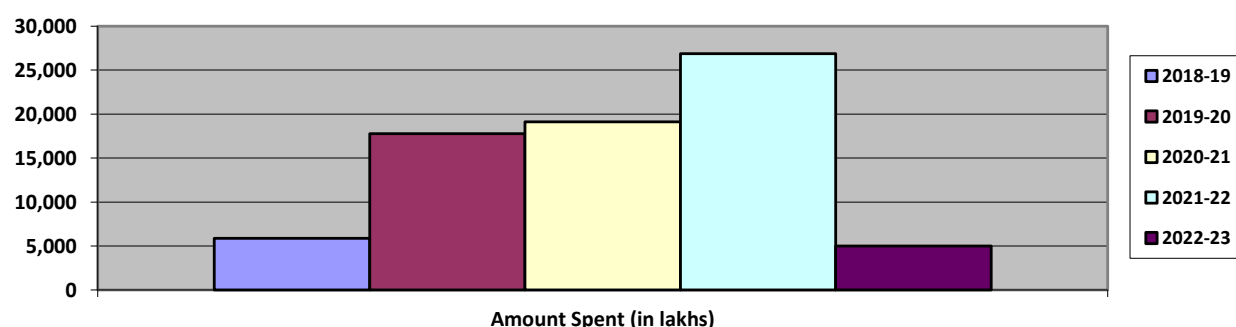
Interpretation- From the above table it is found that from 2018-2022 there is an increase in expenditure from 2018 to 2021 whereas in 2022 additional expenditure was decreased as compared to past 4 years.

Number of persons days created by scheduled tribe and scheduled caste category (in lakhs)

Year	Total person days	St persons days	Sc person days
2018-19	1100.00	508.78	133.87
2019-20	668.688	25.594	4.2214
2020-21	1841.02	998.99	169.51
2021-22	1560.12	897.288	148.38
2022-23	1325.15	507.25	113.70
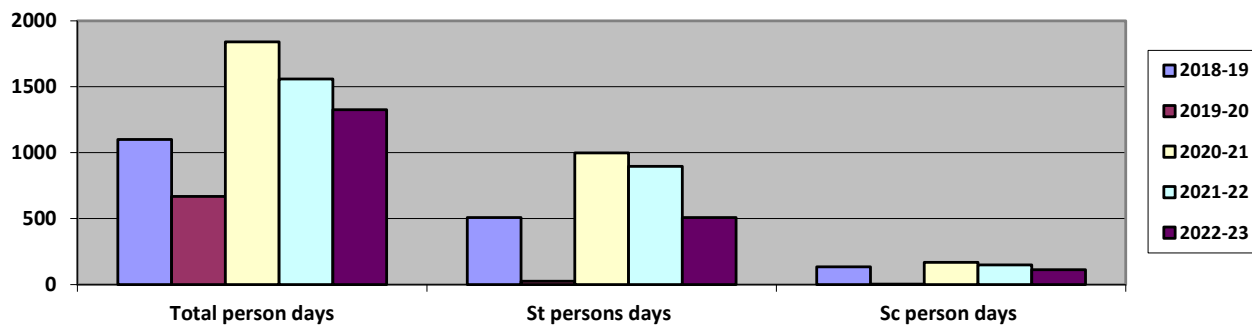
Interpretation- as seen in the above table every year according to the number of applications received by each category number of job days at the rate of minimum 100 days per year is being generated by the scheme. The total persons days and category wise persons days is based on the number of applications received each year.

Allocation of expenditure from 2018-2022

Financial Year	Total Fund	Expenditure	% of expenditure
2018-19	3202.31	3106.22	97
2019-20	3142.17	2932.78	93
2020-21	4538.84	4419.35	97
2021-22	4548.89	3911.00	86
2022-23	4403.99	3720.01	84
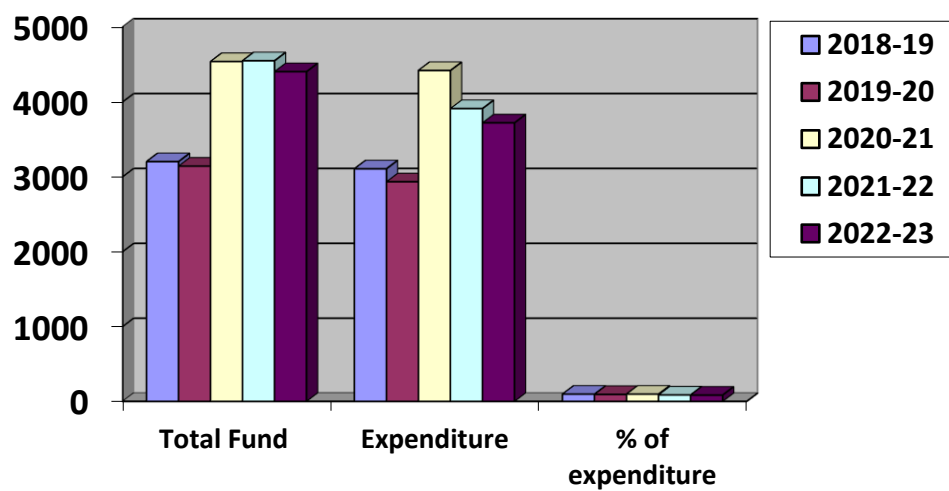
Interpretation- From the above chart it can be seen that in year 2018-19 total available fund was 3202.31 rupees out of which 97% fund was used in MNREGA and in 2022-23 total fund available was 4403.39 rupees out of which 84% fund was used. During this five year interval a fluctuation can be noticed in use of available fund.

Expenditure on Labour during 2018-2022

Financial Year	Available Fund	Labour Expenditure	%of labour expenditure
2018-19	3202.31	2343.16	79
2019-20	3142.17	2199.31	79
2020-21	4538.84	3493.34	82
2021-22	4548.89	3009.17	80
2022-23	4403.99	2565.26	72
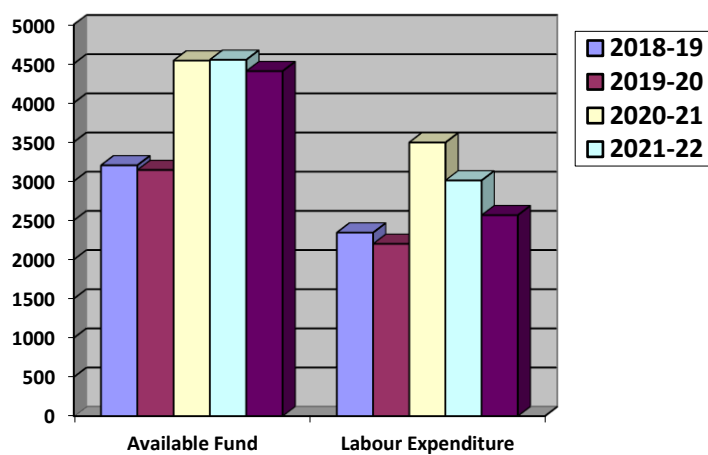
Interpretation- From the above table it is found that labour expenses during 2018-19 were 79% of the total expenditure whereas it was lowered down to 72% during 2022-23.

Expenditure on Material from 2018-2022

Year	Total Fund	Material Expenditure	% of Material Expenditure
2018-19	3202.31	611.59	21
2019-20	3142.17	582.67	21
2020-21	4538.84	761.66	18
2021-22	4548.89	746.41	20
2022-23	4403.99	999.51	28
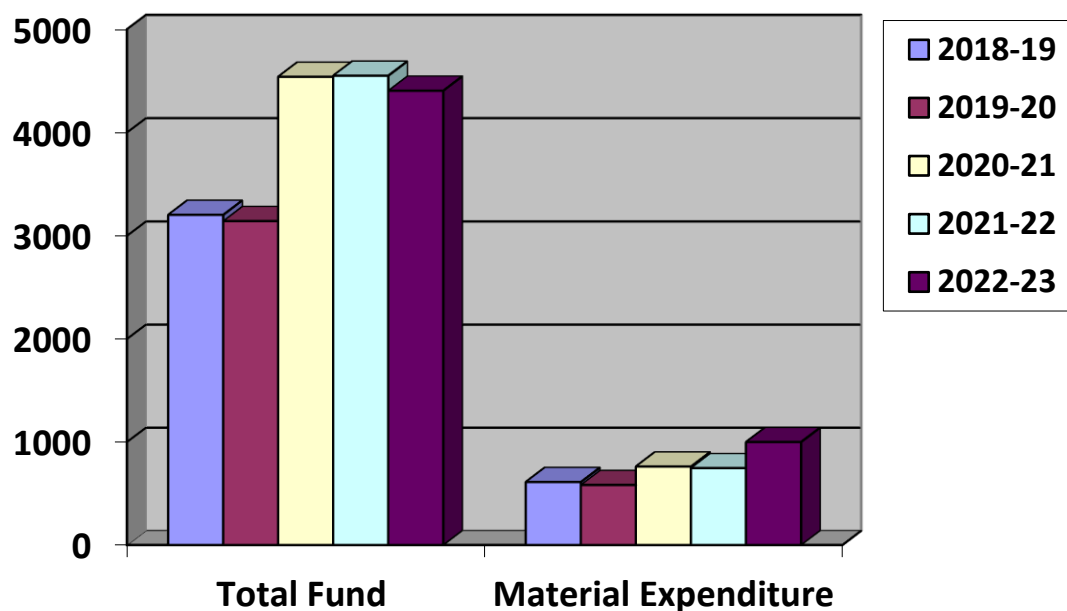
Interpretation-from the above table it is found that during 2018-19 % of exenditure on material was 21% which increases to 28% during 2022-23.

MNREGA(Mahatma Gandhi Rural Employment Guarantee Program) Impact on Women Empowerment.
MNREGA also helped in empowerment of rural women as most of the labours engaged in this program are women only so this program created an opportunity for women of state to actively participate in emplyment works.
Total work days (created by women) in lakh

Year	Total human days	Total days created by women	% of days created by women
2018-19	1386.04	693.72	50
2019-20	1361.77	690.44	51
2020-21	1840.92	929.60	50
2021-22	1692.36	866.996	51
2022-23	1325.15	705.00	53
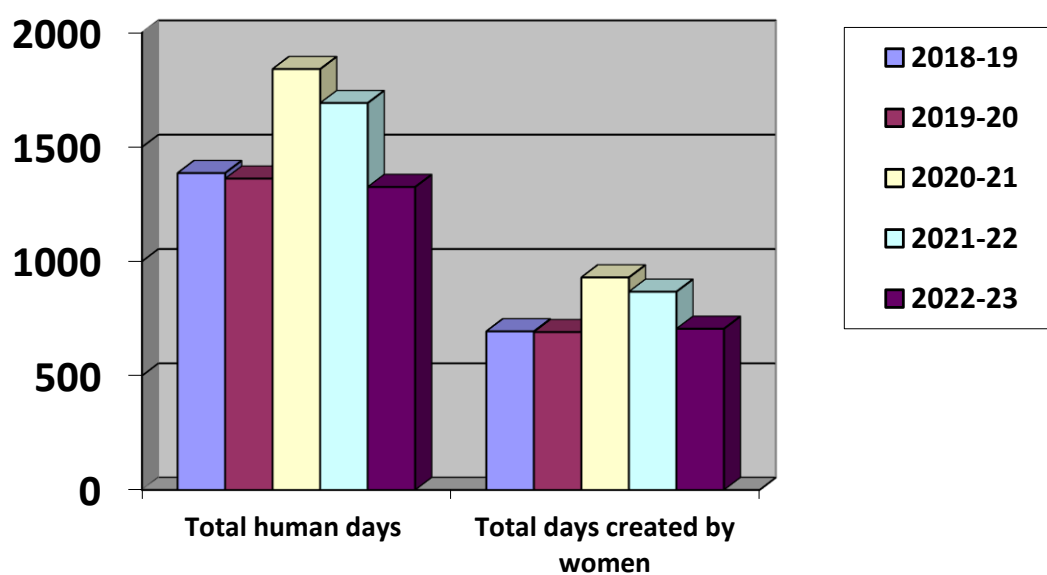
Interpretation – It can be seen from above table that every year during 2018-2022 on an average 50% women got the employment which helps them to become economically independent and encourages their empowerment.

Provision of Maternal Allowance to labors.
From 2013-14 a provision to grant maternal allowance to new mothers is being made by the Government which is solely born by the state government. Past five years data of the allowance is given under the below table.

Table showing Maternal Allowance paid in lakh

Year	Number of Women	Amount paid
2018-19	922	48.04
2019-20	632	33.18
2020-21	950	51.39
2021-22	1153	66.20
2022-23	727	42.70

Interpretation- From the table given it is found that maternal allowance is granted as per the numbers of women eligible for the provision and every year eligible women are getting benefit of the scheme.

Conclusion

MNREGA is one of the largest rural development program where a minimum of 100 days job guarantee is given under the act and after getting application regarding job by job card holders it is essential to provide job within 15 days of receiving application. Here in Chhattisgarh extra 50 job days are provided by the state government from 2013-14 the burden of which is born by the state Government. Moreover, appropriate jobs which is easy to perform by physically disabled persons are also created so they can equally take the advantage of scheme. somewhat the scheme is also helping in women empowerment in rural areas as in this scheme on an average 50% women are participating every year to encourage them maternity allowance is also provided to the job card holders. Job card holders are employed in developmental works such as small irrigation work. Construction of play ground , reconstruction of roads ,construction of shelter for animals etc .so it can be concluded that MNREGA is not only helping in creation of employment to rural people but also is a helping hand in making sustainable development of village.

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Abstract

This study investigates the effects of diversity on organizational outcomes, including innovation, creativity, and financial performance. Using a mixed-methods approach, we analyzed data from a sample of 200 organizations across various industries. Our results show that organizations with higher levels of diversity (gender, ethnic, and cognitive) exhibit improved innovation, creativity, and financial performance. Specifically, we found that:
- Diversity is positively correlated with innovation ($r = 0.4$, $p < 0.01$)
- Diverse teams generate more creative solutions ($t = 2.5$, $p < 0.05$)
- Organizations with diverse workforces outperform homogeneous ones in terms of financial performance ($t = 3.2$, $p < 0.01$)

Our findings suggest that fostering diversity is essential for organizations seeking to enhance innovation, creativity, and financial success. We discuss implications for HR practices, leadership development, and organizational culture.

Keywords: diversity, innovation, creativity, financial performance, organizational outcomes.Fostering Inclusion and Social Change

Diversity organizations play a crucial role in promoting inclusivity, equity, and social justice. This paper explores the significant impact of these organizations on individuals, communities, and society as a whole. Through their advocacy, education, and community- building efforts, diversity organizations break down barriers, foster innovation, and empower underrepresented voices. By addressing systemic inequalities and promoting representation, they contribute to a more just and equitable society. This abstract highlights the key effects of diversity organizations, demonstrating their vital role in shaping a more inclusive and compassionate world.

Keyword: -Inclusion, Innovation, Creativity, Collaboration, Employee Engagement

Introduction

In today's globalized and rapidly changing business landscape, organizations are increasingly recognizing the importance of diversity in driving innovation, creativity, and financial success. Diversity, in all its forms - gender, ethnic, cultural, cognitive, and more - has become a critical component of organizational strategy, as companies seek to tap into the unique perspectives, experiences, and skills of a diverse workforce.

As the world's population becomes increasingly interconnected, organizations that embrace diversity are better positioned to attract top talent, foster innovation, and expand into new markets. Moreover, diversity is no longer just a social responsibility or moral imperative; it has become a business imperative, essential for organizations seeking to stay competitive and relevant in a rapidly shifting global economy.

Despite the growing recognition of diversity's importance, many organizations still struggle to effectively manage and leverage their diverse workforces. Barriers to inclusion, unconscious bias, and lack of diversity in leadership positions continue to hinder organizations from fully realizing the benefits of diversity.

This study aims to investigate the impact of diversity on organizational outcomes, including innovation, creativity, financial performance, and employee engagement. By exploring the complex relationships between diversity, inclusion, and organizational success, we hope to contribute to a deeper understanding of how organizations can harness the power of diversity to achieve business success and social responsibility

"Diversity organizations play a vital role in promoting inclusivity, equity, and cultural awareness in various settings, such as workplaces, communities, and societies. These organizations strive to create environments where individuals from diverse backgrounds, cultures, races, genders, sexual orientations, ages, and abilities feel valued, respected, and empowered to thrive. By fostering diversity, equity, and inclusion, these organizations have a profound impact on individuals, teams, and organizations as a whole, leading to increased innovation, creativity, and success. In this discussion, we will explore the significant impact of diversity organizations and how they shape our world."

Innovation

Inclusion is a vital aspect of the impact of diversity in organizations. When organizations prioritize inclusion, they create an environment where diverse

individuals feel valued, respected, and empowered to bring their authentic selves to work.

This leads to a sense of belonging, engagement, and motivation, resulting in increased innovation, creativity, and productivity. Inclusive organizations recognize and celebrate diverse backgrounds, experiences, and perspectives, fostering a culture of empathy, understanding, and collaboration. By promoting inclusion, organizations can tap into the unique contributions of all employees, leading to better decision-making, improved customer satisfaction, and enhanced reputation. Inclusion is not just a moral imperative, but a business necessity for organizations that want to stay competitive, attract diverse talent, and drive business success. By creating a culture of inclusion, organizations can unlock the full potential of their diverse workforce, leading to greater innovation, creativity, and business growth.

Inclusion is a crucial aspect of the impact of diversity in organizations. It refers to the creation of an environment where all individuals feel:

Creativity

Creativity is a key beneficiary of diversity in organizations. When diverse individuals come together, they bring unique perspectives, experiences, and ideas that combine to form innovative solutions. Diversity of thought and approach fosters a creative environment, encouraging experimentation, risk-taking, and artistic expression. As a result, organizations that embrace diversity are better equipped to:

- Generate novel solutions to complex problems
- Develop innovative products and services
- Enhance customer experiences
- Stay ahead of the competition
- Drive business growth and success

Diversity unlocks creativity, leading to new ideas, products, and services that drive business success and competitiveness. By embracing diversity, organizations can tap into the creative potential of their workforce, leading to a more innovative, agile, and successful organization.

Innovation

Innovation is a direct outcome of diversity in organizations. When diverse minds come together, they share unique perspectives, experiences, and ideas that lead to groundbreaking solutions. Diversity of thought and approach fosters a culture of innovation, encouraging experimentation, risk-taking, and creative problem-solving. As a result, organizations that embrace diversity are better equipped to develop innovative products, services, and processes that drive business growth and success. By leveraging diversity, organizations can tap into the collective genius of their workforce, leading to new discoveries, improved customer experiences, and a competitive edge in the market.

Innovation fueled by diversity enables organizations to stay ahead of the curve, adapt to changing market conditions, and achieve sustained success. By embracing diversity, organizations can unlock the innovative potential of their workforce, leading to a more agile, adaptable, and successful organization.

Collaboration

Collaboration is a vital outcome of diversity in organizations. When diverse individuals come together, they share their unique perspectives, skills, and experiences, leading to more effective and efficient teamwork. Diversity fosters a collaborative culture, encouraging active listening, open communication, and constructive feedback. As a result, organizations that embrace diversity can tap into the collective expertise of their workforce, leading to better problem-solving, decision-making, and innovation. Collaboration fueled by diversity enables organizations to leverage the strengths of individual team members, foster a sense of community and belonging, and achieve common goals. By promoting diversity and collaboration, organizations can create a work environment that is inclusive, engaging, and productive, leading to improved employee satisfaction, retention, and overall business success. By harnessing the power of diverse perspectives and experiences, organizations can unlock the full potential of their teams and achieve remarkable results.

Employee Engagement

Employee engagement is a critical outcome of diversity in organizations. When employees feel included and valued, they are more likely to be engaged, motivated, and committed to the organization. Diversity fosters a sense of belonging, leading to higher levels of employee engagement, job satisfaction, and productivity. Employees who feel heard, seen, and respected are more likely to go above and beyond, driving business results and innovation. In diverse and inclusive organizations, employees are more likely to feel a sense of purpose, be more resilient, and have better well-being. Engagement fueled by diversity enables organizations to tap into the full potential of their employees, leading to improved retention, reduced turnover, and increased competitiveness. By creating a culture of inclusion and diversity, organizations can unlock the full potential of their employees, driving business success and growth.

Talent Acquisition

Talent acquisition is a significant benefit of diversity in organizations. By fostering a culture of inclusion and diversity, organizations can attract top talent from a wide range of backgrounds and experiences. Diversity-minded candidates seek out employers that value and celebrate individual differences, leading to increased interest and engagement from high-caliber candidates. Organizations that prioritize diversity are better positioned to attract the best and brightest, regardless of race, gender, age, or background. This leads to a more skilled and innovative workforce, driving business success and competitiveness.

Moreover, a diverse workforce can help organizations tap into diverse markets, customers, and perspectives, further enhancing their reputation and attractiveness to top talent. By embracing diversity, organizations can establish themselves as employers of choice, attracting the best talent and setting themselves up for long-term success.

Retention

Retention is a critical outcome of diversity in organizations. When employees feel included, valued, and respected, they are more likely to stay with the organization long-term.

Diversity and inclusion initiatives lead to increased employee satisfaction, engagement, and commitment, resulting in reduced

turnover rates and improved retention. Employees who feel a sense of belonging and connection to the organization are more likely to remain with the company, reducing recruitment and training costs. Moreover, diverse and inclusive organizations foster a sense of community and support, encouraging employees to stay and grow with the company. By prioritizing diversity and inclusion, organizations can create a work environment that supports and develops employees, leading to improved retention rates, increased productivity, and enhanced business performance. By retaining diverse talent, organizations can leverage their unique perspectives and experiences, driving innovation and business success.

Information about Education in Impact of Diversity in Organisation
Education is a vital aspect of the impact of diversity in organizations. By promoting diversity and inclusion, organizations can:
1. Provide training on unconscious bias, cultural competence, and inclusive leadership.
2. Offer diversity and inclusion workshops, seminars, and conferences.
3. Create employee resource groups for diverse communities.
4. Develop mentorship programs that pair diverse employees with leaders.
5. Implement diversity and inclusion metrics and benchmarks.
6. Provide language training and cultural adaptation support for international employees.
7. Celebrate diverse holidays, events, and cultural traditions.
8. Develop inclusive policies and practices that support diverse employees.
9. Provide education on disability awareness, mental health, and well-being.
10. Create a diverse and inclusive curriculum for employee development and growth.

Education in diversity and inclusion helps organizations to:
1. Enhance employee knowledge and awareness.
2. Foster a culture of inclusion and respect.
3. Improve employee engagement and retention.
4. Increase diversity in hiring and promotion.
5. Enhance reputation and brand.
6. Improve customer satisfaction and loyalty.
7. Increase innovation and creativity.
8. Enhance decision-making and problem-solving.
9. Improve employee well-being and mental health.
10. Comply with legal and regulatory requirements.

By investing in diversity and inclusion education, organizations can create a workplace culture that values and celebrates diversity, leading to improved business outcomes and social responsibility.

Impact of Diversity in Organisation by Government
Governments can have a significant impact on promoting diversity in organizations through various policies and initiatives, such as:
1. Anti-discrimination laws: Enacting laws that prohibit discrimination based on race, gender, age, religion, and sexual orientation.
2. Diversity and inclusion initiatives: Launching programs that promote diversity and inclusion in the workplace, such as training and education initiatives.
3. Quotas and targets: Setting quotas or targets for diverse representation in organizations, especially in leadership positions.
4. Procurement policies: Encouraging organizations to work with diverse suppliers and contractors.
5. Funding and grants: Providing funding and grants to organizations that promote diversity and inclusion.
6. Public sector leadership: Demonstrating commitment to diversity and inclusion in government agencies and public sector organizations.
7. Data collection and reporting: Requiring organizations to collect and report diversity data to monitor progress.
8. Education and awareness: Promoting diversity and inclusion through public awareness campaigns and educational programs.
9. Enforcement and compliance: Enforcing anti-discrimination laws and regulations, and ensuring organizations comply with diversity and inclusion policies.
10. Encouraging diverse representation in leadership: Encouraging organizations to have diverse representation in leadership positions, such as boards and executive teams.

Examples of government initiatives that promote diversity in organizations include:
– The UK's Equality Act 2010
– The US Equal Employment Opportunity Commission (EEOC)
– The Australian Government's Workplace Gender Equality Act 2012
– The Canadian Government's Employment Equity Act
– The South African Government's Broad-Based Black Economic Empowerment (B-BBEE) policy

These initiatives can help create a more inclusive and diverse work environment, leading to improved business outcomes and societal benefits.

Impact of Diversity in Organisation by Private Industries
Private industries can have a significant impact on promoting diversity in organizations through various initiatives, such as:
1. Diversity and inclusion programs: Implementing training programs, workshops, and events that promote diversity and inclusion.
2. Employee resource groups: Supporting employee-led groups that promote diversity, inclusion, and belonging.
3. Recruitment and retention strategies: Implementing strategies to attract and retain diverse talent, such as blind hiring practices and competitive benefits.
4. Leadership commitment: Demonstrating a commitment to diversity and inclusion from top leadership, setting the tone for the

organization.

5. Mentorship programs: Pairing employees from diverse backgrounds with mentors who can provide guidance and support.
6. Diversity and inclusion metrics: Tracking and analyzing diversity metrics to identify areas for improvement.
7. Inclusive policies: Implementing policies that support diverse needs, such as flexible work arrangements and parental leave.
8. Supplier diversity programs: Partnering with diverse suppliers and contractors to promote diversity in the supply chain.
9. Community outreach: Engaging with diverse communities and organizations to attract diverse talent and promote brand reputation.
10. Innovation and product development: Developing products and services that cater to diverse customer needs and preferences.

Examples of private industries that have made significant contributions to diversity and inclusion include:
- IBM's diversity and inclusion initiatives, which have led to a diverse workforce and innovative solutions
- Starbucks' diversity and inclusion programs, which have created a culture of inclusion and diversity.
- Google's diversity and inclusion initiatives, which have led to innovative products and services.
- Amazon's diversity and inclusion programs, which have created a diverse workforce and innovative solutions.
- Procter & Gamble's diversity and inclusion initiatives, which have led to innovative products and services.

These initiatives can help create a more inclusive and diverse work environment, leading to improved business outcomes and societal benefits.

Conclusion

In conclusion, the impact of diversity in organizations is profound and far-reaching. By embracing diversity, organizations can:
- Foster a culture of inclusion and respect
- Drive innovation and creativity
- Enhance employee engagement and retention
- Improve decision-making and problem-solving
- Increase access to diverse markets and customers
- Enhance reputation and brand
- Improve business outcomes and competitiveness
- Create a workplace culture that values and celebrates diversity

Diversity is not just a moral imperative, but a business necessity in today's globalized and interconnected world. Organizations that prioritize diversity and inclusion are better positioned to succeed and thrive in an increasingly complex and diverse marketplace. By harnessing the power of diversity, organizations can unlock the full potential of their employees, drive business success, and create a brighter future for all.

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These references provide evidence that diversity and inclusion have a positive impact on business outcomes, employee engagement, and innovation, among other benefits.

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Type: General Review

This paper concentrates on the socio-political aspect which is being portrayed by the Nigerian poet, story-writer, novelist, and playwright Ben Okri. By examining different moments which transformed the lives of characters which are being presented Ben Okri in the Novels such as The Landscape within, Flowers and Shadows, The Famished Road, Songs of Enchantment, Astonishing the God, Infinite Riches, In Arcadia, Starbook, and The Age of Magic. This aims to show the identity of characters and their principles being the greatest aspect of potential and also personal mirrored political liberation, with techniques with narration. It provides a brief introductory explanation about the detailed study of Nigerian Literature which is the place of Ben Okri who is a poet from Nigeria. This chapter analyses the work of Ben Okri and other critical material which are being presented by him. The second part of this chapter conveys the magic realism which is being applied to the novels of Ben Okri. proposes to analyze various selected novels and works by Ben Okri which are Flowers and Shadows, The Landscape within, Astonishing the God, The Famished Road, Songs of Enchantment, Infinite Riches, In Arcadia, Starbook, and The Age of Magic which helps to capture the Nigerian-London culture and the character struggling and protesting against their instinctive emotions of acceptance through the attainment of possession provides an intensive Diaspora study and Identity of culture in the selected novels of Ben Okri. The struggle for the individuality and acceptance of black identity by the society. The term ''Diaspora'', originally meant the dispersal of the Jews from their homeland, now this is applied as a metaphoric designation for all expatriates, refugees, exiles and immigrants, whose lives, languages and experiences have been altered by the paradigms of bilingualism, biculturalism and geographical dislocation'' (Singh 9). Diasporic writers are deeply attached to their centrifugal homeland, yet year to belong to their current abode. They are caught psychically between two worlds and this double marginalization, from their root culture, and host culture negates their belonging to either location. This condition of being ''unhomed'' is associated further with alienation, a desire to reclaim the past and yet revolt against it; the inability to move out, and the urge to show solidarity to the homeland but unwillingness to threaten relations with the host country.

In diasporic writing, one comes across tremendous creativity, hybridity (mostly positive) and linguistic experimentation. Concerns touching upon race, ethnicity, belonging, otherness, gender, subalternity, voice, do come in most of the time and this is a refreshing departure from the earlier more or less monolithic Anglo-American-centric, or Euro- centric fare which one worked with a few decades ago.

The condition of anomaly and ambiguity is at the heart of diasporic condition and it is examined in its complex permutations by many cultural texts. According to Stuart Hall, "the diaspora experience is defined, not by essence or purity, but by the recognition of a necessary heterogeneity and diversity: by a conception of 'identity' which lives with and through, not despite, difference: by Hybridity'' (401-2). But the universal applicability of this term raises complex questions and calls for a new understanding of what it means to be diasporic in specific places and periods in the world.

Migrations and border-crossings, are age-old phenomena. It is perhaps more than three centuries now that people have been indulging in such transnational shifting, sometimes voluntarily, sometimes for economic reasons and sometimes by forced circumstances. Frequency of these migrations in the present times has become unprecedented: whether it be the lure of capitalism or the enchantment of the 'other' culture, reasons for such unprecedented frequency of dislocation cannot be easily pin-pointed. There is no doubt that "Diaspora" is a much-hyped and fashionable term that has caught the fancy of writers, literati, historians and sociologists, but, at the same time, "homing desire" and the "desire for home," are real and natural repercussions of these displacements and dislocations which are being conveyed through the "narratives for belonging" for quite sometimes. Almost half a century back, narratives of/on dislocated identities talked of nostalgic sensibilities and feelings that bordered around tragic diaspora, articulation of pain for the loss of secure, cozy home that had been left behind and that was difficult to revisit due to economic constraints and also due to much less advanced commuting systems. The intensity of pain of separation articulated in diasporic narratives written during 70s and 80s of the previous centuries was genuine because the world then was not globalized and societies were not multicultural.

Twenty-First century is witnessing the boom of narratives and dictions by those for whom categories of belonging and their present positions have been made

unstable as a consequence of dislocation and displacement enforced by postcolonial and/migrant circumstances. Among such writers many are second generation diasporic who born and brought up in alien culture and as such they have no in-depth familiarity with the concept of 'home' or 'nation' because they cannot miss or feel nostalgia for a place with which they have not been even in touch. Whatever link they have with their land of ancestors is by virtue of their ancestry or racial genealogy. Their home should be where they are born and brought up, where they have learnt to lisp in the language of their surrogate country, where they have grown listening to the folk tales of their adopted country, where they have adopted all their mannerisms. But, in spite of that, works of such writers' construct narratives that speak of "homing desire or desire for home. Which home is their object of longing? Why that restlessness and sense of rootlessness? The fictions they write, speak of, from and across migrant identities and develop narratives of plurality, fluidity and … emergent becoming" (Bromely 1-2), even when they have not witnessed the trauma and turmoil of displacement or dislocation or even migration in the strictest sense of the term, being second generation diasporas.

The pertinent question is, when the experience addressed is by/that of those born in the 'migrated space', why do their narratives construct journeys of exile pain, dislocation and displacement? It is the problematics of such writing and writers that this research paper seeks to interrogate, with special reference to Ben Okri's Novels.

Donna Haraway, in a remarkable essay "Home(s) Abroad: Diasporic Identities in the Third Space," in an effort to relocate and redefine his own dual identity as an Indian born–American problematizes the larger issue of undefined diasporic identity. My self-description as an American is a spatial identity; constructed from the external territory, it has nothing to do with my whatness, my essence or being as a person, until the larger dominant culture readjusts itself to accommodate my presence. For the time, it is a constructed domicile arrangement: in exchange for my willingness to accept the subjecthood of the sovereign nation called the United States of America. I'm subjectified branded with a territorial marker of citizenship, that, like a stamped emblem on the back of the visitors' palm in an entertainment park, allows me access to certain privileged areas of social, political, and economic life. Yet the territorial persona, as a mask of my identity, cannot fully represent the subject/object of my person, the material body and the psychic being (20).

Time and again one is cautioned against theorizations of diaspora which "must emerge from…. Base of scholarship, historically grounded in different diasporic locations, rather than purely postmodern theoretical abstractions of displacement and movement" (Braziel and Mannur 12). Implied in such narratives of diasporic consciousness are the issues of 'home', 'belonging' and 'identity' which have also become 'sites' of contestation and interrogation. Home here connotes our networks of family, friends, colleagues and various other 'significant others'. It signifies the social and psychic geography of space that is experienced in terms of a neighborhood or a home town. That is, a community imagined in most part through daily encounter. This 'home' is a place with which we remain intimate even in moments of intense alienation from it. It is a sense of feeling at home'" (Brah 2). If 'home 'is a place that signifies the social and psychic geography of space that is experienced in terms of neighborhood or a home town, which 'home' is Naipaul's object of search when he himself has not experienced any displacement or dislocation?

In recent years, literary studies are largely focusing on cultural studies within the immigrational, diasporic and globalized framework. All three underscore the importance of the processes through which 'displaced' people could possibly find a place and a voice in a society, and which articulates one's individual and collective identity common to all human beings but these are decidedly more pronounced in people who are displaced or variously silenced. Third world diasporic writing is rooted is governed by an urge to relocate, reconstitute, and most importantly, to establish and examine cultural identity. Cultural identity is itself a derivative of historical and political circumstance and it naturally follows that diasporic writing be densely interwoven with journeys to one's roots. The diasporic writers ''locate themselves in the history of their people who have a sense of history. They transcend the 'Master Cod of history as a concept'' (Juneja 19).

Diasporic space is never one's natural space, it is a space that has to be painfully negotiated between the overwhelming contradiction of ethnicity, religion, nationalities, etc. Having forsaken their homeland forcibly or for personal survival or benefit, these communities feel responsible towards their home country. An explanation can be found in Homi Bhaba's definition of the "Third Space" as a hybrid location rich in turmoil from which ''the inter-subjective ad collective experiences of nationess, community interest or cultural values are negotiated'' (2).

Diasporas face the problem of nostalgia, and alienation, and in the process feel homeless and home sick. The mainstream majority alienates them for being what they are and are not: black or brown, uncultured, uncouth, backward – all the stereotypes which are often used to debunk a group, a race or a community. The interaction with the majority group is not vigorously pursued or easily abandoned in the face of cold indifference. This double alienation leads to mental breakdown, even to undesirable social activities.

The immigrants from African and Asian countries from large part of the diasporic world. The African diaspora is the story of how Africans, though scattered and dispersed, managed to retain their traditions and reform their identities in the new world. The elements of African culture such as religion, language and folklore were their links to their past lives. West-India is paradoxically a home of different diasporic communities: There are Spanish, Africans and the Asians, the Asians. Indians start coming to Trinidad around 1845 to replace the labour lost by the abolition of slave trade. Unlike their African co-workers on the plantation, the Indians were able to set up miniature reconstructions of the village, they had come from, with their own language, customs, rituals and religions. All these concerns are strongly evinced in the writings of Ben Okri. Although, he is related to the Nigerian-London diaspora, he can be defined, more accurately, as a writer of the diasporic imagination. His fiction emerges through his listening to the stories of early dispersal of his people that filter through his imagination. Placing and voicing by the diasporic writer in his works is making, remaking and unmaking the transnational communities because when he/she starts writing, the aura of dislocation, instability and strangeness is unmistakable. In recent times, the concept of 'home' has changed. It is not just one place: ''It … confronts and accepts dispersal and fragmentation as part of the constructions of new world order that reveals more fully where we are, who we can become'' (Ashcroft 197). Bill Ashcroft further says that ''The consequences of disruptions and displacement in 'home' and 'place' becomes a way of seeing, a way of inhabiting and ultimately, transforming global discourses of power of being 'at home; in them whatever local appropriations that may entail'' (197).

One of the contemporary writers who markedly deals with the location and dislocation through his fictional work is Ben Okri. His fictional work is the means to achieve a sense of self and community, it is a way of afford a vision of reconciliation and reconstruction, because a sense of self and home depends upon resolution of the divided self.

This paper concentrates on the socio-political aspect which is being portrayed by the Nigerian poet, story-writer, novelist,

and playwright Ben Okri. By examining differentmoments which transformed the lives of characters which are being presented by BenOkri in the novels such as The Landscape Within, Flower and Shadow, The FamishedRoad, Songs of Enchantment, Astonishing the God, Infinite Riches In Arcadia, Starbook and The Age of Magic. This aims to show the identity of characters and their of characterstheir principals being the greatest aspect of potential and also personal mirrored political liberation, with techniques with the narration. Okri has captured this sense of dislocation, emptiness and failure characterize all the efforts of ex-colonial societies to bring aboutsocial change.

The protagonists in Okri's novels attempt at assimilation and integration but are alwayson the outside. They may be different persons but there is a thread of continuity in theirfate and status. The research paper study aims to put efforts to make in depth analysis,exploration, explanation, critical appreciation, and evaluation of the Nigerian Literaturepresented by Ben Okri is a British writer from Nigeria of the contemporary era. He movedto England after leaving his homeland where he was living and writing for almost 30 years. The writer has been delighted all the readers with his writings, short stories, novels,essays, and poems. He has depicted his experiences of being a black immigrant in thewhite metropolis (Birth 110). All his major protagonists suffer the tragedy of displacement and separation from their homeland and are looking for cultural assimilations. Their separation from their origins leads to disorder and the forlorn spirits' search for land is concomitant with its search for validation. There are a host of writerswhose themes revolve around the anguish and pain of diaspora. What sets Okri truly apart is his sensibility, his fictional characters are particularly preoccupied with the quest for belonging to their roots, with the shaping of their identity in their new country, where they continue to be rootless.

This research study aims to put efforts to make in-depth analysis, exploration, explanation, critical appreciation, and evaluation of the Nigerian Literature presented by Ben Okri in his various Novels. Ben Okri is a British writer from Nigeria of the contemporary era. He moved toEngland after leaving his homeland where he was living and writing for almost 30 years. The writer has been delighted all the readers with his writings, short stories, novels, essays and poems. He has depicted his experiences of being a black immigrant in the white metropolis (Berth, 110).

Literature in various parts in world is preoccupied with the human existence in the relation to History and Land. This time and space orientation have a variety of impacts on different cultures. In Nigerian literature, the land is setting up for the actions of a human. These traditional approaches of looking upon the past and something complete and end have a great influence onthe future. Nigerian culture portrays the simultaneity in the experiences whereas the past through various folk cultures remains alive and contemporarily vigorous and the land becomes individual extensions with the community which presents itself with social codes, values, religions, and traditions (Sarup, 260). Thus Nigerian literature can be expressed as an aesthetic continuum thatis being continuously explored by different writers.

Nigerian literature tradition was in the oral form till the twentieth century. This traditional aspect consists of the specialization in the verbal art formations, proverbs, chants, riddles, lyrical poetry, myths, tales, epics, and legends through which the African communities have to make sure thecultural continuity is maintained, which is being embodied with the early literature which are written about the pre-colonial periods and the ancient times. The storehouse and vehicle are theoral tradition of the Nigerian's philosophies, values, rituals, mysteries, and majorly cultural memory. It has been transferring from one generation to another through performances and word of mouth. The modern literature of Nigeria of the early colonial period has been developed out of educational systems which are imposed through colonialism, with the models that are drawnfrom Europe instead of existing. After the World War II, there has been a huge amount of development in both literary output and quantity in Africa. It is after World War Second the Nigerian Literature come into being. It only holds the credit of the Western African Nation in order to produce a large body of sufficient writing which covers all the major genres of literature.From the late 1940s, when most of the countries of Africa started gaining political independencein the subsequent times, the continent writers began to reach out to the larger audience throughout the world. At this point, the African writers started adopting the languages of Europe and therewas a basic difference between the ancient literature and the literature of Nigeria. In the 1970s the languages of European and metropolitan were challenged (Hermann, Wittenberg, and JohnThieme, 365).

The concept of African fiction which comes from Nigeria is described as a flourishing novel. The techniques vary and the scope broadens, reflecting various diversity and also showcasing the multiple experiences of Africans. The modern generation writers are promising and daring in their view of African continents. While earlier novels depend upon the twin stereotypes of the civilized European and savage African, the writers full of creativity of the modern era are experimenting with new techniques and modern genres in order to fictionalize the modern global situations. Many writers are following the footsteps of the Nigerian writers Ben Okri, calibre ofamazing writers have emerged on fiction writing in Nigeria. Same like Okri, many of the writersare born in Lagos or other cities of Nigeria and have taken their education in the western universities or have been brought up abroad. Most of them have travelled on an extensive basis,especially in the African continents, and holding the forefront of their writings and their nation'spredicament.

The French Professor Louis Pierre Althusser was born on 16 October 1918, in Algeria and he has done his studies from Ecole Normale Superieure which has situated in Paris to become Philosophy Professor. Althusser was a Communist Party member of French being sometimes astrong critic. His theses and arguments were being set against the threats which he saw were attacking the Marxism foundations. These have included both the empiricism influence on the theory of Marxist and also the reformist and humanist socialist orientation which have been manifested as the division in the communist parties of European Union as well as including thedifficulties of the cult personality and also the ideology.

It is important and worthwhile to have a glance at the worthy successors and contemporaries ofBen Okri before embarking on the study of his writings. The most promising of his work mustbe Helon Habila, *Waiting for an Angel*, which was published in 2002 and received the prize ofCommonwealth Writers in 2003. His novel *Measuring Tune* was published in 2007 and soon after that, it gained critical acclaim. Ben Okri, is a novelist, poet, writer of short stories, writer gained mastery in storytelling, the writer plays magic with the written words which resemble thespirit realm hallucination that is being depicted in his work (Scholar Aug 2007). Ben Okri wasborn in Minna which is situated in Northern Nigeria, then he moved to England at nineteen age.He decided to study at the Essex University and become poetry editor for Western Africa, thenelected for Visiting Fellow Comment

in the Trinity College, Cambridge, and Creative Arts. Okri has written his first work, *Flowers and Shadows*, at eighteen age. Subsequently, a literary output that has been at the same time rewarding and prolific.

He has the credit of eight novels which are followed as *Flowers and shadows, The Famished Road, Songs of Enchantment, The Landscapes Within, Astonishing the Gods, Dangerous Love, Infinite Riches and In Arcadia.* Principle works of Okri also include two amazing collections of poems are *Mental Flight and An African Elegy,* two wonderful collections of short stories of *Stars of the New Curfew and Incidents at the Shrine,* and the essay collection which is in the form of pamphlets of *Birds of Heaven* and in the form of book-length *A Way of Being Free.* Ben Okri also won a prestigious Booker Prize in 1991 for the most amazing novel *The Famished Road (*Ben Okri, 1997). He has also won the prize for Commonwealth which was for Africa Writers for the astonishing writing of the Paris Review of Aga Khan and *Incidents at the Shrine* fictional awards.

During the regime of Colonialism, writers such as Frantz Fanon assumed that it was the duty of the writers to recover the holistic and natural entity recognized as "*African Culture*" which according to them subjugated to Colonialism. Consciousness in the context of the nation got adequate reflection in terms of literature and it drew strength from African culture ideally which was invented, the homogeneous identity of the nation which was elusive and abstract, a romantic vision of the real Africa which has lived only in books and dreams (Frantz, 2002). Anyhow the writers of Africa were successful in portraying, asserting, and projecting the legitimacy of African Culture and nationhood, and the literature at that period was a narrative of liberation and literature that was intensive nationalistic in the treatment and tone, with the inclusion of specific intent of the rescuing the nation and its belonging in culture from disfigurement which it might suffer at the colonizer's hand. The major example of this kind of nationalist writings is portrayed by Frantz Fanon by his novel *The Wretched of the Earth.* Fanon also proclaimed which the Africans do not require to catch up and edge up with the west. According to Frantz, Nigerian writers should maintain their obsession with Europe and instead, conceiving an Africa which is based on the past and present realities of the continent. He just wanted to relocate the center of culture from the assumptions of discourse and placing the nation as the focal point in order to address its specific challenges and problems.

After the many nations of Africa gained independence, in the late 1960s and '70s, the writers of Africa were being forced and imposed to reappraise their stances. Their freedom ideals and revival of culture were made too unrealistic and idealistic. The fact that all structures of colonialism and institutions also continued to exist, even though after the colonialism was disappeared. Africa jumped into the situation of inexpressible squalor and corruption, from that situation it is struggling to escape till now. This phase in African literary history is termed despair and disillusionment. The post-colonial dissenting intellectuals disclosed their major charge upon the elite of neo-colonial. *A Grain of Wheat* of Ngugi Wa Thionga, *A Man of the people* of Chinua Achebe, *Interpreters* of Wole Soyinka, and *The Beautiful Ones Are Not Yet Born* (Ayi Kwei, 10). Armah is considered a good example of fictional writings. Armah also commented on the tiring shifts and bloody coups between occasional trysts and military regimes with the democracy have made them cry out that they have lost their ways completely.

The Famished Road of Ben Okri is the classic magic realism novel of Western Africa which has won the Booker Prize which sets in Nigeria, it also traces the struggle and pain of Azaro who is a famished baby who lives somewhere between the living and the spirit. Azaro who had the destination of dying in infancy is reborn to the same mother again (Cezair Thompson, 44). Azaro tries to resist fate and tries his survival with the family in the mid of violence and disease, during his companions of spirits are being continuously forcing to pull back to the world of spirits. The story progresses in the dream world of those who are waiting to be born and die. While the father of Azaro struggles with the mythic battles and his mother has to keep the family moving ahead with her determination and courage. Finally, Azaro is being destined to walk into the spirit world. Okri continued his work with two novels *Infinite Riches and Songs of Enchantment.*

Flowers and Shadows, Ben Okri's renowned novel recounts with the growth of Jeffia Okwe in adulthood. Jeffia is the child of ruthless and corrupt businessman who becomes the moving tragedy after her husband's death. Then Jeffia discovers nature and kind of the business of his father. That brought him to contact with the participants of human drama, specifically Juliet who is his father's former mistress. The story revolves around Jeffia falling in love with Cynthia. The novel provides the biblical message that the father's sins are being vested on the son (Tolofon, Andrew, 47).

Ben Okri's concept of animating the world which is completed the riddles which answerable by dead. There is continuous interchanging between the spirit world and the human world (BBC, 2). Grotesque transformations and hybrids, which include dead walking again singing and fighting, and frequently taking the form of animals. Ben Okri's fiction listens back after many decades to immediately after the era of pre-independence, in which the traditional society has the native medicine and also herbalists, sacrifices with animal and also magic, electricity cars arrivals and forest exploitation by the forest multinationals is being picturized. His road concept is a famished beset through hunger and of tern devours its people.

Okri's fiction is a complete pack of fantastic, metaphorical, and magical realism elements which are best understood in the post colonialism context. He reworks on the oral tradition of Africa with the words from the native languages used in Standard English that are employed modern literary techniques. His novels provide a wide variety of topics on political and economical corruption, ecological and war destruction. Short stories of Ben Okri deal with the world of spirit, more urban and realistic, capturing economic de-separation and chaos contemporarily. He never neglects the spirit world while working on poems. Ben Okri's collection of poems *An African Elegy (1992)* dealt with the classic theme of solitude, love, and death.

Stressing out on the incorporation of the African folklore and myth, puts the emphasis on mysticism, spirituality, and putting light and focus on the country's efforts to rise above the third status in the world, the writing's of Ben Okri captures the world view of Nigeria. Okri has received appreciation for surreal techniques especially the magic realm which became popular by Gabriel Garcia Marquez. Ben Okri's works majorly and constantly focus on the socio, economic and political situations of Nigeria. Okri utilizes myth in his works to represent staunch reality. Like other writers from Nigerian Okri also portrays the 'Abiku' figure who is a child's spirit that dies before gaining maturity, but it has been given chance to take birth again and again. It is being used by the writers of Nigeria to provide the chances of rebirth renewal and rebirth for their national post-colonialism.

Ben Okri made efforts this matter is Brilliant. His work majorly puts light on modern Nigeria and focuses on life in modern Nigeria. His stories portray the circumstances which have beset him in his homeland- squalor, poverty, corruption, and famine. He moves away from the over the examination of the politics of the system and concentrates on the general meditation upon the tension of history and the relation of power and repercussion faced by the individual. He used a variety of famous modes of narrations which include postmodernism, post-colonialism, magic realm, modernism, and psychoanalytic theories. Okri majorly

resembles James Joyce and Virginia Wolf in hisnarrative creations which revolve around the central character. He probably restrains using the technique such as Stream of consciousness and exploration of the luminal relations are reminiscent of Woolf. But postmodernism of Okri has a uniquely Africanin it which draws from the extension of creativity of African culture and folklore that israther being a derivative imitation of techniques of foreign literature. The concerns ofpost colonialism with the reviving and remembering the past culture are very much unmistakable in Okri. The bizarre and grotesque things which happen in the novels, the brilliance of his imaginary poetry, and the sheer power of the description, make the techniques of Ben Okri akin to the magic realists. Ben Okri is also comfortable with thepsychoanalytic theories. When one of the characters from his works says: *The whole history of humans which is unexplored continent of deeper in our souls*" (The FamishedRoads 498).

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Abstract

Atmanirbhar Bharat, launched in response to the Covid-19 pandemic, represents India's vision of economic self-reliance and global competitiveness. This paper explores the application and implications of Atmanirbhar Bharat in the context of Jharkhand, a state abundant in natural resources yet grappling with significant developmental challenges. The study employs a mixed-methods approach, incorporating primary observations and secondary sources to assess the initiative's effectiveness in fostering local economic development and promoting self-sufficiency. Jharkhand's socio-economic landscape, characterized by high poverty rates, limited employment opportunities, and substantial rural-urban disparities, underscores the critical need for inclusive growth strategies. By analyzing various facets of Atmanirbhar Bharat, including its impact on employment generation, entrepreneurial initiatives, and community empowerment, this research aims to evaluate its potential to uplift marginalized communities and integrate them into the national development narrative.

Key findings highlight the role of Atmanirbhar Bharat in stimulating local economies through initiatives like Atmanirbhar Krishi, women empowerment schemes, and grassroots-level entrepreneurship. The study also identifies challenges such as educational disparities, infrastructural limitations, and bureaucratic hurdles that impede the program's comprehensive implementation. Insights gleaned from this research contribute to a deeper understanding of Atmanirbhar Bharat's applicability in diverse regional contexts and provide recommendations for enhancing its effectiveness in achieving sustainable economic growth and societal advancement in Jharkhand.

Keywords: development, opportunities, local global, self-reliant, empowerment, education.

Introduction

The present issue Atmanirbhar Bharat is primarily intended to examine the role and importance of overall development in India regarding a vision to make Jharkhand self-reliant. So now the question arises what is Atmanorbhar.

According to economist Swaminanthan Iyer, "Atma-Nirbhar" can be translated as both self-reliance and self-sufficiency. So Atmanirbhar Bharat refers to freedom from all respect of life positively. In a general sense, it refers to "local for global". It was launched on 12th May 2020 by PM Modi during the Covid-19 pandemic for common betterment through grass root level development. In a vast way, the vision of Atmanirbhar Bharat means "making our country a bigger and more important part of the global economy". It focuses on reviving the economy, generating employment, supporting startups, and promoting domestic production to grow the Indian economic condition. The government has also announced a special economic package of Rs. 20 lakh crore under the Atmanirbhar Bharat Abhiyaan for common betterment.

Jharkhand Profile

Jharkhand is located in the Eastern part of India, and enclosed by West Bengal to the East, Chhatiisghar and Uttar Pradesh to the West, and Bihar to the North, and Odisha to the South. It is the 15th Largest state by Area and the 14th largest by population. Jharkhand state is rich with its huge minerals and natural beauty. Jharkhand the 28th state of India was formed on November 15th 2000, after a long-standing tribal movement.

Methodology

The study is based on both primary and secondary methods. The primary method has been used through experience and observation and the secondary method has been through newspapers, books and case studies.

Selection of the Area of Study

The present study is a humble effort to examine the role of Atmanirbhar Bharat, a vision to make Jharkhand self-reliant and promote economic development. The purpose of this selection is that the state is most backward and it has been kept behind to enter into the mainstream of the development process. Thus there is a lack of employment opportunities and poor people borrow money at high rates of interest from the money lenders, and landlords. The high incidence of poverty, poor health status, high rates of migration, etc. are the main indicators for its backwardness. So, it suffices to think that Atmannirbhar Bharat, can ensure the process of economic development and thereby achieving common betterment.

Purpose of the Study

1. To examine the working of Atmannirbhar Bharat in the field of common betterment.
2. To examine the different models of Atmannirbhar Bharat.
3. To access the self employment activities generated by Atmannirbhar Bharat Abhiyaan.
4. To examine the weakness and strength of Atmannirbhar Bharat Abhiyaan.
5. To access the possibilities of economic development by Atmanirbhar Bharat mission.

Scope of the Study

The scope of the study is concerned that the issue has great potential in Jharkhand state, which will not only help in extending new areas of development, but also contribute to developing new economic development for maximum social advantage.

Concept

Atmanirbhar Bharat Abhiyaan is an example of economic stimulus to enhance the Indian economy by focusing on local economic development, and it is a similar move towards self-reliance. In other ways, we can say that the concept is a new economic policy which contains vast reforms in various sectors to promote and improve local supply and demand chains. In Jharkhand, Atmanirbhar Bharat Mission has presented a very good example for economic betterment like- Atmanirbhar Krishi, Women Empowerment, SHGs Groups and their activities. So, we know after Covid-19, our economic system is growing gradually, since Jharkhand is a poor state due to lack of proper guidance. So first we PRI's should initiate educational programmes at the village level. Secondly, NGOs, SHG's, and People's organizations should have networking, and initiate the programme for the empowerment of society. We know the empowerment of rural people is crucial for development. So Atmanirbhar Bharat mission was undertaken with a view to promote Jharkhand state and tribal area to increasing realization and recognition for global development, Since Jharkhand is a rich state with beautiful landscape, forests, waterfalls, minerals, tribal cultures, handicrafts and innocent people. Jharkhand is also a fascinating state for tourism, agriculture, and wildlife. But, human beings were badly affected in the Covid-19 pandemic period. So, after the pandemic the strategy adopted by the state was to create a positive atmosphere, for ordinary people's participation to generate new employment, business, market etc. Because awareness and self-reliance promotes regional arts and crafts to help local human beings, in both the private and public sector. This is possible due to Atmannirbhar Bharat, (a vision to make Jharkhand self-reliant to promote economic development). There are so ample examples of government schemes in Jharkhand launched by the state government - Birsa Harit Gram Yojna, for self-reliance of farmers. Here I present some case studies on how people can be self-reliant and promote their society for greater good.

Case Study

1. Sapan Kumar the 42 year old School Headmaster at Dumarthar village in Dumka district is helping students become Atmanirbhar (self-reliant) amid the pandemic by making them learn how to make chalk, mats etc for common betterment.
2. According to a new Indian express published 22nd March 2022 a village located at Khunti in Jharkhand is becoming self Reliant in meeting its water needs. Other hand, all villagers benefited by (DDUSY) DIN DAYAL UPAIDHAY SELF YOJNA. So this village was awarded the "National water award" for better cultivation work through water needs.
3. But women empowerment is the main part of social development for example in Jharkhand at ORMANJI village in Ranchi, Village Pradhan Srimati Munni Devi is a self reliant lady and she has been an example in society. She took advantage of Govt. plan and benefited 150 houses of her village for drinking water supply. On 4TH March 2023 she was awarded "SWACHH SUJAL SAKTI SAMMAN" by President Drapodi Murmu.

I think Atmanirbhar Bharat Abhiyan or Self-Reliant India Mission is the best platform for Jharkhand, because the five main pillars economy, Infrastructure, system, Demography and demand are the part of Atmanirbhar Bharat Abhiyan.

As a whole it is clear that Atmanirbhar Bharat through a vision to make Jharkhand Self Reliant, a milestone. Thus now it is clear that Atmanirbhar Bharat also promotes skill development programmes, because the Jharkhand Gramin Udyami Project launched and we can see its benefit in our society. P.M. N. MODI on 15 November 2023 launched the VIKSIT BHARAT SANKALP YATRA to ensure last mile delivery of government welfare schemes. As a whole Atmanirbhar Bharat is promoting poor and backward classes. We know that about three crore farmers have received agricultural loans of Rs. 4.22/- The health care workers will receive insurance, and street venders can receive zero interest loans.

But there are some shortcomings of a self -reliant mission such as lack of education, low health status, ignorance, discrimination, exploitation, domestic violence demand, difficulty of mobilizing finances, economical, political, social and educational. We know education is the backbone of development. So first of all we should provide better education for all in Jharkhand without distinguishing between color, caste and creed for Self Reliant. I think NEP-2020 is a good step for self-reliance, because the New Education Policy is a good tool to provide various subjects to learn- natural and physical sciences, mathematics, statistics and computer applications commerce and management, humanities and social science. In Jharkhand through Atmanirbhar Bharat mission provide various sectors to promote business, investment, local supply, it is also necessary that we should focus more on productivity increasing and less tariffs in Jharkhand which will surely promote the economy towards self-reliance for future strength, because Jharkhand is an underdeveloped state so without self-reliant human beings we cannot survive and our sustainable development would never grow.

Hypothesis

Following are the hypothesis framed to examine that:

1. ANBA is capable of identifying the development and mobilizing local resources at the grass root level.
2. ANBA is only a map of economic packages.

Conclusion

People of Jharkhand face many challenges. So it is not surprising to see that Atmanirbhar Bharat Abhiyaan came in (with a promise to promote economic development as well as common betterment), it was hindered by several socio-political issues. However, for this society to be happy and prosperous, participation in Atmanirbhar Bharat is essential. Hence, it is understood that people of Jharkhand must also join the mainstream of the nation. Atmanirbhar Bharat has an overall impact on people empowerment by opening the path for economic development. There is no doubt that there is more expectation. So we can say in brief, it can be concluded that Atmanirbhar

Bharat Abhiyaan is a milestone for Jharkhand state to promote poor and tribal for healthier communities and greater peace and stability to support future generations.

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Abstract
The growth of rural women entrepreneurs in the formal sector is hindered by a multitude of factors, leading to a significant disparity in their economic contributions. Limited access to education, training, and resources, coupled with social and cultural constraints, restrict their ability to develop entrepreneurial skills and knowledge. Furthermore, inadequate financial support, regulatory hurdles, and limited market access exacerbate the challenges faced by rural women entrepreneurs. The added burden of balancing family and business responsibilities also slows their growth. These barriers not only prevent rural women entrepreneurs from reaching their full potential but also perpetuate the gender gap in entrepreneurship, underscoring the need for targeted interventions and support systems to empower them and promote inclusive economic growth.

Rural women entrepreneurs face significant obstacles in the formal sector, hindering their growth and economic contributions. Limited access to education, training, and resources restricts their entrepreneurial skills and knowledge. Social and cultural constraints, such as gender roles and expectations, further limit their opportunities. Inadequate financial support and credit facilities, regulatory hurdles, and limited market access also impede their progress. Additionally, balancing family and business responsibilities is a significant challenge. These barriers prevent rural women entrepreneurs from reaching their full potential, perpetuating the gender gap in entrepreneurship. Addressing these challenges is crucial for empowering rural women entrepreneurs and promoting inclusive economic growth. Support systems, such as training programs, mentorship, and access to finance, can help overcome these obstacles and unlock the potential of rural women entrepreneurs.

Keyword: -Education, Social Constraints, Cultural Constraints, Gender Rules, Financial Support, Family Responsibilities, Gender Gap

Introduction
Rural women entrepreneurs play a vital role in the economic development of their communities, yet they face numerous challenges that hinder their growth and success in the formal sector. Despite their potential, rural women entrepreneurs often struggle to establish and sustain their businesses, leading to a slower rate of growth compared to their urban counterparts. This disparity is attributed to a complex array of factors that restrict their access to resources, markets, and opportunities.

The formal sector offers numerous benefits, including access to finance, technology, and markets, which can enhance the growth and competitiveness of rural women entrepreneurs. However, various obstacles prevent them from fully leveraging these opportunities. Understanding the reasons behind the slow growth of rural women entrepreneurs in the formal sector is crucial for developing effective strategies to empower them and promote inclusive economic growth

This discussion will explore the key factors contributing to the slow growth of rural women entrepreneurs in the formal sector, including limited access to education and training, social constraints, inadequate financial support, regulatory hurdles, and limited market access. By examining these challenges, we can identify opportunities to support rural women entrepreneurs and unlock their potential for economic growth and development.

Some important factors for Reasons for slow growth of rural women entrepreneurs under formal sector
Education:
Limited access to education is a significant barrier to the growth of rural women entrepreneurs. Many rural women lack basic literacy skills, making it difficult for them to navigate the formal sector's complex regulatory requirements, access financial services, and develop essential business skills. Without education, rural women entrepreneurs struggle to create business plans, manage finances, and market their products effectively.

Moreover, the lack of specialized training and vocational skills hinders rural women entrepreneurs' ability to innovate and adapt to changing market conditions. They may not have the knowledge to adopt new technologies, improve product quality, or expand their product lines, making them less competitive in the market.

Furthermore, education empowers women to make informed decisions and challenge societal norms that restrict their economic participation. Without education, rural women entrepreneurs may be more susceptible to gender-based discrimination, limiting their access to resources, networks, and opportunities.

Overall, education is a critical factor in enabling rural women entrepreneurs to overcome the barriers they face in the formal sector. By

improving access to education and training, policymakers and stakeholders can help rural women entrepreneurs develop the skills and knowledge needed to succeed and grow in the formal sector.

Social Constraints

Social constraints, such as gender roles and expectations, limit rural women entrepreneurs' ability to participate fully in the formal sector. Traditional societal norms often relegate women to domestic roles, restricting their autonomy and decision-making power. This can prevent them from pursuing entrepreneurial opportunities, accessing resources, and building networks.

Moreover, social constraints can lead to limited mobility and access to markets, customers, and suppliers. Rural women entrepreneurs may be expected to prioritize family responsibilities over business obligations, hindering their ability to devote time and energy to their enterprises.

Additionally, social constraints can result in gender-based discrimination, affecting rural women entrepreneurs' access to finance, technology, and other essential resources. They may face bias from financial institutions, suppliers, and customers, making it harder to establish and grow their businesses.

Furthermore, social constraints can limit rural women entrepreneurs' ability to adapt to changing market conditions and embrace innovation. They may be less likely to take risks, adopt new technologies, or explore new markets due to fear of social disapproval or rejection.

Overall, social constraints can significantly impede the growth and success of rural women entrepreneurs in the formal sector. Addressing these constraints through education, awareness, and policy support can help empower rural women entrepreneurs to overcome these barriers and reach their full potential.

Cultural Constraints

Cultural constraints significantly hinder the growth of rural women entrepreneurs in the formal sector. Deep-rooted cultural norms and values often dictate gender roles, limiting women's autonomy and decision-making power. In many rural communities, women are expected to prioritize domestic responsibilities over economic activities, restricting their ability to invest time and energy in their businesses. Additionally, cultural norms may discourage women from engaging in certain industries or activities deemed inappropriate for their gender, further limiting their entrepreneurial opportunities. Moreover, cultural constraints can lead to limited access to social networks and mentorship, making it difficult for rural women entrepreneurs to access critical information, resources, and support. These cultural barriers not only slow the growth of rural women entrepreneurs but also perpetuate gender inequality, underscoring the need for culturally sensitive support systems and initiatives to empower rural women entrepreneurs.

Gender Rules

Gender roles and expectations can significantly contribute to the slow growth of rural women entrepreneurs in the formal sector. Traditional gender roles often assign women to domestic and caregiving responsibilities, limiting their time and energy for entrepreneurial pursuits. Women may be expected to prioritize family obligations over business needs, hindering their ability to invest in their enterprises, access markets, and build networks.

Furthermore, gender roles can influence the types of businesses women are expected to operate, often confining them to traditional industries such as food processing or handicrafts, rather than encouraging them to explore innovative or high-growth sectors. These gendered expectations can also limit women's access to resources, finance, and technology, further constraining their growth potential. By challenging and transforming these gender roles, rural women entrepreneurs can overcome these barriers and unlock their full potential for economic growth and development.

Financial Support

Limited financial support is a significant barrier to the growth of rural women entrepreneurs in the formal sector. Women often face difficulty accessing credit, loans, and other financial services due to lack of collateral, limited financial history, and discriminatory lending practices. This restricts their ability to invest in their businesses, purchase equipment, and hire employees, ultimately hindering their growth and competitiveness. Moreover, high interest rates, strict repayment terms, and limited financial literacy can further exacerbate the challenges faced by rural women entrepreneurs. Without access to affordable and suitable financial products, women are forced to rely on informal sources of credit, such as moneylenders, or sacrifice personal assets, perpetuating a cycle of poverty and limiting their entrepreneurial potential. Addressing these financial constraints is crucial to empowering rural women entrepreneurs and promoting inclusive economic growth.

Family Responsibilities

Family responsibilities can significantly impede the growth of rural women entrepreneurs in the formal sector. Women often bear the primary responsibility for childcare, household chores, and elder care, leaving them with limited time and energy to devote to their businesses. This can lead to reduced productivity, limited market access, and decreased competitiveness. Moreover, family obligations can restrict women's ability to travel, attend training sessions, or participate in networking events, further limiting their access to resources, information, and opportunities. Additionally, the pressure to balance family and business responsibilities can lead to emotional stress, burnout, and decreased motivation, ultimately hindering the growth and success of rural women entrepreneurs. By acknowledging and addressing these family-related challenges, policymakers and stakeholders can develop targeted support systems to empower rural women entrepreneurs and promote their economic empowerment.

Gender Gap

The gender gap is a significant factor contributing to the slow growth of rural women entrepreneurs in the formal sector. Women face a range of gender-specific challenges, including discriminatory laws and regulations, social norms and biases, and limited access to resources and opportunities. This gender gap can lead to reduced economic participation, lower productivity, and decreased competitiveness among rural women entrepreneurs.

Additionally, the gender gap can result in limited access to education, training, and mentorship, making it harder for women to develop the skills and knowledge needed to succeed in the formal sector. Furthermore, the gender gap can perpetuate gender-based violence, harassment, and discrimination, creating a hostile business environment and deterring women from pursuing entrepreneurial opportunities. Addressing the gender gap is crucial to promoting gender equality and empowering rural women entrepreneurs to reach their full potential.

Some suggestions and recommendations to address the slow growth of rural women entrepreneurs in the formal sector:

1. Targeted Training and Mentorship: Provide training and mentorship programs specifically designed for rural women entrepreneurs, focusing on business management, marketing, and financial literacy.
2. Access to Credit and Markets: Establish rural-friendly financial products and services, and facilitate access to markets, technology, and infrastructure.
3. Infrastructure Development: Invest in rural infrastructure, including transportation, communication, and energy, to support business growth.
4. Social and Cultural Awareness: Implement awareness campaigns to address gender-based discrimination and stereotypes, promoting a supportive environment for rural women entrepreneurs.
5. Inclusive Policy Formulation: Involve rural women entrepreneurs in policy decision-making processes to ensure their needs and concerns are addressed
6. Public-Private Partnerships: Foster collaborations between governments, NGOs, and private sector organizations to provide resources, expertise, and support to rural women entrepreneurs
7. Digital Literacy and Access: Provide digital literacy training and ensure access to digital technologies, enabling rural women entrepreneurs to leverage online marketplaces and digital tools.
8. Networking Opportunities: Facilitate networking opportunities, connecting rural women entrepreneurs with peers, mentors, and potential customers.
9. Childcare and Family Support: Offer childcare and family support services, enabling rural women entrepreneurs to balance business and family responsibilities.
10. Monitoring and Evaluation: Regularly monitor and evaluate programs and policies, ensuring they effectively address the challenges faced by rural women entrepreneurs.

Government Support:

Government support can be a crucial factor in promoting the growth of rural women entrepreneurs in the formal sector. Initiatives such as training programs, mentorship schemes, and access to credit can provide rural women entrepreneurs with the necessary skills, knowledge, and resources to establish and grow their businesses. Additionally, government support can help address specific challenges faced by rural women, such as limited access to markets, infrastructure, and technology. Effective government support can empower rural women entrepreneurs to overcome these barriers, increase their productivity, and compete in the formal sector.

Government Carelessness:

On the other hand, government carelessness can significantly hinder the growth of rural women entrepreneurs in the formal sector. Inadequate funding, ineffective implementation of policies, and neglect of rural-specific challenges can limit access to essential resources and opportunities. Insufficient infrastructure, bureaucratic hurdles, and inconsistent policies can further exacerbate the challenges faced by rural women entrepreneurs, making it difficult for them to sustain and grow their businesses. Government carelessness can perpetuate the existing gender disparities and hinder the economic empowerment of rural women entrepreneurs, ultimately slowing their growth and progress in the formal sector.

Some reason for slow growth for rural women in percentage %

Majority of the respondents i.e. 108 (72%) stated that the main reason for slow growth of rural entrepreneurs in the rural area is that rural women are not interested to venture in to entrepreneurial activities. Factors such as lack of self- confidence, lack of motivation, excessive household burden, husband/family members do not allow them to start enterprises, unwillingness to do hard work and low status of entrepreneurs inhibit rural women to start enterprises.

Out of 108 respondents, 47.2% respondents stated that lack of self confidence is a factor that is inhibiting rural women to start enterprise. Rural women because of their inherent nature lack self-confidence. Moreover, it may be that they are not from business family or they have no knowledge about business or enterprise.

51% respondents stated that rural women are not interested to do entrepreneurial activities due to lack of motivation. The mindsets of the average rural women are never entrepreneurial. Family members also do not motivate them for entering into entrepreneurial activities. Rural women lack interaction with successful entrepreneurs. They are also unaware about government motivational schemes.

62% respondents stated that Excessive household burden is also one of the factors that make rural women disinterested to enter into entrepreneurial activities.

25% respondents said that fathers or husbands do not allow their daughters or wives to start enterprise.

53.7% respondents stated that most of the rural women in our society are not interested to do hard work. They like to spend their free time in social festivity and most of them have no aspiration to do something and earn something although they have sufficient time. 31.4% respondents said that low status of entrepreneurs in our society is also a factor that is inhibiting rural women to enter into entrepreneurial activities.

The present study shows that more than half i.e. 87 (58%) respondents express their opinion that lack of professional education is also responsible for slow growth of women entrepreneurship in our rural society.

It is observed from the study that unawareness of government schemes provided for women entrepreneurship development is a reason for slow growth of rural women entrepreneurs. 73 (48.7 %) Respondents stated that rural women are unaware of the various benefits provided by the government under different schemes offered.

Conclusion

The slow growth of rural women entrepreneurs within the formal sector stems from a complex interplay of economic, social, and structural challenges. Access to financial resources remains a primary barrier, as women often face difficulty securing loans or investment due to lack of collateral and financial literacy. Moreover, inadequate infrastructure in rural areas, such as unreliable electricity and poor transportation networks, hampers business operations and expansion opportunities.

Cultural norms and societal expectations also play a significant role, as traditional gender roles often confine women to domestic responsibilities rather than entrepreneurial pursuits. This limits their access to networks, markets, and business knowledge critical for growth in the formal sector. Discriminatory practices in hiring and promotion further restrict women's advancement in formal employment settings, discouraging entrepreneurial aspirations.

Addressing these challenges requires a multi-faceted approach. Policymakers must prioritize gender-sensitive policies that enhance financial inclusion through targeted microfinance initiatives and training programs. Investing in rural infrastructure and

technology can improve connectivity and facilitate market access for women entrepreneurs. Educational campaigns and community outreach efforts are essential to challenge stereotypes and promote the value of women's economic participation.

In conclusion, unlocking the potential of rural women entrepreneurs in the formal sector demands comprehensive strategies that dismantle systemic barriers, empower women economically and socially, and foster an inclusive environment conducive to sustainable business growth and development.

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These references provide evidence-based insights into the challenges faced by rural women entrepreneurs and support the suggestions and recommendations outlined earlier.

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ABSTRACT

Like Badal Sirkar, Mohan Rakesh and Vijay Tendulkar, Girish Karnad has also been appreciated as one of the most representative Indo-English dramatists who has contributed a lot to the corpus of drama on the Pan- Indian Level. Right from his childhood days, he has very much interested in the performance of the Natak Companies and the philosophical Yakshagana, and naturally his creative genius got inclined to the making of dramas, first in Kannada language and then its translated version in English. His early dramas like Yayati (1961), Tughlaq (1964) and Hayavadana (1971) are based on typical Indian myths and legends, but in his later phase, Karnad turned his dramatic genius to interpret the existential dilemma, rootlessness and loneliness of human life and cultural clashes of the post-modern, cosmopolitan society. The three later plays, A Heap of Broken Images (2004), Wedding Album (2009) and Boiled Beans on Toast (2014), depict the dystopian view of cosmopolitan culture with conflicting individuals and their soaring ambitions and consequent frustration. The main purpose of this research paper is to highlight the dynamic evolution of Karnad's dramaturgy, moving from the mythical India to the techno-savvy cosmopolitan Indian life, dealing with the problem of existentialism.

Key words: Yakshagana, dynamic evolution, mythical India, techno- savvy cosmopolitanism, existentialism.

Introduction

Literature in its three basic forms - Poetry, drama and novel reflects the socio-cultural changes of the society since literature is guided by the prevalent socio-cultural aspects of society with a view to rectify or modify them. The earliest Indian dramas were moral or religious by nature, with a view to appease God or to uphold the power and honor of the great kings. During middle period of the Indian history, the trend of classical drama and its effective presentation suffered much due to foreign intrusions and their imposing alien culture. In 18th century, with the establishment of colonial power in India, the main stream of Indian drama was revoked, but its form and language were greatly affected by the European drama. Thus, Indian-English drama began to grow as an off shoot of the European drama, satisfying the westernized taste and psychology of the Indians. Since Indian dramas were rooted in the cultural background of the various Indian regions, they were first written in the regional language and they were translated in English after their recognition and popularity. If we take a glance at the literary growth of Indian-English drama from the era of Sri Aurobinds and R.N.Tagore to that of Vijay Tendulkar, Girish Karnad, Mahesh Dattani and others, we find Indo-English drama or Indian drama in English translation has achieved much recognition in terms of its daring global innovations and effective technical experiments. We have to measure the contribution of Girish Karnad to the expanding corpus of Indo-English drama.

Right from his childhood days, Karnad has been very much interested in the studies of English language and literature since he wanted to be as great an English poet as Eliot and Auden, but his creative genius was very much rooted in creating dramas, related to Indian myths, legends and folk tales. He himself admitted the influences of Indian drama or Nataka and Yakshagana on his mind from his earlier days. While living in a small town of Maharastra, Sirsi, he used to watch the performances of the touring Natak companies. The enigmatic stage-craft of the Yakshagana with philosophical message in dim light of gas-lamp im-pressed his mind very much. While pursuing his higher studies as a Rhodes scholar at oxford from 1960 to 1963, he produced his first dramatic creation, Yayati (1961). He wrote this drama first in Kannada, and after its popularity, he translated inot English. Besides Indian Nataks and Yakshagana, Karnad had also been influenced by the revolutionary pays of Shakespeare, Ibsen and G.B.Shaw. Moutushi Chakravartee, an ex-patriat critic, draws a direct comparison between the dramaturgy of Shakespeare and Girish Karnad: 'Indeed, all his plays derived from pre-existing material, yet, like Shakespeare, he transforms the raw material into a unique drama of human emotions and feelings (Chakravartee, P.183). The main purpose of this research paper is to highlight the evolution of Karnad's dramatic genius which moves from the mythical studies of Indian culture to the money-culture of the cosmopolitan Indian cities.

EXPOSITION

Karnad has been famous for exploiting Indian myths and folk-tales for the thematic structure of his early plays since he tries to re-interpret these earlier irrational concepts of human life and society with the rational outlook and consciousness of the modern people. His three earlier plays, dealing with the Indian myths and folk-tales are Yayati (1961), Tughlaq (1964) and Hayavadana

(1971). His first famous play, Yayati was directly influenced by C. Rajagopalachari's version of the Mahabharata, Published in 1950. The impact of this book was confessed by Karnad himself. This playdeals with the existential dilemma of a king Yayati who has been cursed with pre-matured old age. Yayati's body becomes old and weak, but his soul is still filled with youthful lust. He appeals every youth to embrace him so that his old body would be re- placed with the youthful vigour of the donor, taking his old body. lastly, his youngest son, Pooro grants Yayati his youth and vigour, taking his old, decrepit body. This myth of Yayati has been decoded on the stage by adding new characters. The original story of Yayati has been taken from 'Adiparva', the first chapter of The Mahabharata in which we get the marriage of Yayati with Devayani, the daughter of Sage Sukracharya as well as Yayati's extra-marital relationships with Sharmistha and other ladies. Because of his infidelity to Sharmistha that Yayati has been cursed with an old, weak body by Sukracharya. After exchanging his old body with the young body of his son, Pooro, Yayati goes on enjoining physical desires without realizing his guilt and responsibility. The suicide of Pooro's wife, Chitralekha transforms the sensual character of Yayati who gets disillusioned with endless lustful life without any spiritual fulfilment. In this connection we may cite the quote: 'Karnad's Yayati reveals the afflicted consciousness of a broken man who tries to find a meaning in existence. Out of sorrow and humiliation, Yayati is unable to under- stand the meaning of life till he is rid of old age. But contrary to his expectation, Chitralekha's suicide leads him to expiate his desire. He projects the image of an existential character, and shows that no man has the courage to choose whole heartedly either right or wrong. He is himself an amalgamation of self-elevation and vanity, self-condemnation and humility. Thus, there is an eternal quest for meaning and value, freedom and truth that can sustain us in this chaotic and apparently meaningless world' (Gupta, Jyoti and Sharma, S.P. 36) This play is written in a typical style of the classical drama with sutradhar as chorus, the same which is found in the Yakshagana. Karnad wants to portray the modern man's dilemma and existential conflicts with the sin and redemption of such a mythical character, Yayati.

Karnad's second and most celebrated play is Tughlaq which has been a peculiar blend of politics and history, of 14th century socio-political reforms of a Mughal emperor and the liberal-democratic policies of Nehru era. In this historical drama, containing thirteen scenes, Karnad projects, The Muslim sultan as a visionary and dreamer of a secular, united country, but unfortunately all his dreams and reformative measures turn to be futile because of his hasty, impractical mode of decisions and their impositions. The drama begins with the conversation of the old and the young man who seem to be dissatisfied with the religious and political policies of Tughlaq. Tughlaq as a play gained immediate recognition to Karnad as an Indian dramatist in 1965 when it was first played in Kannada and then in Hindi by the National School of Drama. later, it was translated into English by Karnad himself.

Tughlaq as a Sultan tries to be impartial between the Hindus and the Muslims by removing the Jeziya tax and by doing instant justice to any wronged Hindu by his officers, but his policies have been manipulated by the hypocritical Aziz in guise of a Hindu Brahmin, Vishnu Prasad. It is supposed that Tughlaq occupied the throne of Delhi by killing his own father and brother by a trick which breeds suspicion and resentment among his lords, Amirs and his step-mother. The Sultan gets sur- rounded with his hypocritical ministers and lords, like Imam-un-din, Ain- un-Mulk, Ratan Singh and shihab-ud-din. Tughlaq has a crafty, clever mind which helps him in dealing with all his enemies successfully. His political decisions to change his capital city from Delhi to Daulatabad and to attach the equal commercial value to both the gold-silver and copper coins prove fatal to his visions. His counterfoil in this context is the Muslim dhobi, Aziz who tries to gain maximum advantages from these policies by exercising them on Sultan's enemies and the Hindus. When Aziz is captured for his unpardonable crimes, he convinces the Sultan to the success and practical exercise of his socio-political policies. Tughlaq realizes his whims and impossible dreams and feels so restless that he calls himself mad. Ginish Karnad tries to connect the past historio-political conditions with the post-independence historio political conditions of India: 'The correspondence between Tughlaq and Mrs. Indira Gandhi during the emergency are highlighted in Prasanna's production in the last 70's . It is, as we know, a costume play and a play with nearly fifty characters and the echoes of religion and politics, mixing of religion and politics are sounds heard today in Indian Politics, (Remamoorthi, PP.5-6). Credit goes to the artistic genius and dramaturgy of Karnad who adds a new dimension to the controversial reign of Tughlaq by combining facts with fiction. He asserts that highly visionary and liberal dreams of all great rulers turn into futile in such a multi-racial and multi-religions country like India. In other words, 'The theme of the play (Tughlaq), like human life, is as ancient as it is fresh. The problem of the play present is man's beastliness in aspiring for divinity. The problem is not discussed as polemics, but it is manifested through characters and situations. And this is the strong point of the play (Kurtkoti, P.50)

Karnad's third famous drama, Hayavadana is based on the story of both the western and eastern sources - a novella, The Transposed Heads by Thomas Mann and the legend of the Kathasaritsagar. This drama has been a direct contribution to the theatre of roots', a powerful Theatrical movement from 1960 to 1970 to decolonize the Indian Theatre. At that time, the play wrights of India tried to rivive religious retuals, old folk tales and classical tradition of the early Vedic dramas. The plot of Hayavadana is divided into three parts - an invocation to lord Ganesha who stands as for the completeness of life as for the incompleteness of body, the appearance of Bhagavata, the visual story-teller and sudden interruption of Hayavadana and a boy. Bhagavata introduces the story of love triangle, enacted between two young men and friends, Devadatta and Kapila with a beautiful lady named Padmini. The centre of action is Dharmapura, but before the story moves, Hayavadana enters with horse's head on his human body. Bhagavata suggests him to visit the temple of Kali for the completeness of life either as a horse or a man. In his own traditional, classical style with chorus, Bhagavata narrates visually how Devadutta, a Brahmin scholar marries Padmini with the help of his muscular friend, Kapila. Both Devadatta and Kapila are highly infatuated with Padmini, and during their visit to kali temple in Ujjain, they cut off their heads as a matter of penance. With the grace of Goddess Kali, Padmini revives them with life, but she puts Kapila's head on Devadatta's body and Devedatta's on Kapila body. Thus, they suffer from the incompleteness of life due to the conflict between body and soul. When the conflict between body and head becomes unbearable, they kill each other and Padmini commits sati by throwing herself on their funeral pyre. When the story of the love-triangle is completed, Hayavadana returns to the stage with Padmini's son. Now Hayavadana is a complete horse, but still he sings and laughs with human voice. As he laughs, responding to the laughter of the boy, his voice turns into neighing. Thus, Hayavadana and the play gain completeness with the grace of God. Through the conflict between body and soul in various characters of the play, Karnad suggests that human beings always suffer from the incompleteness or imperfection of life, and only animal and divine being like lord Ganesha achieve perfection because they are completely satisfied with their given identities. Karnad highlights this philosophy of duality by employing the dramaturgy of Metatheatre, Masques, Chorus and folk- song. The mythical title, 'Hayavadana' is highly appropriate since Hayavadana achieves completeness when he loses the human voice by singing the Indian National Anthem. But for human being, who is a combination of flesh and sprit, body and mind, completeness requires a harmonious relationship between body and mind but cartesian division seems to be a perennial irresolvable problem for man. The major reality of this world is self-division. Both man and society are self-divided and disturbing antinomies struggle for supremacy. The problem of Hayavadana, alienation, absurdity, incompleteness, and search for identity are central of the plays of Karnad (Dwivedi, P.-234)

After writing these philosophical plays based on myth and folktale, Karnad turned his dramatic genius to interpret the existential dilemma, rootlessness and loneliness of human life and cultural clashes of the post-modern, cosmopolitan society. The word 'Cosmopolitan' has both positive and negative connotations because it stands as much for the technical and industrial progress as for the erosion of the basic human values, required essentially for the indigenous cultural identity. In the Indian context, the concept of 'Cosmopolitan' culture reveals the image of the West, determined with a global language and an accessible, set of goods, supported by money culture. The three later plays of Karnad, A Heap of Broken Images (2004), Wedding Album (2009) and Boiled Beans on Toast (2014), depict the dystopian view of cosmopolitan culture with conflicting individuals, preying upon each other and confronting their soaring aspirations, hasty decisions and endless frustrations.

`   Karnad's A heap of Broken Images deals with the sibling's rivalry, caused by the issue of bilingualism in the cosmopolitan society. The politics of language in Indian literary culture has almost generated a kind of class-struggle between the celebrated writers in English and the common writes of regional language. Through the psychological problems of sibling writers and their rivalry, inferiority complex and resentment and long suppressed guilt of a celebrated writer of English Novel, Manjula Nayak, Karnad exposes the anxiety of the local-language writers over writers in English as well as the hypocrisy of media-hype. The tension between two sister, Manjula and Milini, stands for the competition between regional language writers and Indo-English writes in the context of Indian literary scree. Malini is physically challenged, suffering from Meningo mucocele right from her birth, and naturally she re- mains confined to her wheelchair. Intellectually, she is superior to Manjula, but her novel in English has been published by Manjula on her name after the death of Malini. When the drama opens, Manjula has been a celebrity, the success of the novel in English, The River Has No Memories has been celebrated as the best seller novel. Manjula delivers her speech as the celebrated writer of the English novel, but after that she disconnects the transmission on the plasma and other T.V. sets. The reflection of her inner bogus self starts rebuking her for taking the credit of Malini's novel. In a guilt-ridden mood, she confesses to herself that Malini's talent would be continued to exist by the name of Manjula Nayak. Indirectly, Karnad exposes the hollowness of the virtual reality. At the same time, he also raises a debate over the politics of language in Indian literary culture. According to Karnad, '... many Kannada writers are upset about the money that Indian English writers earn, the publicity they get, there is something theatrical about all this so I used it. (quote in Basu, P. 254)

Karnad's Wedding Album depicts the fundamental of the traditional Indian wedding and its mockery in the cosmopolitan culture. Karnad himself confesses that he has been thinking about writing wed- ding album for over forty years now. He had first thought about it when his sister got married in 1963. The scene of this play is the typical house- hold area of a Saraswat Brahmin middle-class family, headed by Mr. and Mrs. Nadkami. The elder daughter is already married to the person, working in Australia, and the arrangement of the younger daughter, Vidula, is going on. The old-fashioned written bio-data is replaced with video- conferencing since we find vidula, trying to impress her NIR would be groom, Ashwin Panje through video-camera. Ashwin is happy to get a chaste, traditional Indian bride like Vidula without knowing the fact that she is already enjoying the game of pornographic cyber-sex. Mr. & Mrs. Nadkami oppose their son, Rohit's inclination for a Christian girl, Isabella and convince him to marry Tapasya for his future prosperity. Through various attitudes to marriage and married life, Karnad explores the validity of the arranged marriage in a fast-changing multicultural world.

Karnad's latest play, Boiled Beans on Toast portrays the devastating affect of globalization and urbanization on the modern Indian family. This drama moves round the members of the privileged Padabidri family and their hollow, bitter relationships with one another. The Padabidri family lives in the prosperous, cosmopolitan city of Bengaluru where each and every relationship is identified with superficial manners, social hypocrisy and money-culture. The central character of this drama is Anjana who suffers from loneliness, since her husband is more devoted to commercial life than to family sentiments. Her friend, Dolly undergoes the burden of a loveless life. The mother-in law of Anjana, Anusuya, trots with her life by betting money in horse race-course, and her son, Kunal develops deliberately a passion for musical notes on guitar, neglecting the family's interest in Veena playing. Each and every character seems to be ambitious and opts for an endless path of life's fulfilment. Even the servants of the family, Vimala and Muttu, are opportunists and selfish and they try to grab each other's profitable positions. The drama reflects the searing saga of a modern conflicting metropolis.

Conclusion

Karnad's journey from Yayati to Boiled Beans on Toast justifies his dynamic evolution in his dramatic genius, and it is no wonder that he has been hailed as a Renaissance man in the field of Indo-English drama. He belongs as much to the group of regional dramatist as those of inter- national repute since he used to write both in Kannada and English. His childhood experiences of Natak Mandalis and Yakshagana produced such an everlasting impressions on his mind that they finally culminated into traditional Indian drama with myths and legends. His reinterpretations of the old myths in the modern context constitute his unique contribution to the Indo-English drama. At the same time, he did also remain concerned with the fast-changing socio-cultural scenario of modern In- dia. In the words of Gill, '... he (Kanarad) combines the past and the present into a unity that bespeaks of tradition and modernity in his art of play writing (Gill, P. 8)

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Environmental pollution poses significant challenges globally, affecting air, water, soil, and climate systems with profound implications for ecosystems and human health. Air pollution, stemming from industrial emissions, vehicle exhaust, and agricultural practices, leads to respiratory diseases and cardiovascular complications, impacting millions annually. Water pollution, exacerbated by industrial effluents, agricultural runoff, and inadequate sanitation, jeopardizes freshwater ecosystems and endangers drinking water quality, exacerbating health risks. Soil contamination, resulting from industrial activities and improper waste disposal, compromises agricultural productivity and food safety. Plastic pollution, driven by inadequate waste management, threatens marine life and human health through micro plastic ingestion. Noise pollution, originating from urbanization and transportation, disrupts ecosystems and poses health risks to humans, including stress and hearing impairments. Additionally, greenhouse gas emissions contribute to climate change, altering global weather patterns and exacerbating environmental degradation. Addressing these challenges demands integrated approaches encompassing policy reforms, technological innovations, sustainable practices, and public awareness to safeguard environmental integrity and human well-being globally.

Key Words- Environmental, jeopardize, compromises, contamination, Soil

Introduction
Pollution in the environment remains a critical global issue with significant impacts on ecosystems, human health, and biodiversity. Here are some key aspects and concerns related to environmental pollution:
1. **Air Pollution:** Emissions from industries, vehicles, agriculture, and residential sources contribute to air pollution. Particulate matter (PM), nitrogen oxides (NOx), sulfur dioxide (SO2), ozone (O3), and volatile organic compounds (VOCs) are among the pollutants that degrade air quality, leading to respiratory diseases, cardiovascular problems, and even premature death.
2. **Water Pollution:** Contamination of freshwater bodies (rivers, lakes, and groundwater) by industrial effluents, agricultural runoff (pesticides and fertilizers), untreated sewage, and plastics threatens aquatic life and affects human populations dependent on clean water sources. Water pollution also impacts ecosystems and biodiversity.
3. **Soil Pollution:** Soil contamination from industrial activities, mining, improper waste disposal, and agricultural practices (excessive use of pesticides and fertilizers) degrades soil quality, reduces fertility, and can lead to the accumulation of toxic substances in food crops.
4. **Plastic Pollution:** Improper disposal and inadequate recycling of plastic waste have led to widespread plastic pollution in oceans, rivers, and terrestrial environments. Microplastics pose risks to marine life and may enter the food chain, potentially impacting human health.
5. **Noise Pollution:** Urbanization, transportation, industrial activities, and recreational events contribute to noise pollution, which can have detrimental effects on wildlife, human health (causing stress, hearing impairment, and sleep disturbances), and overall quality of life.
6. **Climate Change:** While not a traditional form of pollution, greenhouse gas emissions (e.g., carbon dioxide, methane) from human activities contribute to climate change. This leads to rising global temperatures, sea-level rise, altered weather patterns, and more frequent extreme weather events, impacting ecosystems and communities worldwide.

Addressing environmental pollution requires concerted efforts at local, national, and global levels. Solutions include stricter regulations and enforcement, adoption of cleaner technologies, promotion of renewable energy sources, sustainable agriculture practices, waste reduction and recycling, and public awareness campaigns. International cooperation is essential to mitigate pollution's transboundary impacts and achieve sustainable development goals aimed at preserving and restoring environmental quality for future generations.

Air pollution has significant health and environmental effects, impacting both human well-being and the natural world in various ways:

Health Effects:

1. **Respiratory Issues:** Inhalation of pollutants such as particulate matter (PM), nitrogen dioxide (NO2), sulfur dioxide (SO2), and ozone (O3) can lead to respiratory diseases such as asthma, bronchitis, and aggravated symptoms in people with pre-existing conditions.
2. **Cardiovascular Problems:** Air pollution is linked to cardiovascular diseases like heart attacks and strokes. Fine particles can enter the bloodstream and affect the heart and blood vessels.
3. **Cancer:** Long-term exposure to certain air pollutants, such as benzene and formaldehyde, increases the risk of developing cancer, particularly lung cancer.
4. **Neurological Effects:** There is emerging evidence linking air pollution exposure to neurological disorders such as Alzheimer's and Parkinson's diseases, possibly due to inflammation and oxidative stress.
5. **Reproductive and Developmental Effects:** Pregnant women exposed to air pollution may experience adverse birth outcomes, including low birth weight and preterm birth. Children exposed to pollutants may suffer from developmental delays and impaired cognitive function.

Environmental Effects:

1. **Ecosystem Damage:** Acid rain, resulting from sulfur dioxide and nitrogen oxides emissions, damages forests, freshwater ecosystems, and soil quality. It disrupts the balance of nutrients and can lead to the decline of sensitive species.
2. **Climate Change:** Some air pollutants, like black carbon and methane, contribute to global warming and climate change by trapping heat in the atmosphere (greenhouse gases).
3. **Ozone Depletion:** Certain pollutants, such as chlorofluorocarbons (CFCs), can deplete the ozone layer, which protects life on Earth from harmful ultraviolet (UV) radiation.
4. **Visibility Reduction:** Particulate matter and other pollutants reduce visibility, impacting scenic landscapes, tourism, and the quality of life in urban areas.

Mitigation Strategies:

1. **Regulations and Policies:** Governments enforce emission standards, vehicle regulations, and industrial controls to limit pollutants.
2. **Technological Solutions:** Advancements in cleaner technologies, renewable energy sources, and improved vehicle emissions standards help reduce air pollution.
3. **Awareness and Education:** Public awareness campaigns educate communities about the health risks of air pollution and promote individual actions to reduce emissions.
4. **International Cooperation:** Global agreements, such as the Paris Agreement, aim to reduce greenhouse gas emissions and mitigate climate change impacts, indirectly addressing air pollution.

Addressing air pollution requires concerted efforts from individuals, industries, and governments to protect human health and safeguard the environment for future generations.

Air Pollution: -

Air pollution has several profound environmental effects, impacting ecosystems, biodiversity, and the Earth's climate system in significant ways:

1. **Ecosystem Damage:**
   - **Acid Deposition:** Pollutants like sulfur dioxide (SO2) and nitrogen oxides (NOx) contribute to acid rain formation when they react with water vapor in the atmosphere. Acid rain can acidify soils, lakes, and streams, affecting plant health and aquatic life.
   - **Toxic Deposition:** Heavy metals, such as lead and mercury, released into the air settle onto soils and water bodies, posing toxicity risks to plants, animals, and humans.
   - **Nutrient Imbalance:** Nitrogen deposition from pollutants disrupts natural nutrient cycles in ecosystems, altering soil fertility and impacting plant growth.

2. **Biodiversity Loss:**
   - **Habitat Degradation:** Air pollutants contribute to habitat destruction and alteration, reducing suitable habitats for many species.
   - **Species Vulnerability:** Pollutants can directly harm wildlife through inhalation or ingestion, leading to reduced reproductive success and population declines.
   - **Ecosystem Disturbance:** Changes in plant and animal communities due to air pollution can disrupt ecosystem functions and lead to imbalances in food webs.

3. **Climate Change:**
   - **Greenhouse Gas Emissions:** Pollutants like carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) contribute to the greenhouse effect, trapping heat in the atmosphere and leading to global warming.
   - **Black Carbon:** Particulate matter, including black carbon (soot), deposited on snow and ice surfaces reduce their reflectivity (albedo), accelerating melting and contributing to polar ice cap and glacier retreat.

4. **Ozone Depletion:**
   - **Stratospheric Ozone Depletion:** Chlorofluorocarbons (CFCs) and other ozone-depleting substances released into the atmosphere can break down ozone molecules in the stratosphere, leading to the formation of the ozone hole and increasing exposure to harmful UV radiation on Earth's surface.

5. **Aesthetic and Economic Impact:**
   - **Visibility Reduction:** Air pollutants decrease visibility, impacting scenic landscapes, tourism, and the quality of life in urban and rural areas.
   - **Economic Costs:** The environmental damage caused by air pollution, including health care expenses, lost productivity, and ecosystem restoration, imposes significant economic burdens on societies.

Mitigation and Solutions:
Addressing these environmental effects requires comprehensive strategies:
- **Emission Reduction:** Implementing strict emission standards for industries, vehicles, and power plants to reduce pollutant release.
- **Renewable Energy Adoption:** Promoting clean energy sources such as wind, solar, and hydroelectric power to reduce reliance on fossil fuels.
- **International Agreements:** Participation in global agreements like the Montreal Protocol and the Paris Agreement to phase out ozone-depleting substances and mitigate climate change impacts.
- **Technological Innovation:** Investing in research and development of cleaner technologies and sustainable practices to minimize environmental impacts.
- **Public Awareness:** Educating the public about the environmental consequences of air pollution and encouraging individual actions to reduce emissions.

By addressing air pollution comprehensively, societies can mitigate its environmental impacts and protect ecosystems, biodiversity, and the Earth's climate system for future generations.

Environmental Effects: -
Air pollution has several significant environmental effects that impact ecosystems, biodiversity, and natural resources:
1. **Damage to Vegetation:**
   - **Ozone Damage:** Ground-level ozone (O3) can damage plant tissues, affecting their growth, reproduction, and overall health. This damage is particularly noticeable in sensitive plant species, including crops and forests.
   - **Acid Deposition:** Nitrogen oxides (NOx) and sulfur dioxide (SO2) emissions contribute to acid rain formation. Acid rain can leach nutrients from the soil, weaken plant defenses, and directly damage leaves and stems.
2. **Water Pollution:**
   - **Acidification:** Acid rain, caused by pollutants like sulfur dioxide and nitrogen oxides, can acidify water bodies such as lakes, rivers, and streams. This acidification affects aquatic ecosystems, impacting fish populations and other aquatic organisms.
   - **Toxic Contamination:** Pollutants such as heavy metals (e.g., lead, mercury) can settle in water bodies through atmospheric deposition, posing risks to aquatic life and potentially contaminating drinking water sources.
3. **Biodiversity Loss:**
   - **Habitat Degradation:** Air pollution contributes to the degradation of natural habitats through direct damage to plants and soil, which in turn affects wildlife that depend on these habitats.
   - **Species Vulnerability:** Pollution can weaken immune systems and increase susceptibility to diseases in wildlife populations. It can also disrupt reproductive patterns and lead to population declines in sensitive species.
4. **Climate Change Contribution:**
   - **Greenhouse Gas Emissions:** Air pollutants like carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) contribute to global warming by trapping heat in the atmosphere. This leads to changes in temperature patterns, altered precipitation regimes, and impacts on ecosystems and biodiversity.
   - **Black Carbon Deposition:** Particulate matter containing black carbon can settle on ice and snow surfaces, reducing their reflectivity (albedo). This accelerates melting in polar regions and contributes to sea level rise.
5. **Ecosystem Disturbance:**
   - **Nutrient Imbalance:** Excessive nitrogen deposition from air pollutants can disrupt nutrient cycles in ecosystems, altering soil chemistry and affecting plant composition and diversity.
   - **Changes in Soil Quality:** Pollutants can degrade soil quality over time, affecting its ability to support plant growth and sustain ecosystem functions.

Mitigation Strategies:
To mitigate these environmental effects, actions can be taken at local, national, and international levels:
- **Regulatory Measures:** Implementing and enforcing stringent air quality standards and emission controls for industries, vehicles, and power plants.
- **Promotion of Clean Technologies:** Investing in and promoting the use of clean energy sources such as wind, solar, and hydroelectric power to reduce reliance on fossil fuels.
- **Reforestation and Habitat Restoration:** Restoring degraded habitats and planting trees can help mitigate air pollution effects by absorbing pollutants and improving air quality.
- **International Cooperation:** Participating in global agreements and initiatives (e.g., Paris Agreement, Montreal Protocol) to reduce greenhouse gas emissions and phase out ozone-depleting substances.
- **Public Awareness and Education:** Increasing public awareness about the environmental impacts of air pollution and promoting sustainable practices that reduce emissions and protect ecosystems.

By addressing air pollution comprehensively, societies can minimize its adverse environmental effects and safeguard ecosystems, biodiversity, and natural resources for future generations.

Environmental issues: -
Environmental issues encompass a wide range of concerns that affect our planet's ecosystems and the well-being of living organisms. Here are some key environmental issues:
1. **Climate Change:** The warming of the Earth due to human activities such as burning fossil fuels and deforestation, leading to consequences like sea-level rise, extreme weather events, and habitat loss.
2. **Loss of Biodiversity:** Decline in the variety of plant and animal species worldwide, often due to habitat destruction, pollution, climate change, and invasive species.

3. **Pollution:** Contamination of air, water, and soil by harmful substances like chemicals, plastics, and heavy metals, impacting human health and ecosystems.
4. **Deforestation:** Clearing of forests for agriculture, logging, and urban development, leading to habitat loss, carbon emissions, and disruption of ecosystems.
5. **Water Scarcity:** Decrease in availability of fresh water due to pollution, overuse, and climate change, affecting agriculture, ecosystems, and human populations.
6. **Ocean Acidification:** Increased acidity of the oceans due to absorption of carbon dioxide from the atmosphere, which threatens marine life like corals and shellfish.
7. **Ozone Layer Depletion:** Thinning of the ozone layer in the stratosphere due to chemicals like chlorofluorocarbons (CFCs), leading to increased UV radiation reaching the Earth's surface.
8. **Waste Management:** Improper disposal of waste, including plastic waste, electronic waste (e-waste), and hazardous waste, causing environmental pollution and health risks.
9. **Overfishing:** Depletion of fish stocks in oceans and freshwater bodies due to unsustainable fishing practices, threatening marine biodiversity and food security.
10. **Urbanization and Land Use Change:** Expansion of cities and infrastructure leading to loss of natural habitats, fragmentation of ecosystems, and altered landscapes.

Addressing these environmental issues requires collective action at local, national, and global levels, including policy changes, technological innovations, conservation efforts, and individual actions to promote sustainability and protect our planet for future generations.

Environmental and Health Impacts of Air Pollution: A Review

Air pollution has profound impacts on both the environment and human health, making it a critical issue globally. Here's a review of its environmental and health impacts:

Environmental Impacts:
1. **Climate Change:** Air pollutants such as carbon dioxide (CO_2), methane (CH_4), and black carbon contribute to global warming and climate change by trapping heat in the atmosphere.
2. **Acid Rain:** Emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) can lead to acid rain, which acidifies soils and water bodies, impacting aquatic ecosystems and vegetation.
3. **Ozone Depletion:** Some air pollutants, like chlorofluorocarbons (CFCs), contribute to the depletion of the ozone layer in the stratosphere, increasing UV radiation reaching the Earth's surface.
4. **Eutrophication:** Nitrogen compounds from air pollution can contribute to eutrophication of water bodies, leading to algal blooms and oxygen depletion, which harms aquatic life.
5. **Damage to Ecosystems:** High concentrations of pollutants can damage vegetation, affecting plant growth, crop yields, and forest health, thereby disrupting ecosystems

Health Impacts:
1. **Respiratory Diseases:** Inhalation of pollutants such as particulate matter (PM), ozone (O_3), and nitrogen dioxide (NO_2) can cause or exacerbate respiratory diseases like asthma, bronchitis, and lung cancer.
2. **Cardiovascular Effects:** Air pollution is linked to cardiovascular diseases, including heart attacks and strokes, due to its impact on blood pressure, inflammation, and clotting factors.
3. **Neurological Effects:** Some pollutants, such as lead and mercury, can affect neurological development in children and adults, leading to cognitive impairments and behavioral disorders.
4. **Cancer:** Long-term exposure to certain air pollutants, such as benzene and formaldehyde, is associated with increased risks of cancer, including lung cancer and Leukemia.
5. **Reproductive and Developmental Effects:** Exposure to air pollutants during pregnancy can lead to adverse effects on fetal development, including low birth weight and developmental disorders.
6. **Mortality:** Air pollution is a significant contributor to premature death globally, particularly in urban areas with high concentrations of pollutants.

Socioeconomic Impacts:
1. **Healthcare Costs:** Treating illnesses related to air pollution imposes substantial costs on healthcare systems and economies.
2. **Work Productivity:** Poor air quality can reduce work productivity due to increased absenteeism and decreased cognitive function.
3. **Quality of Life:** Living in areas with high air pollution levels can reduce overall quality of life, affecting outdoor activities and community well-being.

Addressing air pollution requires comprehensive strategies, including regulatory measures to reduce emissions from industrial sources, transportation, and household activities. Promoting cleaner technologies, enhancing public transportation, and increasing green spaces can help mitigate both environmental and health impacts, ensuring a healthier and sustainable future.

Conclusion: -
Environmental pollution problems are created political and social pressure to prevent pollution. Many industrial sectors have caused environmental pollution. Pollution prevention approaches can be applied to all pollution-generating sectors; however, this is difficult for many industrial sectors, including agriculture and food. Instead, waste valorization is a much more effective approach to preventing pollution. A vast amount of agricultural by-products is generated as a result of the operation of the food industries. These by-products with potential antioxidant and antimicrobial activities have been used as enrichment agents in functional food formulations. Of course, the use of by-products as a food additive is not the only option. Other alternative usages such as fertilizer, fuel, or as a carbon source for many applications have been taken into account. A nanotechnology is a novel approach for the valorization of agro-waste by-products. Extending the production of antimicrobial and antioxidant agents from wastes via nanotechnology is important for the utilization of

waste and the production of environmentally friendly materials, due to the negative perception of the consumer to synthetic antioxidant, the emergence of antibiotic-resistant strains, and the high price of antimicrobial agents which reduced the growth of spoilage and pathogenic bacteria. In this sense, nanoparticles with antioxidant and antimicrobial properties can be produced from agro-industrial by-products. Soon, it is believed that new nanoparticles with antimicrobial and antioxidant properties will be synthesized from agricultural by-products and they will be used to increase the shelf life of foods and improve their functionality.

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Abstract: Cardiovascular diseases (CVDs) are a leading cause of global mortality, affecting not just India but the world at large. Addressing this requires reliable diagnostics. Machine learning methods are increasingly vital for analyzing medical data, aiding in heart disease diagnosis. This paper surveys various machine learning models, focusing on their effectiveness, especially supervised learning algorithms like SVM, KNN, Naïve Bayes, DT, RF, and ensemble methods. Its goal is to enhance the prediction of cardiovascular disease diagnosis and treatment efforts by distilling insights from existing models.

Keywords: Heart Disease, Machine Learning Technique, Support Vector Machines, K-Nearest Neighbor, Logistic Regression, Cardiovascular Disease, Decision Tree, Random Forest.

Introduction

The survey aims to extract insights from current models to improve the prediction and diagnosis of cardiovascular diseases, which annually claim around 18.8 million lives globally, constituting roughly 33% of all global deaths. In India, that is a leading cause, taking 1.9 million lives. Heart diseases cost $265 billion in India from 2005-2018. The heart, a vital organ, pumps blood throughout the body, and any malfunction can quickly lead to fatal consequences. Factors such as lifestyle changes, work stress, and poor diets contribute to the rising incidence of heart-related illnesses. Accurate prediction of heart diseases is crucial. Machine learning techniques have become essential for extracting meaningful insights from vast datasets that exceed human processing capabilities, offering valuable tools for predicting the presence or absence of heart-related conditions.

In the background details the Machine learning, deep learning, and data mining are widely used in healthcare, especially for heart disease research. Section "literature Review" reviews existing literature and research methods, provides a literature review and systematic study of existing models. Also offers a comprehensive analysis of clinical and environmental factors and their impacts.

In the next section, we outline the resources and methodologies used in our study. Firstly, we explain the dataset and our data handling approach. Then, we detail the pre-processing steps applied to the data. Finally, we delve into the analytical models used in our study and offer insights into their functioning.

In the experimental result which is in the section Experiment and Result, we utilized the Random Forest Classifier to predict heart disease presence or absence in a dataset with various health-related features. This section unveils the outcomes of our investigation, focusing on the Random Forest algorithm from the scikit-learn library. We evaluate its predictive performance using metrics like accuracy, precision, recall, and F1 score, comparing it with other machine learning algorithms. Beyond traditional metrics, we explore its ability to handle complex relationships and interpret-ability. Through this analysis, we aim to contribute to informed decision-making in cardiovascular risk assessment using machine learning.

Literature Review

From the papers we have studied for this survey which are in the reference section, we have come across that these studies encompass various approaches to predicting heart disease using machine learning and data mining techniques. Golas et al. (2018) developed a model to predict 30-day readmission in heart failure patients using electronic medical records, while Patel et al. (2015) focused on heart disease prediction using machine learning methods. Ramalingam et al. (2018) surveyed machine learning techniques for heart disease prediction, while Repaka et al. (2019) implemented a heart disease prediction system using naive Bayesian classification. Rutter and Gatsonis (2001) proposed a hierarchical regression approach for meta-analysis of diagnostic test accuracy evaluations, potentially applicable in heart disease diagnostics. Samagh and Singh (2022) explored ensemble methods for heart disease prediction, while Sharean and Johncy (2022) reviewed deep learning models in heart disease estimation. Lastly, Sharmila and Chellammal (2018) suggested conceptual methods to enhance heart disease prediction using data techniques. Together, these studies offer a broad perspective on the application of machine learning and data mining in predicting heart disease, from data analysis to model implementation and enhancement strategies.

Table 1: Comparison of the previous works

Ref No	Method	Key Findings	Dataset	Challenges
1. [1]	FCMIM(Feature Selection Algorithm), SVM	Enhancing the accuracy of the heart disease dataset's results is a key goal	Heart Disease Dataset (Cleveland)	Perform better merely for a small dataset
2. [2]	Machine Learning(ML), iPSCs and Omics	Improved throughput	Dataset of Heart Disease (Clinical)	A limited number of parameters were utilized
3. [3, 9]	Deep Learning, Neural Network	Better precision	Online UCI Dataset	Limited Dataset
4. [4, 7]	IoT(Internet of things), Machine Learning Methods, SVM	Accuracy (97.5 %)	Dataset of heart Disease	Very less feature
5. [5, 10]	Feature extraction involved a combination of an Adaboost classifier and Principal Component Analysis (PCA)	Prediction accuracy improved	Online Clinical Dataset	Time and Accuracy
6. [8, 6]	k-NN algorithm	Feature selection and Classification	Dataset of Kaggle	Enhancing the categorization of features is possible

Methodology

In this section, we elucidate the methodology employed in this study. The flow chart presented in Figure 1 illustrates the proposed system utilized for detecting influenza disease epidemics using collected Arabic tweets. We partitioned the collected data into two categories: invalid tweets unrelated to influenza and valid tweets pertaining to influenza. The dataset includes tweets, their respective locations, and corresponding ground truth labels. We conducted an analysis on the collected tweets from Twitter, considering various Arabic countries as locations. Additionally, we applied preprocessing techniques such as tokenization, stop word filtering, n-grams, and stemming to the data. Subsequently, we compared the performance of several data mining techniques, including Support Vector Machine (SVM), Naive Bayes (NB), K-nearest neighbor (k-NN), and Decision Tree (DT), based on their accuracy values.
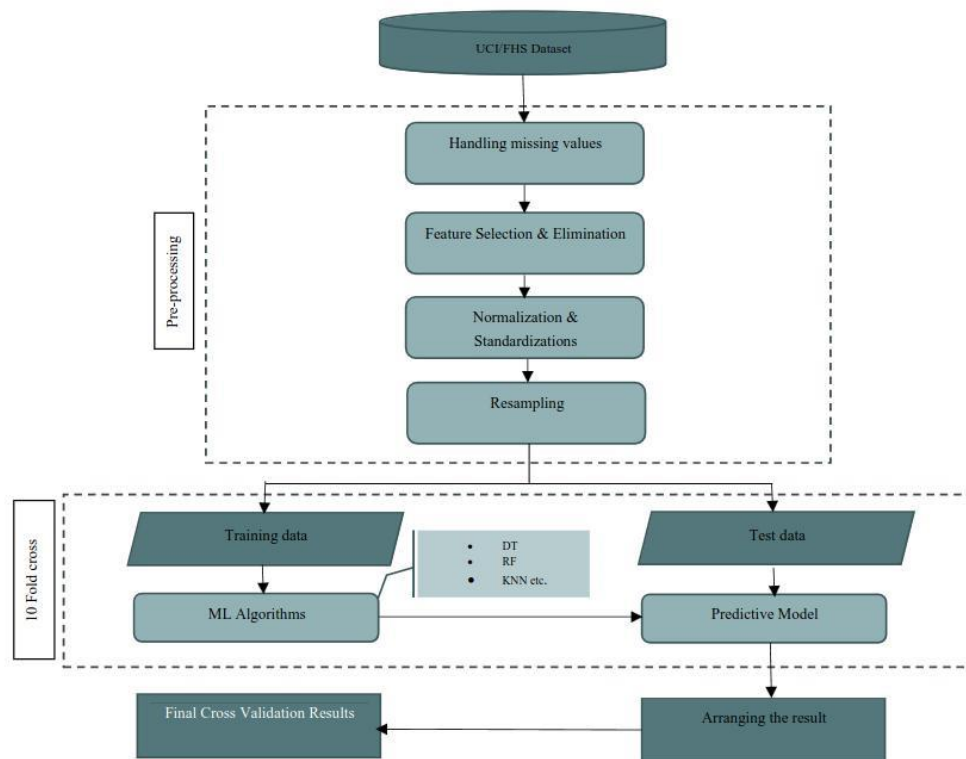
Figure 1: Illustrated Work Process

3.1 Data Collection

The dataset used in this analysis was sourced from Kaggle, a website that provides data for research and study purposes. This dataset originated in 1988 and comprises four distinct databases, namely Cleveland, Hungary, Switzerland, and Long Beach V. It encompasses a total of 76 attributes, with one attribute specifically indicating the presence of heart disease in the patient. However, all published experiments in this analysis focus on utilizing a subset of 18 attributes shown in Figure 2. The "target" field represents the indication of heart disease presence in the patient. It has total of 319795 rows.

	HeartDisease	BMI	Smoking	AlcoholDrinking	Stroke	PhysicalHealth	MentalHealth	DiffWalking	Sex	AgeCategory	Race	Diabetic	PhysicalActivity	GenHealth	SleepTime	Asthma	KidneyDisease	SkinCancer
0	No	16.60	Yes	No	No	3.0	30.0	No	Female	55-59	White	Yes	Yes	Very good	5.0	Yes	No	Yes
1	No	20.34	No	No	Yes	0.0	0.0	No	Female	80 or older	White	No	Yes	Very good	7.0	No	No	No
2	No	26.58	Yes	No	No	20.0	30.0	No	Male	65-69	White	Yes	Yes	Fair	8.0	Yes	No	No
3	No	24.21	No	No	No	0.0	0.0	No	Female	75-79	White	No	No	Good	6.0	No	No	Yes
4	No	23.71	No	No	No	28.0	0.0	Yes	Female	40-44	White	No	Yes	Very good	8.0	No	No	No
5	Yes	28.87	Yes	No	No	6.0	0.0	Yes	Female	75-79	Black	No	No	Fair	12.0	No	No	No
6	No	21.63	No	No	No	15.0	0.0	No	Female	70-74	White	No	Yes	Fair	4.0	Yes	No	Yes
7	No	31.64	Yes	No	No	5.0	0.0	Yes	Female	80 or older	White	Yes	No	Good	9.0	Yes	No	No
8	No	26.45	No	No	No	0.0	0.0	No	Female	80 or older	White	No, borderline diabetes	No	Fair	5.0	No	Yes	No
9	No	40.69	No	No	No	0.0	0.0	Yes	Male	65-69	White	No	Yes	Good	10.0	No	No	No

Figure 2: Figure of the dataset and features

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 319795 entries, 0 to 319794
Data columns (total 18 columns):
 #   Column            Non-Null Count   Dtype
---  ------            --------------   -----
 0   HeartDisease      319795 non-null  object
 1   BMI               319795 non-null  float64
 2   Smoking           319795 non-null  object
 3   AlcoholDrinking   319795 non-null  object
 4   Stroke            319795 non-null  object
 5   PhysicalHealth    319795 non-null  float64
 6   MentalHealth      319795 non-null  float64
 7   DiffWalking       319795 non-null  object
 8   Sex               319795 non-null  object
 9   AgeCategory       319795 non-null  object
 10  Race              319795 non-null  object
 11  Diabetic          319795 non-null  object
 12  PhysicalActivity  319795 non-null  object
 13  GenHealth         319795 non-null  object
 14  SleepTime         319795 non-null  float64
 15  Asthma            319795 non-null  object
 16  KidneyDisease     319795 non-null  object
 17  SkinCancer        319795 non-null  object
dtypes: float64(4), object(14)
memory usage: 43.9+ MB
```

Figure 3: Summery of Dataframe and Structure

3.2   Pre-processing

Is a method used to obtain complete, consistent, and understandable data. The quality of the data directly affects the results we get from machine learning algorithms. When the data is of good quality, it leads to better decision-making. Therefore, we integrate the FHS dataset using various pre-processing step

– First, we consider feature selection. Some features may not contribute much to the model's performance and can decrease the learning rate. So, it's crucial to select the most relevant features that help us predict the desired results. In the FHS dataset, using an automatic feature selection method might have excluded important features. Therefore, we adopt an analytical approach to ensure better performance.

– Next, we handle missing values. The mean value is the most probable value for an attribute and it represents the average. Missing values in the FHS dataset are replaced with the mean value of the attribute. This helps us maintain the extreme values of the attribute while filling in the gaps.

In summary, preprocessing the FHS dataset involves selecting relevant features and replacing missing values with the mean. These steps are crucial in improving the performance of our model.

3.3 Classification

We have explored the supervised machine learning techniques employed in this study. A concise overview of the analytical approach is being provided, elucidating the functioning of Random Forest, Decision Trees, and K-Nearest Neighbors.

– Random Forest: Random Forest is an ensemble algorithm that constructs multiple decision trees using different data subsets and randomly selected features. The integration of predictions from these diverse decision trees reduces overfitting and enhances prediction accuracy. This algorithm is well-suited for handling complex datasets and delivering dependable results.

– Decision Trees: Decision Trees are simple yet potent algorithms that make decisions based on a sequence of rules inferred from the data. They create a tree-like structure by splitting the data using various attributes, leading to decisions at each node. The chosen attribute separates the data most effectively at each step, ultimately reaching a leaf node that provides the final prediction.

– K-Nearest Neighbors (KNN): K-Nearest Neighbors is a classification algorithm that operates on the principle of similarity. It assigns a new data point to the class most prevalent among its K nearest neighbors. The value of K determines the number of neighboring data points considered. KNN calculates the distance between data points to assess their similarity. This straightforward algorithm is particularly effective for small to medium-sized datasets.

– Support Vector Machines (SVM): Support Vector Machines (SVM) is a supervised machine learning algorithm used for classification and regression tasks. It excels in high-dimensional spaces and demonstrates robustness against overfitting. SVM's versatility is evident through its capacity to handle nonlinear relationships by employing different kernels. However, SVM can be computationally expensive, especially with large datasets, and demands careful parameter tuning. Additionally, it is sensitive to noisy data and lacks interpretability com-pared to other algorithms. Overall, SVM stands as a powerful tool for complex tasks, but it requires thorough consideration of computational resources and data quality.

Experiment and Result

We applied the Random Forest Classifier to predict the presence or absence of heart disease in a given dataset. The dataset contains various features related to individuals 'health, such as age category, sex, BMI, physical activity, and more. The target variable I 'heart_disease, 'where 1 indicates the presence of heart disease and 0 indicates the absence.

In this section, we present the outcomes of our investigation into the prediction of heart disease utilizing the Random Forest algorithm from the scikit-learn (sklearn) library. The preceding sections outlined the rationale for employing machine learning techniques, specifically the Random Forest model, in predicting cardiovascular outcomes. This section serves to unveil the empirical findings derived from the application of our model to a comprehensive dataset encompassing diverse patient profiles and cardiovascular parameters.

The experimental results are presented with a focus on evaluating the predictive performance of the Random Forest algorithm. We delve into key performance metrics such as accuracy, precision, recall, and F1 score to assess the model's overall effectiveness in identifying individuals at risk of heart disease. Additionally, a comparative analysis is undertaken to benchmark the Random Forest model against alternative machine learning algorithms commonly utilized in similar predictive tasks.

Our investigation extends beyond traditional performance metrics, as we explore the model's ability to handle complex relationships and non-linear patterns within the dataset. The inter-pretability of the Random Forest model is also scrutinized, shedding light on the key features driving predictions and providing valuable insights for clinical applicability.

The presentation of experimental results is structured to offer a nuanced understanding of the Random Forest algorithm's strengths and limitations in the context of heart disease prediction. Through this comprehensive analysis, we aim to contribute to the ongoing discourse in the field, providing a basis for informed decision-making and paving the way for future advancements in machine learning-driven cardiovascular risk assessment.

4.1 Preprocessing of the Dataset

Most of the features of the dataset are in the object data type, which are categorical types. We change the data types into integer type using level encoding. It has total of 319795 rows.

We have changed the data types of object type which are categorical into integer type by label encoding. We have used Label Encoder () function from scikit-learn library. The mappings are as follows:

The features with the 2 category which have 'yes 'and 'no 'as categories has given the value 0 and 1. 0 is for no and 1 is for yes. For 'sex '0 is Female and 1 is Male.

The other three features 'mappings which have more than 2 categories are as follows: For the age-category feature, mapping of categories to encoded values: '18-24': 0,

'25-29': 1,

'30-34': 2,

'35-39': 3,

'40-44': 4,

'45-49': 5,

'50-54': 6,

'55-59': 7,

'60-64': 8,

'65-69': 9,

'70-74': 10,

'75-79': 11,

'80 or older': 12

For race feature, mapping of categories to encoded values:

'American Indian/Alaskan Native': 0,

'Asian': 1,

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 319795 entries, 0 to 319794
Data columns (total 18 columns):
 #   Column            Non-Null Count   Dtype
---  ------            --------------   -----
 0   HeartDisease      319795 non-null  object
 1   BMI               319795 non-null  float64
 2   Smoking           319795 non-null  object
 3   AlcoholDrinking   319795 non-null  object
 4   Stroke            319795 non-null  object
 5   PhysicalHealth    319795 non-null  float64
 6   MentalHealth      319795 non-null  float64
 7   DiffWalking       319795 non-null  object
 8   Sex               319795 non-null  object
 9   AgeCategory       319795 non-null  object
 10  Race              319795 non-null  object
 11  Diabetic          319795 non-null  object
 12  PhysicalActivity  319795 non-null  object
 13  GenHealth         319795 non-null  object
 14  SleepTime         319795 non-null  float64
 15  Asthma            319795 non-null  object
 16  KidneyDisease     319795 non-null  object
 17  SkinCancer        319795 non-null  object
dtypes: float64(4), object(14)
memory usage: 43.9+ MB
```

Figure 4: Dataset before preprocessing

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 319795 entries, 0 to 319794
Data columns (total 18 columns):
 #   Column             Non-Null Count   Dtype
---  ------             --------------   -----
 0   BMI                319795 non-null  float16
 1   PhysicalHealth     319795 non-null  float16
 2   MentalHealth       319795 non-null  float16
 3   GenHealth          319795 non-null  int8
 4   SleepTime          319795 non-null  float16
 5   sex                319795 non-null  int8
 6   smoking            319795 non-null  int8
 7   alcohol_drink      319795 non-null  int8
 8   stroke             319795 non-null  int8
 9   diffWalking        319795 non-null  int8
 10  diabetic           319795 non-null  int8
 11  asthma             319795 non-null  int8
 12  kidney_disease     319795 non-null  int8
 13  skin_cancer        319795 non-null  int8
 14  physical_activity  319795 non-null  int8
 15  heart_disease      319795 non-null  int8
 16  age_category       319795 non-null  int8
 17  race               319795 non-null  int8
dtypes: float16(4), int8(14)
memory usage: 6.7 MB
```

Figure 5: Dataset after preprocessing

'Black': 2, 'Hispanic': 3,

'Other': 4,

'White': 5

For gen-health feature, mapping of categories to encoded values:

'Poor': 0,

'Fair': 1,

'Good': 2,

'Very good': 3,

'Excellent': 4

We loaded the dataset into a Data Frame. The target variable 'heart-disease 'was separated from the features, It has two values 0 and 1 where 0 means no heart disease and 1 means have a heart disease. The dataset was split into training (80%) and testing (20%) sets using the train-test-split method.

4.2 Exploratory Data Analysis (EDA)

We try to understand the relations between the features through extensive uses of EDA. We used matplot library and seaborn library for visualization, we also used numpy and pandas for statistical data analysis and also preprocessing.
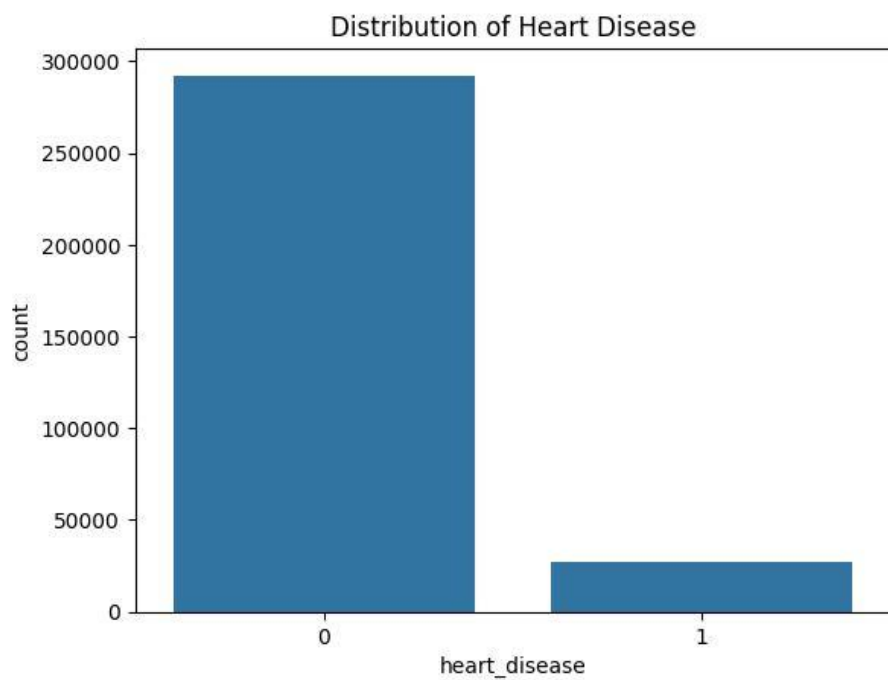
Figure 6: Heart Disease distribution

We can see in the Figure:9, the relationship between heart disease and smoking, physical activity, alcohol drinking, asthma. There we can see that more than 50% people who doesn't't smoke doesn't't suffer with heart disease, more than 70% people who does some kind of physical activity didn't't suffer through heart disease, more than 80% people who doesn't't drink alcohol did not suffer through heart disease, as for asthma about 80% has no asthma who didn't't suffer through heart disease.

We can See at the figure: 10 that the number of people who has heart disease increases as age increases.
The correlation matrix provides insights into the relationships between different variables in the dataset.

```
No Heart Disease, No smoking in %: 55.20755483981926
No Heart Disease, Smoking in %: 36.23289920105067
Heart Disease, No smoking in %: 3.5447708688378494
Heart Disease, Smoking in %: 5.014775090292218


No Heart Disease, No Physical Activity in %: 19.373035851092105
No Heart Disease, Physical Activity in %: 72.06741818977783
Heart Disease, No Physical Activity in %: 3.090729998905549
Heart Disease, Physical Activity in %: 5.468815960224519


No Heart Disease, No Alcohol Drinking in %: 84.98757016213511
No Heart Disease, Alcohol Drinking in %: 6.452883878734815
Heart Disease, No Alcohol Drinking in %: 8.202754889851311
Heart Disease, Alcohol Drinking in %: 0.3567910692787567


No Heart Disease, No Asthma in %: 79.57691646210854
No Heart Disease, Asthma in %: 11.863537578761393
Heart Disease, No Asthma in %: 7.016995262590096
Heart Disease, Asthma in %: 1.542550696539971
```

Figure 7: Comparision of different lifestyle[7, 4]
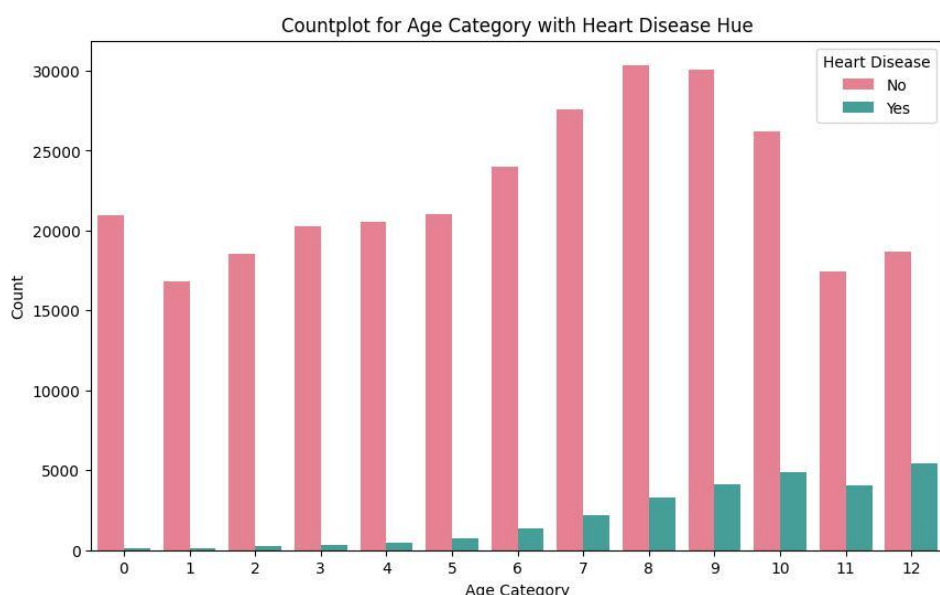
Figure 8: Age Category and Heart Disease
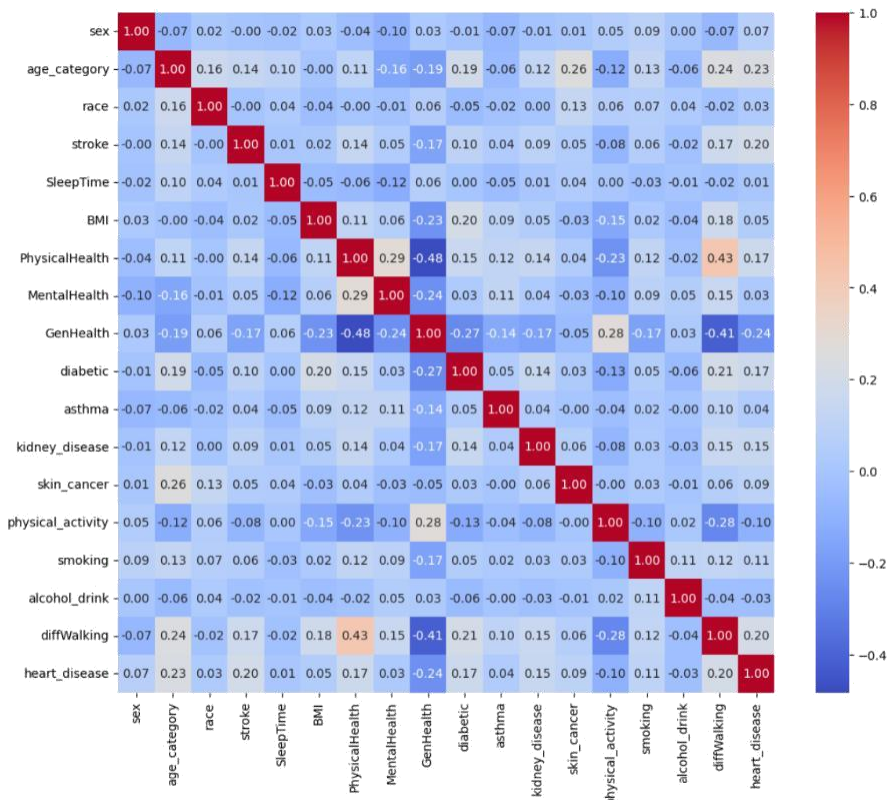
Figure 9: Heatmap

Sex and Other Variables:

Sex has a weak positive correlation with smoking (0.085) and a weak negative correlation with physical-activity (-0.048).
There is no strong correlation between sex and other health-related variables.

Age Category and Other Variables:

Age category shows a moderate positive correlation with skin-cancer (0.26) and a weak positive correlation with heart-disease (0.23).
Negative correlations are observed with mental health (-0.16) and general health (-0.19).

Sleep-Time and Other Variables:

Sleep-Time does not exhibit strong correlations with most variables, indicating weak linear relationships.

BMI and Other Variables:

BMI has a moderate positive correlation with physical-health (0.11) and a weak positive correlation with heart-disease (0.05).
A negative correlation is observed with general health (-0.23).

Physical and Mental Health:

Physical health shows a moderate positive correlation with mental health (0.29).

General Health and Other Variables:

General health has negative correlations with age category (-0.19) and general health (-0.24).

Lifestyle Factors:

Diabetic and physical-activity have a negative correlation (-0.13), indicating potential relationships between diabetes and physical activity.
Smoking and physical-activity have a negative correlation (-0.10), suggesting that smokers might engage less in physical activity.

Heart Disease and Other Variables:

Heart disease shows moderate positive correlations with age category (0.23), stroke (0.20), and diff Walking (0.20).
Negative correlations are observed with general health (-0.24) and physical-activity (-0.10).

Overall, the correlation matrix helps identify potential associations between variables, pro-viding a foundation for further exploration and analysis.
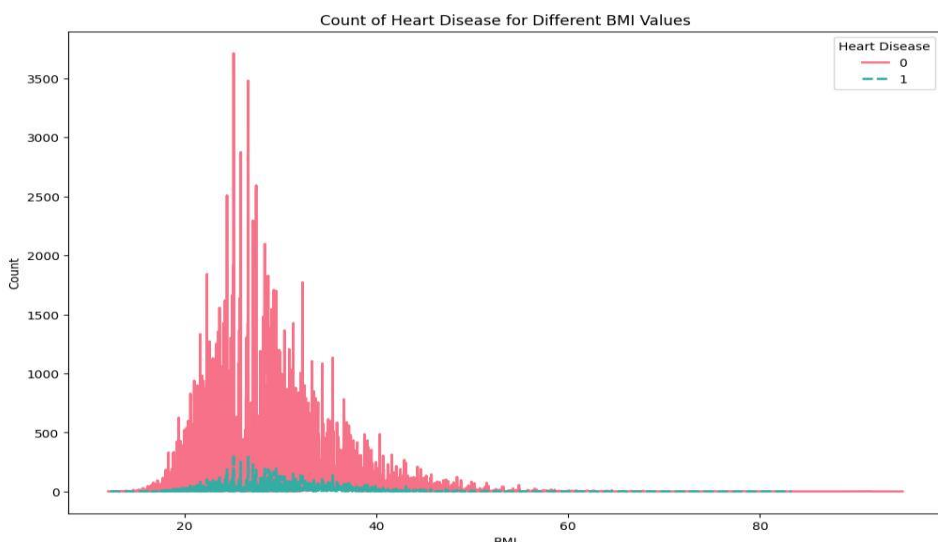
Figure 10: Body Mass Index statistics

We can see that majority of people have BMI around 30 and majority of heart disease is also happens around this. (Figure 8)

4.3   Model Training and The Outcomes

We created a Random Forest Classifier with 100 trees using the Random Forest Classifier from scikit-learn. The model was trained on the training set using the fit method.

We made predictions on the test set using the predict method.

```
Classification Report:
              precision    recall  f1-score   support

           0       0.92      0.98      0.95     58367
           1       0.36      0.13      0.19      5592

    accuracy                           0.90     63959
   macro avg       0.64      0.55      0.57     63959
weighted avg       0.87      0.90      0.88     63959
```

Figure 11 : Classification Report

The accuracy of the model was calculated using the accuracy-score function, resulting in an accuracy of 90%.

Precision: 92% for class 0, 36% for class 1.

Recall: 98% for class 0, 13% for class 1.

F1-score: 95% for class 0, 19% for class 1.

Confusion Matrix:

[[57139 1228]

[4892 700]]

True Positives (TP): 700

True Negatives (TN): 57139

False Positives (FP): 1228

False Negatives (FN): 4892
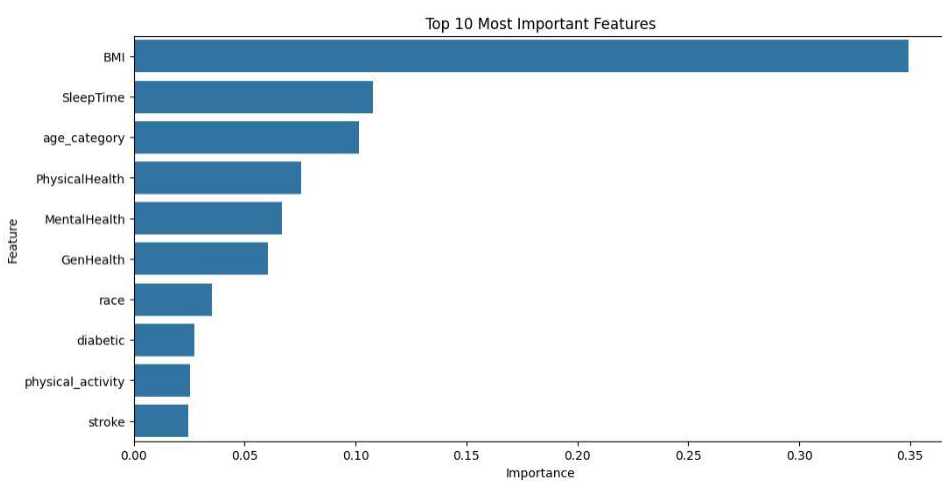
Figure 12: Top 10 features

In summary the Random Forest model achieved an overall accuracy of 90% on the test set. It showed high precision and recall for predicting the absence of heart disease (class 0), indicating good performance for this class. However, the model struggled to predict the presence of heart disease (class 1), as reflected by lower precision and recall values. Further exploration, feature engineering, or hyper parameter tuning may be considered to improve the model's performance, especially in identifying individuals with heart disease.

Deployment

For the testing purposes we have created a web-page to analyze and predict the possibility of an individual having heart disease.

Figure 13: Prediction Page

5.1 How It Works

On the prediction page, we can input our personal health data to calculate our chances of having heart disease. The necessary inputs include:

Sex (0=female, 1=male)

Resting Blood Pressure (94 - 200 mmHg)

Thallium Stress Test Maximum Heart Rate (71 - 202)

Number of Major Vessels Colored by Fluoroscopy (0 - 3)

Chest Pain Type

1 = Typical Angina

2 = Atypical Angina

3 = Non-angina

4 = Asymptomatic Angina

6. Peak Exercise ST Segment

0 = Flat or Downslope

1 = Upsloping

7. Thallium Test

0 = Normal or Fixed Defect

1 = Reversible Defect
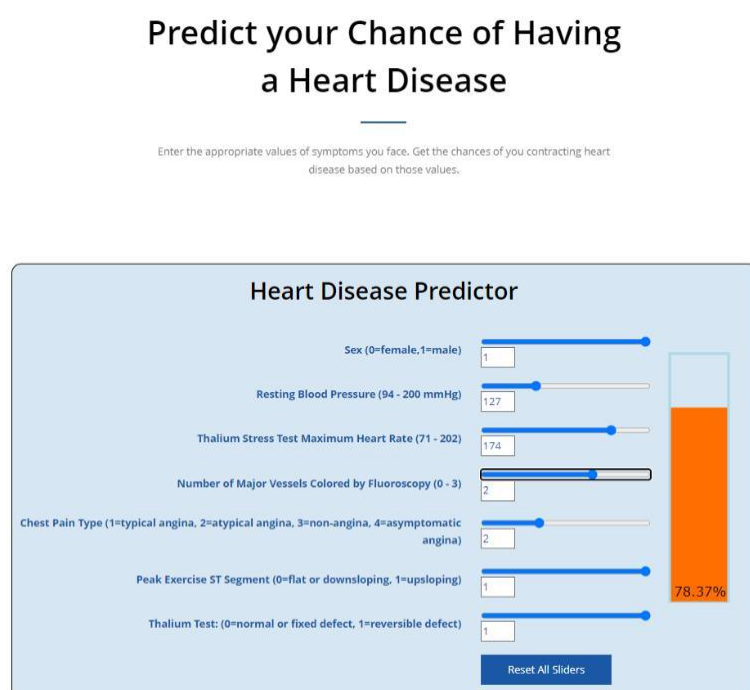
Figure 14: Prediction Page with filled information.

5.2 Interpreting the Results

On the right side of the screen, a percentage will display our risk of heart disease. This percentage ranges from 0% to 100%. If the percentage rises above 50%, it indicates a higher possibility of having heart disease.

Conclusion

– Provided a literature review on heart disease prediction using machine learning techniques. That covers previous studies, classification techniques, data analytic methods, and specific research papers on the topic, highlighting the increasing interest in using machine learning for heart disease prediction and the effectiveness of various approaches.

– Outlined the proposed approach for the study, beginning with an overview of the dataset used and the preprocessing steps applied, including feature selection and handling missing values. It then discussed the analytical models employed, such as Random Forest, Decision Trees, and K-Nearest Neighbors, along with their functioning and suitability for the task. Additionally, Support Vector Machines (SVM) are briefly mentioned for their versatility but also their computational demands and sensitivity to noisy data.

– By using Random Forest model 90% accuracy on test set. High precision/recall for class 0 (absence of heart disease), indicating good performance. Struggled with class 1 (presence of heart disease), with lower precision/recall. Consider feature engineering/hyperparameter tuning for improved identification of individuals with heart disease.

Future Direction

– Refinement and Exploration.

– Real-time Monitoring.

– Deep Learning Techniques.

– Collaboration.

– Evaluate Other Models.

– Long-term Outcome Studies.

– EHR Integration.

– Personalized Medicine.

– Ethical and Regulatory Considerations.

Acknowledgements

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Type: General Review

सार
वर्तमान समय में मनुष्य ने अनगिनत समस्याओं के साथ जीवन जी रहे हैं। भूमंडलीकरण, निजीकरण, भौतिकवाद, उपभोक्तावाद, वित्तीय–डिजिटल युग एवं भौतिकवादी सभ्यता में बढ़ते से कार्य संतुश्टि एवं समायोजन में गंभीर समस्या बन गई है। इस वैश्वीकरण, निजीकरण, उपभोक्तावादो एवम् भौतिकवादी युग में प्रकृति पर विजय पाने का अहंकार दिया और भोगवादी संस्कृति दी। इससे सभी मानवीय संबंधों, जीवनमूल्यों का बाजारीकरण ने मानवीय अस्तित्व को विनाश के कगार पर पहुँचा दिया है। आज के भूमंडलीकरण, निजीकरण, पदार्थवादी, उपभोक्तावाद, डिजिटल व वित्तीय युग और भोगवादी सभ्यता की देन आधुनिक जीवन शैली ने जहाँ मानवीय जीवन को चौतरफा क्षति पहुँचायी है जिसमें जीवन का सुख चैन, प्रसन्नता, सब कुछ कार्य संतुश्टि एवं समायोजन के रूप में देखा जा रहा है।

बीज शब्दः कार्य संतुश्टि, समायोजन, सरकारी संस्थान, निजी संस्थान, कार्यरत महिला, कार्यरत पुरुष।

परिचय
मानव में संतुष्टि एक आन्तरिक चीज है, वाहय् नहीं। इसका सम्बन्ध मनुष्य के हृदय से होता है। ऐसे अनेक व्यक्ति होते हैं जो श्रेष्ठतम् अवस्थाओं में भी असंतुष्ट नजर आते हैं और इसके विपरीत प्रतिकूल परिस्थितियों में भी संतुष्ट नजर आते हैं, लेकिन इसके बावजूद भी इस तथ्य को झुठलाया नहीं जा सकता है कि संतुष्टि की मूल भावना में भी कुछ प्रवृत्ति मूक और भौतिक परिस्थितियाँ होती है। एक व्यक्ति किसी व्यवसाय को इतना अधिक पसन्द करता है कि वह अच्छी से अच्छी भौतिक सुविधायें और सम्मान मिलने वाले किसी बड़े से बड़े पद को ठुकरा सकता है। इसके विपरीत कुछ लोग उसी व्यवसाय को पसन्द करते हैं, और उसी में सर्वाधिक तृप्ति अनुभव करते हैं, जिसमें श्रेष्ठतम आर्थिक सुविधायें मिले। कहने का तात्पर्य यह है कि व्यवसाय से मिलने वाली संतुष्टि के लिए सबसे पहली आवश्यकता प्रवृत्तिजन्य होती है अर्थात् अपनी रुचि, स्वभाव, प्रवृत्ति या इच्छाओं के अनुकूल व्यवसाय मिलना संतुष्टि की पहली शर्त है।

कार्य संतुश्टि
कार्य संतुश्टि का दूसरा आधार भौतिकता है, आधुनिक युग में भौतिक सुख और समृद्धि को संतुष्टि का कारक माना गया है। संतुष्टि के लिए आवश्यक है– मनुष्य की रोटी, कपड़ा, मकान, स्वास्थ्य, शिक्षा, संचार अथवा आने वाले कल की भौतिक व मूलभूत आवश्यकताओं की पूर्ति भौतिक स्तर पर ही संभव है। इसके लिए आवश्यक है कि जीवन जीने योग्य अथवा आय का ऐसा साधन हो, जिससे कम से कम मनुष्य औसत स्तर पर अपने जीवन का निवाह कर सकें। स्पश्ट है कि कार्य संतुश्टि मुख्यतः दो आधारों पर प्राप्त हो सकती है प्रथम है मनोवैज्ञानिक आधार, जिसमें व्यक्ति को उसी प्रकृति, रूचि, अभिवृत्ति के आधार पर कार्य मिला हो तथा दूसरा उसको अपने व्यवसाय से कम से कम इतनी सुविधायें और वतन मिलता हो, जो उस समाज में औसत स्तर के व्यक्ति को या परिवार के जीवन–यापन के लिए आवश्यक है। कार्य स्थल पर व्यक्तित्व का सन्तुलन कार्य संतुश्टि एवं समायोजन की एक प्रमुख कसौटी है। मानव अपनी आवश्यकताआं की पूर्ति के लिय अनेक साधनों को अपनाता है। यदि आवश्यकता की पूर्ति किसी उपलब्ध साधन द्वारा नहीं हो पाती है तब एक समस्या उत्पन्न हो जाती है। जैसे ही समस्या का समाधान खोज लिया जाता है, कार्य सन्तुष्टि हो जाती है।

व्यक्ति को सफलता पूर्वक जीवनयापन करने के लिए अपने वातावरण एवं परिस्थितियों के साथ समायोजन स्थापित करना होता है। मनुश्य की आवश्यकताएँ अनन्त है। जिनकी पूर्ति हेतु वह अपने सामर्थ्य के अनुसार प्रयत्नषील रहता है। परन्तुयह संभव नहीं है, कि आज का मानव उन सभी आवश्यकताओं की पूर्ति कर सकता है। जिन्हें वह प्राप्त करना चाहता है। उन्हें वह अपने सामर्थ्य अनुसार पूर्ण कर सकता है। लेकिन वर्तमान समय की व्यवस्था को देखते हुए कह सकते हैं, कि मनुश्य अपनी समस्त आवश्यकताओं की पूर्ति नहीं कर सकता और मानसिक स्तर पर अतृप्त व असंतुश्ट बना रहता है, लेकिन फिर भी वह अपनी बुद्धि एवं क्षमताओं की सहायता से नित्य–नई आने वाली समस्याओं, आवश्यकताओं और परिस्थितियों को हल करने का प्रयत्न करता है। इस प्रकार का प्रयास ही समायोजन कहलाता है। समायोजन सुव्यवस्थित या अच्छे ढंग से परिस्थितियों के साथ संबंध स्थापित करना है। परिस्थितियों एवं व्यक्ति के मध्य उचित एवं प्रभावपूर्ण तालमेल या सामंजस्य स्थापित करना हो समायोजन प्रक्रिया है। समायोजन, परिस्थितियों को अनुकूल बनाने की प्रक्रिया है। जिसमें व्यक्ति की आवश्यकताऐं पूरी हो जाऐं तथा मानसिक द्वन्द्व षांत कर वह अपने प्रत्येक लक्ष्य को पूर्ण कर सके, किन्तु प्रत्येक इच्छित लक्ष्य की पूर्ति संभव नहीं है क्योंकि कई प्रकार की आन्तरिक एवं बाह्य कठिनाइयां बाधा उत्पन्न करती है। इन बाधाओं

को दूर करने के लिए कई प्रकार के अप्रत्यक्ष साधनों का प्रयोग करते हैं जिससे इच्छित लक्ष्य की पूर्ति हो सके और जब लक्ष्य की पूर्ति हो जाती है तो ऐसा प्रतीत होता है जैसे कोई भार दूर हो गया हो। समायोजन की प्रक्रिया में व्यक्ति मानसिक संतोष प्राप्त करता है तथा परिस्थितियों के साथ अनुकूल सामंजस्य अनुभव करता है।

नौकरी से संतुष्टि का मतलब है सकारात्मक भावनाएं और दृष्टिकोण जो एक व्यक्ति अपनी नौकरी के संबंध में अनुभव करता है। यह इस बात का माप है कि कोई व्यक्ति अपने काम में कितना संतुष्ट और खुश महसूस करता है। नौकरी की संतुष्टि को प्रभावित करने वाले कारकों में शामिल हैं:
- कार्य वातावरण और संस्कृति
- नौकरी की भूमिका और जिम्मेदारियाँ
- विकास और उन्नति के अवसर
- कार्य–जीवन संतुलन
- मान्यता और प्रशंसा
- स्वायत्तता और नियंत्रण
- सहकर्मी और पर्यवेक्षक संबंध
- व्यक्तिगत मूल्यों और लक्ष्यों के साथ संरेखण

उच्च नौकरी संतुष्टि के परिणामस्वरूप हो सकता है:
- उत्पादकता व प्रदर्शन में वृद्धि
- बेहतर मानसिक और शारीरिक स्वास्थ्य
- अनुपस्थिति में कमी
- बेहतर मनोबल और जुड़ाव
- बढ़ी हुई रचनात्मकता और नवाचार

इसके विपरीत, कम नौकरी संतुष्टि के परिणामस्वरूप हो सकता है:
- तनाव
- प्रेरणा और प्रदर्शन में कमी
- उच्च अनुपस्थिति दर
- मानसिक व शारीरिक स्वास्थ्य पर नकारात्मक प्रभाव
- व्यक्तियों, नियोक्ताओं और सगठनों के लिए सकारात्मक और उत्पादक कार्य वातावरण को बढ़ावा देने के लिए नौकरी की संतुष्टि को समझना और संबोधित करना महत्वपूर्ण है।

समायोजन का विश्लेषण
समायोजन मानव जीवन की दृष्टि से अत्यन्त महत्वपूर्ण होता है। वस्तुतः जन्म लेने के उपरान्त व्यक्ति अपनी पूरी जीवन अवधि में अपने वातावरण के साथ अपने समायोजन के लिए निरन्तर प्रयासरत् रहता है। मानसिक समस्याओं से ग्रस्त व्यक्ति अपने दैनिक जीवन में उचित समायोजन में निरन्तर कठिनाई का अनुभव करता है। व्यक्ति की सफलता में उसके सुसामायोजन का महत्वपूर्ण योगदान होता है। व्यक्ति का मानसिक स्वास्थ्य समायोजन पर ही निर्भर करता है। सरकारी तथा निजी संस्थानों में कार्यरत महिला एवं पुरुष कर्मचारियों का कार्य संतुष्टि तथा सुसामायोजित होना अतिआवश्यक है।

कार्यक्षेत्र का वातावरण सरकारी तथा निजी संस्थानों में कार्यरत कर्मचारियों के कार्य संतुष्टि एवं समायोजन पर निर्णायक प्रभाव डालते हैं। संस्थागत अनुशासन, आर्थिक तथा सामाजिक प्रस्थिति, महत्वाकांक्षाएँ, संस्था में अत्यधिक अनुशासन या अनुशासनहीनता, कलह, भेदभाव आदि कारणों से व्यक्ति प्रायः कुसमायोजित हो जाता है। इसी प्रकार जब कार्यस्थल पर भेदभाव, जातीय संघर्ष, आर्थिक असमानता, अत्यधिक मतभेद की स्थितियाँ होती हैं तब व्यक्ति का समायोजन ठीक से नहीं हो पाता। संस्था का वातावरण, सहकर्मी का व्यवहार, कार्य विधियाँ, समय–सारणी आदि भी सरकारी तथा निजी संस्थानों में कार्यरत महिला एवं पुरुष कर्मचारियों के कार्य संतुष्टि एवं समायोजन को प्रभावित करते हैं परिणामस्वरूप महिला एवं पुरुष कर्मचारियों में विषेशकर पुरूषों की अपेक्षा महिला कर्मचारी अधिकाधिक निराषा एवं कुंठा की षिकार हो जाती है। इतना ही नहीं सहकर्मी कर्मचारियों के सहानुभूतिपूर्ण व सहयोगी न हाने के कारण महिला एवं पुरुष कर्मचारी कार्य स्थल पर अपना समायोजन सफलतापूर्वक नहीं कर पाते हैं। हाँ इतना अवष्य है कि सरकारी संस्थानों में महिला एवं पुरुष कर्मचारियों की अपेक्षा तथा निजी संस्थानों में कार्यरत महिला एवं पुरूश कर्मचारियों में कार्य के प्रति असंतोश तथा कुसमायोजन देखने को मिलता है।

अतः समायोजन से तात्पर्य बदलती परिस्थितियों, वातावरण या स्थितियों के साथ तालमेल बिठाने अथवा खुद को संशोधित करने की प्रक्रिया से है। इसमें मतभेदों को सुलझाने, संघर्षों को हल करने या नई जानकारी, लोगों अथवा अनुभवों को समायोजित करने के लिए सचेत प्रयास करना शामिल है।

समायाजन जीवन के विभिन्न पहलुओं में हो सकता है, जैसेः
- सामाजिक समायोजनः नई सामाजिक स्थितियों, संस्कृतियों या रिश्तों के अनुकूल होना।
- भावनात्मक समायोजनः भावनात्मक परिवर्तनों, तनाव या आघात से निपटना।
- शैक्षणिक समायोजनः नए शैक्षिक वातावरण व अपेक्षाओं के अनुकूल होना।
- व्यावसायिक समायोजनः नए कार्य वातावरण, भूमिकाओं और जिम्मेदारियों के साथ समायोजन करना।
- मनोवैज्ञानिक समायोजनः वास्तविकता एवं बदलती परिस्थितियों के साथ बेहतर तालमेल बिठाने के लिए अपने विचारों, भावनाओं अथवा व्यवहारों को संशोधित करना।

प्रभावी समायोजन में शामिल हैं:
- लचीलापन
- खुले विचारों वाला होना
- आत्म–जागरूकता
- सामना करने का कौशल

समायोजन एक आवश्यक जीवन कौशल है, जो व्यक्तियों को चुनौतियों का सामना करन, बढ़ने और हमेशा बदलती दुनिया में पनपने में सक्षम बनाता है।

संबंधित साहित्य का अध्ययनन

डॉ. अंजोरा बेलचा एवं अरूणा कुमारी कुमावत (2019) ने अपने षोध आलेख "कार्य संतुष्टि के घटकों का प्रभाव" में स्पश्ट किया है कि मानव सृष्टि की सर्वश्रेष्ठ रचना है जो कि सृजनशील व प्रगतिशील है। व्यक्ति जीवन पर्यन्त कार्य कारता है तथा मानव संसाधन संगठन का महत्वपूर्ण तत्व है, व्यक्ति को जो कार्य करना अच्छा लगता है वही उसे कार्य संतुष्टि की सुखद अनूभूति प्रदान करता है। कार्य संतुष्टि किसी कर्मचारी की अपने कार्य के प्रति सकारात्मक व अनुकूल भावनात्मक मनोवृति है जो उसके कार्य से जुड़े घटकों से निर्मित होती है। एक व्यक्ति अपने कार्य से कितना संतुष्ट अथवा वह कार्य के विभिन्न पहलुओं को पसन्द करते हैं या नापसन्द यही कार्य संतुष्टि है। यह कर्मचारियों को कार्य से होने वाली सकारात्मक प्राप्तियाँ है।

अनुप दीक्षित (2019) ने अपने आलेख "मध्यप्रदेश के छतरपुर जिले के विशेष संदर्भ वाले गैर–सरकारी संगठनों के कार्यपालकों के बीच नौकरी की संतुष्टि का तुलनात्मक अध्ययन" में स्पश्ट किया है कि कार्यरत कर्मचारी की प्रभावशीलता इस बात पर निर्भर करती है कि वह अपने व्यवसाय से किस सीमा तक संतुष्ट है। कर्मचारी अपनी योग्यताओं, निष्ठापूर्ण व्यवसाय से संबंधित परिस्थितियों व सुविधाओं को प्राप्त करने के कारण अपने कार्य संतुष्टि अनुभव करते हैं। कार्यरत कर्मचारियों की संतुष्टि पर आंतरिक एवं बाह्य दोनों कारक प्रभाव डालती है। जिसमं नियुक्ति का स्थान, कार्य की दशायें, वेतन मुख्य होता है।

डॉ0 दीप्ति सिंह (2018) ने "शासकीय तथा निजी माध्यमिक विद्यालयों के शिक्षकों की कार्य संतुष्टि का तुलनात्मक अध्ययन" किया। अध्ययन के निष्कर्ष में शासकीय माध्यमिक स्तर के विद्यालयों के शिक्षकों एवं शिक्षिकाओं की कार्य संतुष्टि में कोई सार्थक अन्तर नहीं पाया गया। निजी माध्यमिक स्तर के विद्यालयों के शिक्षकों एवं शिक्षिकाओं की कार्य संतुष्टि में कोई सार्थक अन्तर नहीं पाया गया। माध्यमिक स्तर के शासकीय तथा निजी विद्यालयों के शिक्षकों की कार्यसन्तुष्टि में कोई सार्थक अन्तर नहीं पाया गया।

मैरीलैण्ड (2009) ने अपना सर्वे एक सहारन संस्था के कर्मचारियों पर किया जिसमें उन्होनें दो तरह की संस्थानों के कर्मचारी जो कि छोटे एवं बडे स्तर के कर्मचारी थे उन कर्मचारियों में से 200 कर्मचारियों का चयन नॉन रेन्डमली मापनी के आधार पर किया। जिसमें उन्होंने पाया कि छोटे एवं बडे स्तर पर जो कर्मचारी थे वे एक दूसरे के कार्य एवं व्यवहार से संतुष्ट नहीं थे तथा न ही वह कार्य के प्रति उतने सजग थे एवं वह दूसरे कर्मचारियों की बुराई एवं षिकायत करते रहते थे और वह अपने कार्य एवं वेतन से असंतुश्ट होने के कारण भी कार्य पर उतना ध्यान नही दिया करते थे और अपना कार्य दूसरों पर टालने की कोषिष करते थे और समय का इंतजार करते थे, कि कब उनका कार्यालयीन समय पूरा हो। जिसके कारण वहां के संस्थानों की गुणवत्ता धीमे–धीमे कम होती जा रही थी तथा उन कर्मचारियों के बदलते व्यक्तित्व के लक्षणों का प्रभाव उनके परिवार एवं आस–पड़ोस पर भी पड़ रहा था और इस असंतुश्टता के कारण उनके परिवार पर काफी बुरा प्रभाव देखने को मिल रहा था।

मोहम्मद मोषाहिद (2017) ने अपना अध्ययन षासकीय एवं निजी विद्यालयों के माध्यमिक षिक्षकों के मध्य समायोजन ज्ञात करने हेतु किया है। प्रस्तुत अध्ययन षासकीय एवं निजी विद्यालयों में कार्यरत 105 माध्यमिक षिक्षकों को चयन कर पूर्ण किया गया है। जिसमें 55 षासकीय विद्यालयों में कार्यरत षिक्षक थे तथा 50 निजी विद्यालयों में कार्यरत षिक्षक सम्मिलित थे। प्रदत्त संग्रह का कार्य डॉ. एस. के. मंगल द्वारा निर्मित 'मंगल टीचर्स एडजस्टमेन्ट इनवेन्ट्री' द्वारा किया गया है। प्रदत्त संग्रह यादृच्छिकृत विधि से किया गया है तथा प्रदत्त विष्लेशण मीन, एसडी ज्ञात कर किया गया कि षासकीय विद्यालय के षिक्षकों का समायोजन निजी विद्यालयों से अच्छा है। परीक्षणों के विष्लेशण मे यह देखा कि षासकीय विद्यालयों में माध्यमिक स्तर के महिला एवं पुरूश षिक्षकों के समायोजन में कोई सार्थक अंतर नहीं मिला, यह भी देखा गया कि निजी विद्यालयों के माध्यमिक स्तर के महिला एवं पुरूश षिक्षकों के समायोजन में सार्थक अन्तर पाया गया है एवं माध्यमिक स्तर के षासकीय एवं अषासकीय विद्यालयों में कार्यरत महिला षिक्षकों के समायोजन में कोई सार्थक अन्तर नहीं पाया गया।

रेड पाथवे लिण्डर्स एवं अन्य (2009) ने अपना षोध कार्य कनाडा की तीन सरकारी संस्थानों के मध्य किया जिसमें वहां के छोटे–बडे कर्मचारियों को हर तरह की सुविधाओं एवं अन्य बातों का भी ध्यान रखा जाता था। तथा वहां के कर्मचारियों को समय पर अच्छे कार्य के प्रति उन्हें प्रेरित किया जाता था और समय पर पुरस्कार, बोनस एवं अन्य सुविधायें जैसे पैंषन आदि भी प्रदान की जाती थी तथा उन्हें कोई पारिवारिक समस्या सामने आने पर ऋण जैसे सुविधायें भी पदान करायी जाती थी। जिस कारण वहां के छोटे–बड़े कर्मचारियों के मध्य धनात्मक संबंध थे और वहां के कर्मचारियों के कार्य की गुणवत्ता भी बहुत अच्छी थी और वहाँ पर नये कर्मचारियों को नये कार्य करने के लिये प्रोत्साहन दिया जाता था वहाँ पर देखा गया कि वहाँ के कर्मचारियों का अपनी संस्था से एक धनात्मक लगाव है तथा वह अपना कार्य सरलतापूर्वक किया करते थे।

आलम षाह (2009) ने पुलिस कर्मियों के समायोजन का अध्ययन आवष्यकता की कमी के प्रभाव के आधार पर किया। अध्ययन में उन्होंने प्रतिदर्ष के रूप में अलिगढ़ जिले के 200 पुरूश पुलिस कर्मियों का चयन अव्यवस्थित विधि द्वारा किया है। यह प्रतिदर्ष प्राकृतिक रूप से उद्देष्यपूर्ण है। षोध में यह पाया गया है, कि समय की कमी एवं स्थानांतरण के कारण अधिकांश समय परिवार से दूर रहते हैं, जिससे वह घर पर ध्यान नहीं दे सकते। जिससे उनका सामाजिक समायोजन समस्यात्मक रहता है। स्वास्थ्य की दृश्टि से भी उनका समायोजन उचित नहीं होता वह हर समय ड्यूटी लिए तैयार रहते हैं। पुलिस कर्मी सामाजिक सम्मान की कमी अनुभव करते हैं, अतः उनका सामाजिक समायोजन भी प्रभावित रहता है। सामान्यतः उनका संवेगात्मक समायोजन भी प्रभावित देखा गया है। वह भावात्मक रूप से भी परेशान रहते हैं इसके अतिरिक्त उच्च पदाधिकारियों द्वारा अपमानित किया जाता है तथा जनता द्वारा उनकी आलोचना की जाती है। इन सभी क बाद भी पुलिस कर्मी कुछ सत्य एवं झूठ के बीच स्वयं को समायोजित करने का प्रयास करते रहते हैं।

एस.एम. सुनीमुगा एवं एन. एम. जयकुमारन (2012) ने तमिलनाडु पुलिस विभाग में कार्यरत महिला पुलिस कर्मचारियों के समायोजन का अध्ययन किया जिसमें कार्यक्षेत्र से संबंधित समस्याओं पर प्रकाष डाला जैसें – प्रजाति एवं लिंग आधारित पक्षपात, कार्य गतिविधियों पर प्रभाव, पुलिस पर तनाव का प्रभाव। यह अध्ययन तुतीकोरिन जिले के पुलिस कांस्टेबल पर किया गया है, जिसमें आठ सव–डिविजन के 52 पुलिस स्टेशन षामिल हैं तथा अनुसंधान प्रतिदर्ष के रूप में 274 महिला पुलिस का चयन किया गया है। अध्ययन में यह देखा कि 114 महिला पुलिस अति उच्च स्तर के तनाव का सामना कर रही हैं। 90 महिला पुलिस उच्च स्तर के तनाव से ग्रस्त हैं। 25 महिलायें निम्न तनाव तथा 13 कांस्टेबल में अति निम्न स्तर का तनाव पाया गया। षोध में पाया गया कि स्वयं के लिए पर्याप्त समय

का अभाव, अपराधियों का खुला घूमना, अच्छा कार्य का प्रदर्षन करने पर भी सम्मान की कमी, न्यायालय जाना, मीडिया से निपटना, मीटिंग की समय सीमा, नियत समय से अधिक काम, संकट की स्थिति से निपटना, उन्नति के लिए अवसर की कमी, अपर्याप्त वेतन, मृत्यु संदेष प्रदान करना तनाव के प्राथमिक कारण हैं। आयु, लिंग धर्म नौकरी के कार्य वर्श, वैवाहिक स्थिति, आय और निवास स्थान, महिला पुलिस में तनाव के अन्य महत्वपूर्ण कारण हैं। अध्ययन से प्राप्त परिणामों को देखकर महिला पुलिस में तनाव प्रबंधन के लिए नियमित रूप स प्रषिक्षण कार्यक्रम, परामर्षन एवं चिकित्सा जांच का आयोजन करने की सलाह देता है।

अध्ययन की आवष्यकता एवं महत्त्व

मनुश्य के जीवन का एक प्रमुख लक्ष्य कार्य संतुश्टि होता है। वैष्वीकरण के इस युग में सभी व्यक्ति को इच्छित कार्य–रोजगार ही मिले यह आवष्यक नहीं है। परिस्थितिवष बिना इच्छा के भी व्यक्ति को कार्य या रोजगार करना पड़ता है। मनमाफिक कार्य नहीं मिलने पर समायोजन में कठिनाई होती है तथा कार्य संतुश्टि नहीं पाया जाता है। फलतः उनका षारीरिक, पारिवारिक, मनोवैज्ञानिक एवं आर्थिक स्थिति पर नकारात्मक प्रभाव पड़ता है। अगर कर्मचारियों का समायोजन सही रूप में होता है और कार्य संतुश्टि मिलती है तो षारीरिक, पारिवारिक, मनोवैज्ञानिक एवं आर्थिक स्थिति पर सकारात्मक प्रभाव पड़ता है।

निश्कर्श

मानवीय अस्तित्व के संकट के इस दौर में कार्य संतुश्टि एवं समायोजन होना चाहिए। मनोवैज्ञानिक हर स्तर पर कुछ न कुछ प्रयास चल रहे है। जीवन को आत्मकेन्द्रित बनाये बिना किसी भी तरह व्यक्तित्व तथा जीवन के बिखराव की पूर्ण समाप्ति नहीं हो सकती। इस प्रकार कार्य संतुश्टि एवं समायोजित जीवन हमें षारीरिक और मानसिक रूप से परिपूर्ण सुखी, सम्मुन्नत जीवन प्रदान करता है।

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अति आधुनिक कालमेँ एक–सँ–एक साहित्यकार भेलाह अछि, जे अपन साहित्यक माध्यमे मैथिली साहित्यकेँ परिपुष्ट कएलनि अछि। किछु जतए परम्पराक निर्वाह करबाक क्रममेँ अपन साहित्यिक धारा बहा रहल छथि तँ किछु एहने साहित्यककार छथि जे परम्पराक भाव–भूमिपर अर्वाचीनक लेप चढ़बैत साहित्यक रचना कए रहल छथि, मुदा किछु एहनो साहित्यकार छथि जे सर्वथा नव–भावनाक भव्यताकेँ अपन रचनामध्य स्थापित कए रहल छथि। हमर विवेच्य साहित्यकार श्री जगदीश मिश्रजी अपन साहित्यकेँ सर्वथा नवीनतम रूपमेँ प्रतिष्ठापित कएलनि अछि। यद्यपि हिनक कृति मैथिली साहित्यक काव्यमध्य परम्पराक अवहेलना सँ मर्माहत अवश्य बुझाइछ आ तँ ने लिखय पड़लनि–"अलंकार मार स्वरूप अछि, बाहे नहि तँ गतिक काज की?" मुदा एहि आरोपकेर कारण हमरा जनैत हिनक 'शास्त्र' ज्ञान थिक। 'काव्यशास्त्र'क विशेष ध्यान अवश्य हिनका अलंकार–गति आदिकेर चकैत सम्यक प्रयोग दिस चिन्हित करैछ, मुदा जखन काव्य निर्माण दिस बढ़ाते छथि तँ स्वतः निकली जाइत छनि–

"पापी पेट पुरैनिया अनलक"

कहबाक तात्पर्य जे जगदीश मिश्र एक दिस जतए 'शास्त्र'केँ साहित्यक पूँजी सिद्ध करबाक प्रयास करैत छथि तँ दोसर दिस पाठकक अभिरुचि, बदलैत चिन्तन–मनन हिनका 'शास्त्र'क शास्त्रसँ विमुख कए दैछ।

एहन साहित्यकारक जन्म मधुबनी जिलाक पण्डौल प्रखण्डक अन्तर्गत नवटोल ग्राममेँ 'सोदरपुरिये दिगौन' मूलक शाण्डिल्य गोत्रीय मैथिल श्रोत्रिय ब्राह्मण वंशमेँ भोलीदत प्रसिद्ध गोसाजि मिश्रक पौत्र तथा दिनकरदत प्रसिद्ध महीमिश्रक बालक यज्ञदत प्रसिद्ध श्री जगदीश मिश्रजीक विक्रमसम्वत 1998 बैशाखमास कृष्णपक्षक पञ्चमी तिथि मंगलदिन तदनुसार 15–04–1941ई०मेँ भेलैन्हि।

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डा० जगदीश मिश्रक व्यक्तित्व बहुआयामी छनि, जे माँ मैथिलीक सेवा लगातार कय रहल छथि। काव्य, काव्यशास्त्र, निबन्ध, शोध, समोक्षा विधामे समान रूपेँ लिखैत छथि। ई बहुतो पोथीके सम्पादन आ भूमिका सेहो लिखने छथि।

डा० जगदीश मिश्रक एखनिधरि कुल 7 गोट मौलिक रचना आबि चुकल अछि। जे एहि प्रकारेँ अछि। (1)शास्त्रीय निबंध (1970), (2)प्रवास पियासल (1995), (3)परिशीलन (2004), (4)कविता उड़ल अकास (2006), (5)नवटोलक उत्पत्ति कथा (2007) ओ द्वितीय संस्करण (2017), (6)श्रृंगार भजनमे अलंकारक झंकार (2017), एवं (7)तीत– अतीत(2020) आदि।

एकर अलावा ई नीक सम्पादक सेहो छथि। हिनक सम्पादित पोथी आ पत्रिका अछि– (1) कौशिकी– (1970), (2) जिजीविषा–(1982), (3) पद्मभूषण डॉ० अमरनाथ झाक हस्तलिखित श्रृंगार भजन–(2017), (4) साहित्यिकी(मासिक पत्रिकाक सम्पादन) 01 सँ 150 अंक धरि।

शास्त्रीय निबंध – एकर प्रकाशन 1970ई०मेँ भेल छल। शास्त्रीय निबन्ध पहिल ग्रन्थ छनि जकर भूमिका हिनक गुरूवर आचार्य रमानाथ झा लिखने छथि।ओ भूमिम लिखैत छथि, मैथिली विभाग छात्र शास्त्रीय विषय पर अपन पढ़ल विषयके स्वतंत्र रूपे लिखि जएताह तकर ई प्रथमे दृष्टान्त थिक ओ हमर छात्र कएलैन्हि तकर हमरा पूर्ण गौरव अछि। एहि आठ वर्षमे एको गोट एहन छात्र भेलाह आ' एहन सुन्दर शास्त्रीय निबन्धक प्रकाशन भए सकल ई छोट उपलब्धि नहि थिक।

यशस्वी समालोचक डा० मुरलीधर झा एकर समीक्षामे मानैत छथि, जे 'शास्त्रीय निबन्ध'मे संकलित पन्द्रहो निबन्ध शास्त्रक मर्यादासँ नियंत्रित तँ अछिए, संगहि भारतीय साहित्य शास्त्र आ पाश्चात्य साहित्य शास्त्रक मनीषी लोकनिक विचार ओ सिद्धांतसँ अनुप्रणित अछि।

प्रवास पियासल – ई जगदीश मिश्रक दोसर पोथी ओ पहिल कविता संग्रह थिक। एकर प्रकाशन सन् 1995ई०मे० भेल छल। 'प्रवास पियासल' विभिन्न विषय भाव ओ स्वरूपक बियालिस गोट कविताक संकलन थिक। जाहिमे समाजक विभिन्न परिस्थितिक वर्णन अछि। एहि पोथीक विवेचना करैत प्रेमचंद पंकज लिखत छथि "जे प्रवासक एकान्त कोठलीमे कविकेँ जाहि पिआसक अनुभव भेलनि, से कष्टकर प्रतीत होइत छनि आ' से दैहिक तँ अछिए, मानसिक सेहो अछि। ओ आगु लिखैत छथि गाम–घरसँ विछोहक पिआस अछि आ कल्पनाक चिन्ताक रूप प्रेमिकाक मधुर मादक स्मृतिक पिआस। एहिसमकेँ प्राप्त करबा लेल उद्यतो होइत छथि कण्टकाकीर्ण पिछड़ आ तिमिराच्छन्न एकपेड़िआ पर घरमुँहा माल–जाल जकाँ आतुरताक संग। किन्तु अभिलाषित वस्तुक प्राप्ति असम्भव भए जाइत छनि। एकान्त प्रवासक दुरूह आ कष्टकर समयक साक्षी बनैत अछि ई आठ पन्नाक डायरी।"1

परिशीलन – परिशीलनक प्रकाशन सन् 2004ई०मेँ भेल छल। एकर प्रकाशकीय प्रो० मुक्तिनाथ झ आ भूमिका प्रो० किशोरनाथ झा लिखने छथि, जाहिमे ऐतिहासिक, संस्मरणात्मक, आ आलोचनात्मक मिलाय ग्यारह गोट निबन्ध संकलित अछि। एहि पोथीमे महामहोपाध्याय बालकृष्ण मिश्र, शास्त्रार्थ महारथी मार्कण्डेय मिश्र, मैथिली व्याकरण पाणिनि पं० दीनबन्धु झा, महाकवि विद्यापति, आचार्य रमानाथ झा, बाबू भुवनेश्वर सिंह भुवन, उमानाथ झा, व्रजकिशोर वर्मा 'मणिपद्म', पं० गोविन्द झा एवं चन्द्रनाथ मिश्र 'अमर'क वैद्युषक परिचय एहि पोथीमे देल गेल अछि। 'परिशीलन'क प्रसंगमे डा० सत्येंद्र कुमार झा अपन विचार व्यक्त करैत लिखैत छथि "एहिमे कोनो एकहि धारा या विधाक संकलन नहि कएल गेल अछि, अपितु विभिन्न तरहक आलेख हेबाक कारणेँ विविध रसक आस्वादन करबैत अछि।"2

कविता उड़ल अकास – डा० जगदीश मिश्रक दोसर कविता संग्रहक नाम थिक 'कविता उड़ल अकास' जाहिमे तेईस गोट कविताक सग्रह अछि।एकर प्रकाशन सन् 2006ई०मेँ भेल छल। एकर प्रकाशकीय प्रो० किशोर नाथ झा लिखने छथि आ भूमिका डा० यशोदानाथ झा 'कवि, कविता ओ रसिकः सन्दर्भ–कविता उड़ल अकास' नामसँ लिखने छथि। 'कविता उड़ल अकासक' प्रसंगमे डा० यशोदानाथ झा लिखैत छथि "डा० जगदीश मिश्रक भाषा, भावक संग परिवर्तित होइत रहल अछि। कवितामे ग्रामीण–भाषा–शब्दक प्रचुरता अछि, किन्तु ग्राम्यदोषसँ सर्वथा मुक्त पबैत छी। किछु लोकोक्तिक सम्पूर्ण प्रयोगसँ भाषा ग्राम्यदोषसँ युक्त भए जाइत, किन्तु कवि कौशल एहन जे अशिष्ट भाववाची शब्दक स्थान पर 'किदन' कहि, ध्वनिकेँ आगाँ बढ़ाए, लोकोक्तिक समस्त अर्थगौरवके अभिव्यञ्जित कए देल अछि। भाषाक भंगिमा मैथिलक खाँटी कथन–शैलीक भंगिमासँ मण्डित अछि। हिनक भाषाक प्रमुख विशेषता थिक– व्यञ्जना शक्तिक प्राधान्य। एहिमे कवि पूर्ण सफल भेल छथि।

डा० झा आगु लिखैत छथि डा० जगदीश मिश्रक कविता छन्दविहिन होइतहुँ, लयगतिहीन नहि अछि। तद्भव प्रधान भाषाक प्रयोग होइतहुँ, ने ग्राम्य दोष पाओल जाइच, ने भाषाक लालित्यपर आघातहि पहुँचल अछि, प्रत्युत भाव–प्रवाहमे स्वाभाविकते उत्पन्न भेल अछि। तत्सम द्वारा जनसाधारणक हृदयक स्पर्शन सम्भव नरि होइच्छ, मुदा ई कविताक भाषा थीक, कोनो राजनेताक भाषणक भाषा तँ नहि। कुल मिलाए, एहि संग्रहक भाषाकेँ जनोन्मुखी भाषा–शैलीक कोटिमे राखब पूर्ण संगत लगैत अछि हमरा। "3

नवटोलक उत्पत्ति कथा – ' नवटोलक उत्पत्ति कथा' दु संस्करण मे प्रकाशित भेल अछि। एकर पहिल संस्करण 2007ई०मे आयल छल आ दोसर संस्करण 2016इ०मे आयल। एकर दुनु संस्करण लेखकीय लेखक स्वयं लिखने छथि। एकर समीक्षामे डा० शान्तिनाथ सिंह ठाकुर लिखैत छथि, जे नवटोल गामक सौभाग्य रहलैक जे महामहोपाध्याय बालकृष्ण मिश्रसँ लए सरस कवि ईशनाथ झा धरि आ आकर पश्चातहुँ अनेक ख्यातिलब्ध साहित्यकार ई मैथिली साहित्यकेँ प्रदान कएलक। रचनाकार ई सुदीर्घ परम्परा एखनहुँ नहि विलुप्त भेल अछि,जकर सद्य प्रमाण छथि 'नवटोलक उत्पत्ति कथा'क लेखक आ हुनक अनुमम कृति।

श्रृंगार भजनमे अलंकारक झंकार – 'श्रृंगार–भजनमे अलंकारक झंकार'क प्रकाशन सन् 2017ई०मेँ भेल छल। एकर प्रकाशकीय लेखक स्वयं लिखने छथि। और एकर समीक्षा डा० काशीनाथ झा आ डा० हीरानाथ झा लिखने छथि। लेखक प्रकाशकीय मे लिखने छथि बंगलमे तँ अनेक गोविन्ददास भेलाह ओ सभक रचना मिलि गेल अछि ओ तँ ई कहब कठिन छैक जे कोन रचना कोन गोविन्ददासक। तथापि जनिका ओ लोकनि गाविन्ददास कविराज कहैत छथिन्ह, तनिक गीत आठ सँ ऊपरे छन्हि। अस्तु, श्रृंगार–भजन गीतावलीक भाषा मैथिली थिक से केओ भाषाक मर्मकेँ बुझनिहार व्यक्ति कहताह। एही पोथीक समीक्षामे हीरानाथ झा लिखैत छथि एहि अनुपम पोथीक समर्पण सुविख्यात सरसकवि समादरणीय ईशनाथ बाबूकेँ कएल गेल अछि, जाहिमे मुक्तकंठ सँ हिनक गुरूत्व स्वीकार कए हिनकहि ज्ञानामृत प्रसाद सँ महाकवि गोविन्द दास सनक 'रसना–रोसन', रसिक रसायन आ श्रवण विलास पदसमूहक भाव वैशद्य केँ जानि शताधिक गीतक टीका कएल कहल अछि। अतःतस्मै श्री गुरवे नमः' सद्यः परिलक्षित अछि।

तीत–अतीत – 'तीत–अतीत'क प्रकाशन सन् 2020ई०मेँ भेल अछि। एकरलप्रकाशकीय किशोरनाथ झा लिखने छथि आ समीक्षा 'आत्मसंरचनाक आधारभूमि' नामसँ डा० भीमनाथ झा लिखने छथि। एकर समीक्षा करैत भीमनाथ झा लिखैत छथि, "एहिमे अनेकानेक उत्प्रेरक, उद्बोधक, हृदयबेधक, उत्साहवर्धक प्रसंग सभ छारल अछि, जकर जड़िमे आदमीकेँ मनुक्ख बनबाक जड़ी सेहो गाड़ल अछि। जे तकरा ताकिकS उपाडिः॒ अंगीकार कS लेताह, जे समाजक नाक भS जयताह। अतीतक प्रीति अ–प्रीतिकर घटनाधारित लेखकक आत्मसंरचनाक आधारभूमिक भूमिका थिक ई पोथी। एहन तैयार भूमिपर लागल कलमसँ कलम–बागक छटा अद्भुत भेनहि। एकर फल अमृतेपम उचिते– से साहित्योक पक्षमे आ समाजोक पक्षमे। कि एखने, एहने एक कलमबागसँ अबैत कोइलीक ई तान कानकेँ कोन सन्देश सुना रहल अछि, से कने अकानी। "4

सुर्खरू होते हैं इंसा, ठोकरें खाने के बाद ।

रंग लाती है हिना,पत्थर पे घिस जाने के बाद ।।

डॉ० जगदीश मिश्र नीक सम्पादक सेहो छथि, हुनक किछु सम्पादित रचनाः–

9. कौशिकी (पत्रिका) –1970ई०
10. जिजीविषा (पत्रिका) – 1982 ई०
11. पद्मभूषण डॉ० अमरनाथ झाक हस्तलिखित श्रृंगार भजन– 2017 ई०
12. साहित्यिकी (मासिक पत्रिका)क सम्पादन यज्ञदत्त नामसँ– 01सँ 150 अंक धरि (फरवरी 1995सँ 2007 धरि) संगहि साहित्यिकी संयोजक रहलाह।

अप्रकाशित रचनाः–

1. निबंध संग्रह
   डॉ० मिश्रजी द्रव्यक सहायतासँ प्रकाशित पोथी–
1. डॉ० आनन्द मिश्र रचित– विचार वीची
2. सरिरबक फूल (कथा संग्रह)
3. डॉ० महिनाथ झा रचित– राधानयन द्विशतीक मैथिली पद्यानुवाद
4. डॉ० श्री किशोर नाथ रचित– पं० धर्मदत्त (बच्चा) झा
5. पं० श्यामानन्द ठाकुर रचित– हमहुँ जेबै पंजाब
6. हथौड़ी वाली भौजी
7. पं० श्री गोविन्द झा रचित– लोढ़ानाथ (नाटक)
8. सरसकवि ईशनाथ झा रचित– भावना ओ अन्य रचना
9. पं० श्री गोविन्द झा सम्पादित– कीर्ति किरण
10. म० म० बालकृष्ण मिश्र रचित– लकारशक्तिनिरूक्ति

11. न्यायचतुःसूत्रीवृत्ते विषमस्थल तात्पर्यविवृतिः
12. कामबाबू रचित– कविशेखर के–कोना–की
13. विद्यापति पदावली
14. उभयाभावादिवारकपरिष्कारः
15. पं० कुमुदनाथ मिश्र रचित– कुमुदप्रभा (नवीन संस्मरण)
16. पं० अच्युतानंद झा रचित– दुर्गासप्तशतीक मैथिली पद्यानुवाद
17. तन्त्राहिनिकम् (श्री महाविद्यार्चनम्) – डॉ० खगेश झा कृत हिन्दी टीका सहित
18. पं० बुद्धिनाथ मिश्र 'भंगेर' रचित– मैथिली विजय नाट
19. डॉ० श्री किशोरनाथ झा रचित– म० म० सर गंगानाथ झा
20. कवीश्वर चन्दा झा द्वारा संग्रहीत एवं कृतटीका सहित– विद्यापति गीकावली
21. मैथिली लोकगाथाक मूलपाठ
22. श्रीमति लिली रे रचित– रंगीन परदा
23. न्यायपञ्चानन म० म० विश्वनाथ झा रचित– व्युत्पतिवाद शक्तिवाद विवृतिः
24. तेजनाथ रचनावली
25. अलंकारसागर
26. प्रा० मुक्तिनाथ झा रचित– अपन कथा
27. म० म० धनपति उपाध्याय रचित– अशौचसंकरव्यवस्था (डॉ० द्वारिकानाथ झा कृत मैथिली टीकासहित)

एहिसँ अतिरिक्त किछु एहन पोथी प्रकाशित भेल जाहिम् किछु रचनाकारक आओर शेष श्री मिश्रजीक द्रव्यसँ प्रकाशित भेल अछि–
1॰ डॉ० अमरनाथ झाक शतवार्षिकी सामारोह आयोजनोत्तर अवशिष्ट राशि एवं शेष राशि श्री मिश्रजी दए– डॉ० अमरनाथ झा प्रणीत– 'लिटरेरी स्टडीज' प्रकाशित भेल।
2॰ पं० श्यामानन्द ठाकुर रचित– 'नवकी मामी'क रचयिता छह हजार टाका देने रहथिन्ह अओर शेषराशि श्री मिश्रजी दए प्रकाशित करौलन्हि।
3॰ म० म० बालकृष्ण मिश्र स्मृतिग्रन्थमे मिश्रजीक वंशजसँ प्राप्त राशि आओर शेष राशि जगदीश मिश्र दए प्रकाशित करौलन्हि।

श्री मिश्रजीक मार्गनिर्देशनमे पीएच० डी० उपाधि प्राप्त शोध छात्र छथि।
1॰ डॉ० श्री मित्रनाथ मिश्र, पूर्व मैथिली प्राध्यापक, भी० एस० जे० कॉलेज राजनगर, मधुबनी, "महाप्रभु चौतन्य प्रवर्तित नव वैष्णववाद केर दार्शनिक पृष्ठभूमिमे महाकवि गोविन्द दासझाक पदावलीक शास्त्रीय अध्ययन" विषयपर ललित नारायण मिथिला विश्वविद्यालय दरभंगासँ 1997ई०मे पीएच० डी० उपाधि प्राप्त कएलन्हि।
2॰ डॉ० अजीत मिश्र, सहायक प्राचार्य, मैथिली, एम० एल० एस० कालेज, सरिसब–पाही, मधुबनी, "सरसकवि ईशनाथ झा ओ पं० गोविन्द झाक नाटकक तुलनात्मक अध्ययन" विषयपर ललित नारायण मिथिला विश्वविद्यालय दरभंगासँ 2000ई०मे पीएच० डी० उपाधि प्राप्त कएलन्हि।

श्री मिश्रजी जहिना शास्त्रीय पक्ष छैन्हि ओहिना समाजिको पक्ष छैन्हि। ई अपन अध्ययनवस्थामे कष्टानुभव कएलैन्हि, ओ वेदना हिनका सेवामे अएलो पर नहि बिसरलैन्हि, तँ ई निश्चय कएलैन्हि–जेना हमरा महाविद्यालयक शिक्षण शुल्क नहि देबाक कारणें चन्द्रधारी महाविद्यालय, दरभंगासँ नाम कटाए एम० एल० एस० कालेज सरिसबमे नामांकन कराबए पड़ल ओ कष्ट अन्य छात्रकँ यथासँ सहन नहि करए पड़ैन्हि तँ अपन सामर्थ्यानुसार 07 निर्धन छात्रके महाविद्यालयक सम्पूर्ण शुल्क 1970ई० सँ 2003 धरि (अर्थात सेवानिवृत्त पर्यन्त) महाराज लक्ष्मीश्वर सिंह महाविद्यालय, सरिसबपाही मधुबनीमे दैत छलाह। सेवानिवृत्त भेलोपर अद्यावधि कोनो वर्ष दू, कोनो वर्ष चारि, कोनो वर्ष पाँच तथा सात छात्रक सम्पूर्ण महाविद्यालय शुल्क दैत रहलाह अछि।

डॉ० मिश्रजीक चरितसँ आकृष्ट भए विभिन्न संस्था हिनका सम्मानित कएलक, जाहिमे उल्लेखनीय अछि–
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सन्दर्भ 1 :– साहित्यरथी 'डॉ० श्री जगदीश मिश्र अभिनंदन ग्रन्थ पृष्ठ 26–27
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दृष्टिगत सम्पूर्ण ब्रह्माण्ड अद्भुत रहस्यमयी, चमत्कारिक एवं अनेकानेक अनुसलझी सम्भावनाओं का एक पुंज है। ब्रह्माण्ड की व्यापकता, विविधता, विचित्रता एवं एक सुनियोजित व्यवस्था हर किसी को विस्मित अर्थात् आश्चर्यचकित करने वाली है। यह विस्मय मानव–प्रज्ञा एवं चिन्तन के समक्ष एक जिज्ञासापूर्ण चुनौती है, जिसे अनेकानेक दिव्य शक्ति यह दिव्य प्रज्ञा–चक्षुओं से युक्त मनुष्यों, ऋषियों, महर्षियों आदि ने अनादिकाल से ही स्वीकार किया। अपने दीर्घकालीन चिन्तन से मानवीय चित्त– शक्ति ने न केवल कई रहस्यों से पर्दा उठाया बल्कि आन्तरिक चित्त–शक्ति और बाह्य वैज्ञानिक–पद्धति एवं समृद्ध संसाधनों की सहायता से कई निष्कर्ष प्रस्तुत किए। मानवीय सहज जिज्ञासु प्रवृत्ति ने ब्रह्माण्ड के रहस्यों पर वैज्ञानिक एवं दार्शनिक अनुसंधान की एक विस्तृत श्रृंखला प्रस्तुत की है। भारतीय चिन्तन परम्परा अति प्राचीन काल से इस अनुसन्धान–प्रक्रिया में अग्रणी रही है। विश्व–साहित्य के प्राचीनतम ग्रन्थ मन्त्र संहिताएँ (वेद) इस चिन्तन का प्रारम्भ बिन्दु माना जा सकता है। वेद अन्तःस्फुरित ज्ञान का विराट विशाल संग्रह है, जिसे मन्त्र द्रष्टा ऋषियों न दिव्य– स्फुरण से प्राप्त किया व मन्त्रों के रूप में मूर्तता प्रदान की। इन ऋषियों ने महान् व व्यापक सत्य को अपने अन्तःप्रज्ञात्मक शक्ति से अनुभूत किया। ऐसा ही एक सत्य 'ऋत' की अवधारणा के रूप में हमें वेदों से प्राप्त होता है। जिसे प्रसिद्ध ब्रिटिश इतिहासकार ए॰एल॰ बाशम ने अपनी पुस्तक 'द वंडर दट वॉज इंडिया' में व्यक्त करते हुए ऋत के विचार को 'ऋग्वैदिक विचार की उच्चतम उड़ान कहा'। ऋत का अर्थ स्पष्ट करते हुए डॉक्टर राधाकृष्णन् ने कहा – "वह नियम जिसका वरुण अभिरक्षक है ऋत कहलाता है।" ऋत का शब्दार्थ – 'वस्तुओं की कार्यविधि' है। मूल रूप मं ऋत का विचार ब्रह्माण्ड से सम्बन्धित1 एक अवधारणा थी जिसमें ब्रह्माण्ड के ग्रहों की गति, ऋतुओं का परिवर्तन, दिन और रात होने की नियमित व्यवस्था के साथ– 2

साथ प्रत्यक्ष व अप्रत्यक्ष प्राकृतिक व वैज्ञानिक घटनाओं की व्याख्या ऋत के विचार के द्वारा करने की कोशिश की गई। ऋग्वैदिक ऋषियों की अन्तर्दृष्टि उच्चतम स्तर की थी, जिन्होंने इस व्यवस्था का विलक्षण साक्षात्कार किया। अर्थात् ऋत की धारणा का स्रोत केवल बौद्धिक नहीं वरन् अन्तर्ज्ञान या अन्तर्दृष्टि थी।

विश्व–साहित्य के प्राचीनतम ग्रन्थ 'ऋग्वेद' में ऋत शब्द लगभग 400 से अधिक बार प्रयुक्त हुआ ह। जिसके अनेक विद्वानों से कई अर्थ प्रस्तुत किए। कुछ प्रमुख विद्वानों का नामोल्लेख कुछ इस प्रकार है जिन्होंने ऋत को एवं उसके अर्थ को स्पष्ट करने का प्रयास किया – निरुक्तकार यास्क, महर्षि सायण, महर्षि अरविन्द, दयानन्द सरस्वती, ऋग्वेद भाष्यकार ग्रिफिथ, मोनियर विलियम्स, वी॰एम॰आप्टे, ग्रासमान, डॉक्टर मंगलदेव शास्त्री, गोविन्द चन्द्र पाण्डेय, मुंशीराम शर्मा, संस्कृत विद्वान ब्लूमफील्ड, राधाकृष्णन्, दामोदर सातवलेकर, पाण्डुरंग वामन काणे आदि विद्वान इस विस्तृत सूची में सम्मिलित हैं।

निरुक्तकार यास्क ने ऋत के तीन अर्थ किए – सत्य, यज्ञ एवं उदक। महर्षि सायण2 ने 'ऋत' को कर्मफल स्रोत एवं गति अर्थ का वाचक भी माना। मोनियर विलियम्स3 ने ऋत को दैवीय सत्य, यज्ञ सम्बन्धी नियम तथा दैवीय नियम कहा। महर्षि अरविन्द4 ने 'ऋतम्' को सत्य का पर्याय माना है। सत्य अर्थात् वस्तुओं का सत्य, जगत का सत्य, देवताओं का सत्य, हम सब जो कुछ हैं और वस्तुएँ जो कुछ हैं उन सबके पीछे विद्यमान सत्य। अन्य अनेक विद्वानों ने अपने ग्रन्थों व लेखों में ऋत के अर्थ को स्पष्ट करते हुए सत्य, यज्ञ, कर्मफल, गति, प्राकृतिक विधान या नियम, विश्व की व्यवस्था का निर्देश करने वाले तत्त्व, पवित्र नियम, शाश्वत विधान, दैवीय नियम, यज्ञ सम्बन्धी विधान, शाश्वत सत्य, ब्रह्माण्ड का अपरिवर्तनीय नियम, नैतिक विधान, सदाचार का मानदण्ड, धर्म, ईश्वरीय कानून, निश्चित नियम, आदेश, अलौकिक नैतिक, आध्यात्मिक वैज्ञानिक व्यवस्था आदि अर्थों का वाचन माना।5

ऋग्वेद में ऋत और सत्य साथ–साथ आए हैं, जिससे प्रकट होता है कि दोनों परस्पर सम्बन्ध होते हुए भी भिन्न तत्त्व हैं। कई भारतीय विद्वानों से ऋत को सत्य का पर्याय ही माना है। गोविन्द चन्द्र पाण्डेय ने अपनी पुस्तक 'वैदिक संस्कृति' 6 में 3

कहा – ऋत, सत्य और देवता एक ही तत्त्व के तीन आयाम थे। ऋत की अवधारणा वैदिक चिन्तन की अद्भुत देन है। ऋत एक स्थिर अवधारणा नहीं है बल्कि यह एक गत्यात्मक अवधारणा है जो निरन्तर गतिशील अवस्था में विस्तार पाते हुए सत्य से होते हुए धर्म के रूप में प्रसारित होती है। ऋत को जगत की शाश्वत नैतिक, प्राकृतिक और वैज्ञानिक व्यवस्था कहा जा सकता है।

ऋत के मूल में गत्यर्थक 'ऋ' धातु है जो निर्विकार एवं स्थिर रहने वाले परम तत्त्व की अपेक्षा गति के रूप में समस्त सृष्टि के मूल तत्त्व के रूप में विद्यमान है। ऋत का विचार प्रकृति के सुदृढ़ नियम एवं एक व्यवस्था को दर्शाता है। जिसमें किसी चमत्कार, तारणहार व किसी हस्तक्षेप का कोई स्थान नहीं, परन्तु उसमें वैश्विक एकरूपता है एवं यह प्राकृतिक नियम तर्क के नियमों से भी असंगत नहीं है। ऋत की अवधारणा भारतीय–चिन्तन की सूक्ष्मता, गहनता, व्यापकता व वैज्ञानिकता का प्रतिनिधित्व करती है, जो विश्व के प्राचीनतम ग्रन्थ

ऋग्वेद की केन्द्रीय अवधारणा है। यह एक सर्वव्यापी लौकिक व्यवस्था है जो प्रकृति और मानव जाति के बीच एक सामंजस्य, सन्तुलन और सद्भाव को स्थापित करती है। ऋत ब्रह्माण्ड में अन्तर्निहित एक अदृश्य जो न केवल ब्रह्माण्डीय व्यवस्था का आधार है बल्कि नैतिक–मूल्यों के नियन्त्रक व संरक्षक भी मानी गयी है। मानव–समाज में स्थापित सामंजस्य और सन्तुलन के लिए यह व्यवस्था जिम्मेदार है। यदि समाज का सन्तुलन और सामंजस्य बिगड़ता है तो एक पीड़ादायक अव्यवस्था जन्म लेती है। ऋत ही वह शक्ति है जो इस पीड़ादायक अव्यवस्था से बाहर निकाल कर व्यवस्था को जन्म देती है। ऋत सामंजस्य स्थापित करने वाली अदृश्य शक्ति के रूप में विद्यमान है। ऋत के अर्थ व स्वरूप के सन्दर्भ में अनेक मत व विचार समय–समय पर दिए गए जिनका अध्ययन एवं विश्लेषण अपेक्षित है।

'ऋत' का कोई भी साधारण अर्थ स्वीकार्य नहीं है क्योंकि ऋग्वैदिक मन्त्रों में ऋत की चर्चा एक विराट शक्ति के रूप में की गई है, जिससे सम्पूर्ण ब्रह्माण्ड के समस्त देवता संचालित हैं। यह अलंघनीय व्यवस्था है, यद्यपि वरुण देवता को ऋत का संचालक कहा गया है परन्तु साथ ही यह भी व्यवस्था स्पष्ट है कि स्वयं वरुण 4

देवता भी ऋत का उल्लंघन नहीं कर सकते, वो स्वयं भी इसमें नियमित व संचालित होते हैं। इसलिए कहा गया है कि ऋत सृष्टि का मूल नियामक है। वरुण और मित्र सत्य धर्मा होने के कारण ऋत के रक्षक माने जाते हैं। समस्त भौतिक व आध्यात्मिक सत्ताएँ ऋत से संचालित है। वैदिक काल में सृष्टि के चिन्तन का मूलाधार ऋत की अवधारणा ही थी। ऋत की उत्पत्ति 'ऋ' धातु से हुई जो कि पूर्व में स्पष्ट कर चुके हैं कि ऋत का यह एक गत्यात्मक अर्थ है अर्थात् गति का वाचक है। जो समस्त संसार की गति, सुव्यवस्था, नियमितता, निरन्तरता का आधार है। ऋत के बारे में जी.सी. पाण्डे ने अपनी पुस्तक में कहा है – "परम व्योम में अवस्थित देश कालातीत

ऋत सृष्टि का मूल तत्त्व और नियामक है, उसका प्रतिदर्श और आदर्श है।"7

ऋत 'ऋग्वेद' में प्रतिपादित आत्मविज्ञान है जो परमार्थ का साधक है अर्थात् ऋत पारमार्थिक लक्ष्य का आध्यात्मिक साधन है, जिसमें नैतिक नियमों का पालन, सत्याचरण एवं धर्माचरण अन्तर्निहित है। ऋत की अवधारणा एक दृष्टि से वेदों में प्रतिपादित 'धर्म' और 'ब्रह्म' कहे जा सकते हैं। 'धर्म' श्रेयस प्राप्ति का विधान है तो 'ब्रह्म' स्वयं नीःश्रेयषभूत परम तत्त्व सत् है। तात्पर्य यह है कि ऋत, सत्य और ब्रह्म अभिन्न है। इस बारे में जी.सी. पाण्डे ने कहा है – "परवर्ती वैदिक काल में 'ऋत' का स्थान 'धर्म' ने ले लिया।"8

भारतीय चिन्तन परम्परा की सर्वाधिक व्यापक अवधारणा बन गई। यद्यपि धर्म कई चरणों में दीर्घकाल के चिन्तन–मनन के फलस्वरूप विकसित हुआ एक प्रत्यय है, जो अनेक अर्थों को अपने में समाहित करता है। यदि धर्म के स्वरूप को सही अर्थों में समझा जाए तो यह न केवल भारतीयों बल्कि सम्पूर्ण मानव जाति के उत्कर्ष की

क्षमता रखता है। वैशेषिक सूत्रकार महर्षि कणाद ने धर्म को परिभाषित करते हुए कहा है कि – "यतोऽभ्युदय निःश्रेयश सिद्धिः स धर्म"9 अर्थात् जिससे अभ्युदय एवं निःश्रेयश की प्राप्ति होती है वह धर्म है। इस प्रकार ये कहा जा सकता है कि ऋत की अवधारणा वैदिक चिन्तन की अद्भुत देन है। इस विचार का प्रभाव सभी भारतीय दार्शनिक परम्पराओं में कमोवेश दिखाई देता है, यह पूर्णतः वैज्ञानिक दृष्टि व चिन्तन है। इसकी प्रमाणिकता का एक 5

दृढ़ प्रमाण तो यही है कि किसी भी दार्शनिक परम्परा में इसका खण्डन दिखाइ नहीं देता है। भारतीय चिन्तन में कर्मवाद के सिद्धान्त का आधार यह मूल बीज ऋत सिद्धान्त में पाया जाता है।

सन्दर्भ सूची

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विभागाध्यक्ष

एकटा साहित्यकारक लेल काव्य श्रृजन करब (कविता,कथा, नाटक, उपन्यास ओ निबन्ध वा प्रबन्ध इत्यादि लिखब) सुभीतगर काज थिक । एतए धरि कि आलोचना-समालोचना सेहो ओतेक भरिगर काज नहि अछि, जतेक की कोनो हेराएल, भुतिआएल नुकाएल अतीतक लोककंठसँ विस्मृत उपयोगी काव्यकेँ संकलित करब आ ओकरा पुनि लोक समग्र प्रस्तुत करब अछि। ओहने परम लोकोपयोगी छथि (खासक' मैथिल लेल) डाक ओ हुनक पद रचना अर्थात डाक-वचन। अतीतमे डाक ओ डाक-वचन लोकक कंठमे बसल छल कालांतरमे से विरल होइत गेल मानू विलुप्तक स्थितिमे पहुंचि गेल; एहन स्थितिमे कैकगोटे एहन व्यक्ति भेलाह जे डाक ओ डाक-वचन केँ सहेजबाक प्रयत्न कएलाह , परंच एहिमे सफल भेलाह व्याकणाचार्य पण्डित श्री जीवानन्द ठाकुर (दरभंगा राजकीय संस्कृत पुस्तकालयाध्यक्षक) । हिनके सन साहित्य सिनेहि लोकसँई कार्य संभव भए सकल । एहन सर्वलोकोपयोगी पोथीकेँ मूर्त रूप देबामे सभसँ पैघ हाथ अछि 'मैथिली साहित्य परिषद, दरभंगा ओ आर्थिक सहयोग प्रदाता 'पण्डित श्री शिवनाथ झा'केँ जिनक अतुलनिय सहयोगसँ "मैथिल डाक" सर्वसुलभ भेलाह ।

उपर्युक्त गप्प त' भेल 'साहित्यिकी' सँ पूर्वक गप्प, आब 'साहित्यिकी' ओ 'मैथिल डाक' केर सबंध देखैत छी । ई बात साहित्यिकीक 351 म मासिक बैसारक छी, बैसारमध्य एकाएक एकटा पोथी अति जर्जर स्थितिमे (जकर पूर्वमे प्रकाशन 1949-50 मे भेल छल।) सर्वसमक्ष भेल, सभक ध्यान अपना दिस आकृष्ट कएलक आ सभ केओ एकमतसँ एहि निर्णयपर पहुँचलाह जे एहि धरोहर-साहित्यकेँ पुनर्प्रकाशन साहित्यिकीक द्वारा कएल जाए आ ओएह पोथी पर आइ हमरा लिखबा अवसर भेटल अछि ।

साहित्यिकीकेँ 'मैथिल डाक' पर आकर्षित होएब आ तकरा प्रकाशित करब, एकर पाछू किछु विशेष कारण छल । ओ कारण ई जे 'मैथिल डाक' जकर उपलब्धता निश्चिते संदेहास्पद छल । जँ किछु पोथी भेटबो करैत तँ एना सर्वसुलभ तँ नहिए भेटैत, तँ साहित्यिकी ओहि धरोहर-साहित्यकेँ प्रकाशित कए माँ मैथिलीक सेवाक एहन अवसर पाबि गौरवक अनुभूति कएलक । दोसर जे एहि पोथीक प्रकाशनसँ जुड़ल ओहि महान साहित्यकारक योगदान, जिनक मैथिली सेवा, अपूर्व व्यक्तित्व ओ नेतृत्वसँई सरिसब-पाही परिसर आप्यायित होइत आएल अछि । हैं, हम गप्प कए रहल छी आधुनिक मैथिली साहित्यक प्रेरणा-पुरुष डॉ. काञ्चीनाथ झा 'किरण' आ प. जीवानन्द ठाकुरक, जिनकर योगदान अविस्मरणीय अछि।

"डाक आ हुनक साहित्य मैथिली साहित्यक आधारस्तम्भ थिक, यद्यपि आदिकालीन साहित्यकार सदृश हुनको समयक सङ्ग्ज किन्तु-परन्तु तँ लगले अछि । समयावधि जे हो, उपरोक्त पोथी चौहत्तरि सालक बादो डाक सम्बन्धी एकमात्र प्रामाणिक पोथी थिक, जाहिपर आधृत अछि डाक-साहित्यक अध्ययन ।"

डाकक परिचय :-

(क) मैथिल - ओना त' डाकक जन्म कहिया, कतए ओ कोन वंशमे भेलनि ओ सभ दिने विवादास्पद रहल अछि। तथापि डाकक संबंधमे बहुत रास प्राचीन पत्र ओ अर्वाचीन पत्र-पत्रीकाक संग पोथी ओ किंवदन्ति हुनक परिचय करबैत अछि । यथा - हरिपति ठाकुरक 'व्यवहार प्रदीप' , रामनरेश त्रिपाठीक ' 'घाघ-भड्डुरी' (ओना ई अप्रासंगिक छैक ।) , शुभंकर ठाकुरक 'तिथिद्वैधनिर्णय' , महाकवि कालीदास कृत 'विक्रमोर्वशीय नाटक' , 'ग्राम विचार' आ मिथिलाक जन-जन मुँहक खिस्सा दैत अछि डाकक परिचय ।डाक मैथिल छलाह, ई कथा मिथिलाक प्रत्येक व्यक्तिकें बुझल छैक । आइओ-काल्हि मिथिला बहुतमे पण्डितकल्प व्यक्ति भेटैत छथि जे घूमि-घूमिके डाकक वचनक सहायतासँ डीह गुनि वा दिन गुनि कार्य कय जीवन यापन करैत छथि । प्रायः आन कोनहु देशमे ई बात नहि अछि

। एही कारणे ई कथा कहब जे डाकक प्रचार मिथिलासँ बढ़िकय अन्यत्र कतहु नहि भेल अछि । वस्तु स्थितिसँ सर्वथा मानय पड़ैत अछि जे वास्तवमे डाक मैथिल छलाह ।

म०म०डा० श्री उमेश मिश्र 'हिन्दुस्तानी एकेडेमी पत्रिका' मे एक लेख द्वारा डाककें "मैथिल" सिद्ध कयने छथि । परन्तु प्रमाणक अभाव रहबे कयल । किन्तु मैथिल डाकक संबंधमे जीवकांत ठाकुर जीकँ वक्तव्यसँ पी•इ•एन• पत्रिकाक माध्यमे स्पष्ट होइत अछि ....

"At the recent Nagpur session of the All India Oriental Conference Shri Jivananda Thakur's paper on Dak was read. It gives several new arrangements for Daka's having been a Maithila poet and quotes a number of Daka's verses from very old manuscripts in Shri Thakur's possession and in the Raj Darbhanga Library."

एहिमे पत्रिका मानि रहल अछि जे ठाक मैथिली छलाह ।

एहि प्रस्तुत पोथी "मैथिल डाक" डाकक मैथिलत्वक महत्त्वपूर्ण प्रमाण स्वरूप भेल अछि । जाहिमे श्री जीवानन्द ठाकुर डाकक मैथिल होएबाक अकाट्य प्रमाण प्रस्तुत करैत छथि, जाहिसँ डाकक मैथिल होएबामे कोनोटा संदेह नहि रहि जाइत अछि ।

(ख) डाकक जाति - एहि सम्बन्धमे विशेष प्रमाणक आवश्यकता नहि अछि । ओ तँ डाकक पद स्वयं पुष्टि करैत अछि "कहथि गोआर" "कहिअ गोआरे", 'कहिगेल डाक गोआर" इत्यादि । स्वकथित प्रमाण देखल जाउ -

संस्कारक संबंधित पद मे

सोलह बाइस चौबीस पर्यन्त,
क्रम सौ ब्रात्यसावित्रीकान्त ।
बर्ष शुद्धि कह "डाक" गोआर,
पाँच सौ सातहुँ करी बिचार ।।

वृक्ष फल

सदन समीर विटप वट होय,
धन ताके तस्कर नित खोय ।
सोई तरु पुनि नगर मझार,
ताहि सुखद कह "डाक" गोआर ।।

यात्रा प्रकरण

गामक ठकठक बासक वान, हाथ मुँह दए चिल्हका कान ।
ताहू सो जो भेटए मलहारी, की होइ राजा की अधिकारी ।।
वामे फनिपति दहिन सिआर दही लएह दहीलएह 'कहए गोआर ।
तकरो आगाँ जो भेटए मलाह, देखि मोन करी परम उछाह ।।

विविध प्रसंग

बाती ठकनहि माष तिले, कहि गेल 'डाक गुआर ।
पछबा सँ उघड़ए मेघ, बिधवा करए सिंगार ।
ओ उढ़ड़ए ओ बरिसए, कहि गेल 'डाक गुआर' ।।

'गुआर' भेलाह गऊ के आहार जूटबै बला । ओना गुआर अपभ्रंश अछि ग्वार < ग्वाला । सोझ शब्दमे गुआर माने 'अहिर' अथवा 'यादब' जाति । तँ जातिक संबंधमे एहि पोथीमे फरिआएल अछि।

(ग) डाकक समय - डाकक समयक संबंध मे संकलनकर्त्ता लिख रहल छथि दन्तकथा जे हिनका सम्बन्ध मे सर्वत्र प्रचलित अछि ओ स्पष्टया कहि रहल अछि जे सुप्रख्यात दैवज्ञ वराहमिहिरक वीर्यसँ एक अहीरक क्षेत्रमे उत्पन्न भेल छलाह एहि ऐतिह्य के यदि प्रमाण मानी तँ-हिनक समय छठम शताब्दी निर्धारण कय सकैत छी- तखन तँ डाकक वचन "बौद्धगान ओ दोहा" एहू सँ प्राचीन सिद्ध होएत । आ' समस्त उत्तर भारतमे भाषाक सब सँ प्राचीन पद्य होएबाक गौरव हिनकहि (डाकहि) क बचन के प्राप्त होइत अछि । "प्राचीन तालपत्र पर लिखित वचन जे हम संग्रह कयल अछि ओकरा देखला सँ स्पष्ट भान होएत जे कीर्तिलताक भाषाअहुसँ विशेष प्राकृततर अछि आ प्राचीन अछि जे होएव ओकरा उचिते थिकैक । परञ्च तैओ भाषाक दृष्टि सँ विचार कय "बौद्धगान ओ दोहा" सँ तुलना कय हुनक समयनिर्धारण करब एक महत्वपूर्ण काज अछि जे कोनहु भाषातत्त्वविदे कय सकैत छथि । रायबहादुर दिनेशचन्द्र सेन डाकक समय दशम शताब्दी निश्चित करैत छथि । किछु होअ हमरा जे प्रमाण उपलब्ध अछि ओहि सँ एतबा सिद्ध होइत अछि जे चौदहम शताब्दी सँ बहुत पहिने डाक भय गेलाह आओर ऐतिहाक बलपर हुनका छठीमो शताब्दीमे कहि सकैत छी । परञ्च हमर दृष्टिमे एखन यावत घरि एहि सँ विशेष प्रमाण नहि भेटल अछि, तावत्धरि डाकके चौदहवी शताब्दी सँ पूर्विहँ होएब निश्चित होइत अछि ।"

विविध प्रकार देखला उत्तर इहए प्रतित होइत अछि जे हिनक जन्म दशम शताब्दीसँ पहिनो भेल होएत ।

(घ) डाकक रचनाक संस्कृत आधार - ईहए त' ओ आधार अछि जे डाकके विद्वान वा ज्योतिषी होएबाक संसय समाप्त करैत अछि । डाकक पद रचना "मुहूर्तचिन्तामणि" ,"कस्यप संहिता" , "नारद संहिता" इत्यादि संस्कृत पोथीक पदसँ मेल खाइत अछि । एहि सँ स्पष्ट अछि जे डाकक रचना ज्योतिषशास्त्रक संहिता ओ सैद्धान्तिक ग्रन्थक आधार पर भेल अछि । अद्भुत प्रकरण डाकक जे अछि से बारह मिहिराचार्यकृत वाराहीसंहिता सँ मिलैत जुलैत अछि परन्तु वल्लालसेन कृत "अद्भुत सागर"क घृतवचन सँ अधिकांश मे ग्रन्थक स्वारस्य अछि । एहि सब सँ स्पष्ट बुझना जाइछ जे डाकक रचनाक आधार संस्कृत शास्त्रे छलैन्हि ।

परंच ई पूर्णतः स्विकारल नहि जा सकैत अछि जे डाकक सभ रचनाक आधार संस्कृते छल । मिथिला क्षेत्रमे घटित होए बला लोकाचार संबंधी रचना जे संस्कृतक कोनो पोथीमे नहि भेटैत अछि से सभ 'डाक' द्वारा कहल गेल अछि।

(ङ) डाकक अंतिम समय - संकलनकर्त्ता कहि रहल छथि "यद्यपि मिथिलाक दन्त कथाक अनुसार डाक बारह वर्ष मे मरि गेलाह, परञ्च एहिमे नहि कोनहु प्रमाण अछि आ ने एहि वर्ष जीवैत छलाह ताहिमे प्रमाण अछि तथापि पूर्वक लोकक रहन सहन सँ बुझना जाइछ जे "शतायुर्वे पुरुषः" अवश्य होइत छल जेहो-

डाक अग्रजानि ई देखि ।
शुभयात्रा कहथि सब लेखि ।।

"अग्रजानी" सँ भविष्य कहनिहार अवश्य छलाह अछि अपन मृत्युक सम्बन्ध मे अवश्य जनैत छलाह जे हम पानि मे डूबि कय मरब -केश लटपटाय गेलासँ । अतएव ओ केशादि वपन कय लेलैन्हि । परन्तु मरबाक दिन पोखरि मे टीकक एक केश लटपटाइये गेलन्हि तखन ई पद्य-

"ई जनु बुझी डाक निर्बुद्धी
नाशहि काल विनाशहिँ बुद्धी" ।।

कहैत स्वर्गलोक प्रयाण कयल । एहि सँ डाक कहैत छथि जे अहाँ लोकनि डाक के निर्बुद्धि जनु बुझी-नाशक काल उपस्थित भेला सँ नीकहुँ बुद्धि विनाशकारिणी भय जाइत छैक ।"

एतए हम निश्चित रुपे कहब जे 'डाक' अल्पजीवी छलाह , ई हिनक पद ओ पोखरिमे एक गोट टीक लटपटायबा बला बात पर गौरसँ देखिऔ । पोखरिक पानिमे टीक कतए लटपटौतै ? तँ एकर उत्तर हेतैक जाठिमे । तखन इहो सोचै बला बात छैक जे जाठि पर कोनो बुढ़ लोक किआ जेतै ? आ जाइओ चाहतै त' ओकरा गेल नहि हेतैक। जाठि पर नबका छौंड़ा सभ जाइत अछि उत्सुकतावस । जौँ केश अथवा टीक लटपयबासँ पोखरिमे डूबि मुइलाह तँ ओ निश्चिते अल्प अवस्थामे परलोक गेलाह, ई सिद्ध होइत अछि।

एहि पोथी "मैथिल डाक" मे लोक संबंधी विभिन्न विषय-वस्तु, स्थित-परिस्थि, अन्न-धन, काल-विकाल, रहन-सहन, क्रिया-कलाप, आहार-व्यवहार, वास-चास, यात्रा, विभिन्न संस्कार ओ विविध विचार इत्यादिकेँ दिशानिर्देश लोक शैलीमे भेटैत अछि । से देखल जा सकैत अछि -

जन्मक फल-

"शनि रवि मंगल तीनू तेखा श्रवण धनिष्ठा ओ अश्लेषा ।
ओहि राति जँ बालक होय, माता पिता संहारय सोय ।।"

उपनयन-

"गर्भाष्टम बाभन के काल, एगारह बर्ष क्षत्री केर लाल ।
बारहम बर्ष वैश्य केर बाल; मनुष्य समय हेतु सबहिँ बेहाल ।।

शुभाशुभ वृक्षक फल-

सदन समीप नारिअल होई, गृह बहुत धन पाबए सोई ।
घर क ईशान पूब जो पाबए, ताके घर बहु पुत्र बढ़ाबए ।
पूरब दिशा आम यदि होय, धन दायक 'डाक' कहए सोय ।"

त्याज्य वस्तु-

" गोड़कट खाट उटकन छाड़, नारि कुलच्छनि चाकर चार ।
ई चारू के तुरंत परिहरी, तुम्बा बाढ़ि फकीरी करी ।।
शनि रवि फड़की मंगल खाट, ई तीनू ताकए स्वर्ग क बाट ।
कुपटी मित्र कोशलिआ माय, बुड़िबक बेटा टेटा जमाय ।।
कहहि "डाक" चारू परिहरी, बुड़िबक सन शशुरो नहि करी ।।"

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खेतीक प्रकरण -खेत जोतबाक

"ऊँचे नीचे करी चास, भाई भतीजे करी बास ।

से छाड़ि कए करह पचास, बड़दे कटतहु बड़दक घास ।।

थोड़ क जोतिह अधिक मइअबिअह ऊँच क बन्निहह आड़ि ।

जो खेत तैओ नहि उपजहुँ "डाक" के" पढ़िह गाड़ि ।।"

नव वस्त पहिरबाक सबंधमे कहैत छथि -

"कपड़ा पहिरी तीनि दिना, बुध बृहस्पति शुक्र दिना ।

शनि जारए रवि फाड़्ए, सोम करए सुडाह ।

मंगल मारए जीब सो, बुध पहिर घर जाह ।।

पुनि कहैत छथि

नँगटे पहिरी भुख लें खाई, जहाँ मन आबए तहाँ जाई ।।"

'डाक' अपन रचनामे लोक जीवनक सभ पहलूकैँ छूने छथि । इहए कारण हिनका पं० गोबिन्द झा डाककैँ 'पण्डित रत्न' नहि 'लोक रत्न'क उपाधि देलनि । ओ पंडित होइतहु लोक जीवनसँ दूर नहि भेलाह । ओ जे शास्त्र पढ़लनि से शास्त्रार्थमे विजय प्राप्त करबाक लेल नहि, अपन पाण्डित्य देखाय राज दरबारसँ सम्मान पयबाक हेतु नहि, अपितु, लोककैँ अपन-अपन काज-धंधामे आ जीवन यात्रामे बाट देखयबाक हेतु। जखन पण्डित लोकनि लोक भाषाकैँ हेय दृष्टिसँ देखैत छलाह, तखन ई (डाक) मैथिलीकैँ शास्त्रीय व्यवहारमे अनलनि। ई कारण रहल जे एतुक्का लोक हिनका स्वयंमे समाहित कए लेलकनि ।

निष्कर्षतः ई पोथी "मैथिल डाक" मैथिल लोक लेल परम हितकारक अछि। एहि पोथीमे लोकक सम्पूर्ण जिनगीमे घटित होएबला विभिन्न क्रियाकलापकैँ लोकोपयोगी बनाए सहज शैलीमे दिशा निर्देशित कएने छथि । एहि पोथीमे वर्णन कएल गेल सिद्धान्तके बुझबा गुणबा लेल कोनो ज्योतिषी विद्वान लग जएबाक खगता नहि अछि।ई पोथी एखनो ओहिना प्रासांगिक अछि जहिना अतीतमे छल आ भविष्यमे सेहो ओहिना प्रासांगिक रहत । डाकक कथ्य अर्थात हुनक रचनाक संग्रहित करब परम आवश्यक छल । ई पोथी आइ जन-जीवनक हेतु जन-जनक लेल अमुल्य धरोहर जेकाँ अछि। खास कए गामक ओहेन लोक सभ लेल जिनक प्रत्येक काजक आधार बनि गेल छल ठाक वचन । हुनका लोकनिकैँ त' डाक वचन कंठस्थ रहैत छलनि तैँ हुनका सभहक काज त' सुतरि जाइत छलनि, किन्तु आबक लोक बहुद्यमी छथि इहए कारण अछि जे ओ अपन पूर्वजसँ अपन परंपराक बहुत किछु हस्तांतर नहि कए पबैत छथि । परंच जीवन त' ओहए जीबक छनि त' एहन स्थितिमे गृहस्थ हेतु ई पोथी अति महत्वपूर्ण स्थान रखैत अछि ।

सन्दर्भ ग्रंथ:-

11. मैथिली डाक -   पण्डित श्री जीवानन्द ठाकुर (साहित्यिकी प्रकाशन)

12. मैथिली साहित्यक इतिहास (आदिकाल) - नालंदा खुला विश्वविद्यालय, पृष्ठ संख्या - 18

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सारांश

उद्यमिता एक कौशल दृष्टिकोण एवं कार्यपद्धति है। साधारणतया उद्यमी को उसके कार्यों से ही परिभाषित किया जाता है। उद्यमी वह व्यक्ति है जो कुछ विशेष कार्य (उद्योगों, व्यवसाय, व्यापार सेवा) करने के लिये विचारों को जन्म देता है और उन विचारों को क्रियान्वित करने के लिये अपनी तरफ से निश्चित तौर पर पहल और आत्मबल दिखाता है। जिससे यह विचार एक उद्यमशील कार्य का रूप धारण कर सके। राष्ट्र के आर्थिक विकास को बढ़ाने हेतु ग्रामीण उद्यमिता को बढ़ावा देने के लिये ग्रामीण उद्यमिता के अंतर्गत अनेक वर्ग पेशेवर संस्थाएं नियोजक वर्ग प्रवर्तक मिलकर उद्यमी का कार्य करते हैं।

प्रमुख शब्द :- कौशल , ग्रामीण उद्यमिता, ग्रामीण विकास, समुदाय, नियोजक

प्रस्तावना :-

ग्रामीण विकास पहले से कहीं अधिक उद्यमिता से जुड़ा है। आजकल ग्रामीण विकास को बढ़ावा देने वाले संस्थान और व्यक्ति उद्यमिता को एक रणनीतिक विकास हस्तक्षेप के रूप में देखते हैं जो ग्रामीण विकास की प्रगति को गति दे सकता है। हालाँकि, उद्यमिता एक स्वस्थ अर्थव्यवस्था और पर्यावरण को बनाए रखने के लिए व्यक्तियों, परिवारों और समुदायों के लिए जीवन की गुणवत्ता में सुधार लाने का माध्यम है। ग्रामीण विकास के संदर्भ में उद्यमशीलता बिंदु उद्यमिता को आर्थिक वृद्धि और विकास की केंद्रीय शक्ति के रूप में स्वीकार करता है, इसके बिना विकास के अन्य कारक व्यर्थ हो जाएंगे। उद्यमिता को केंद्रीय विकास शक्ति के रूप में स्वीकार करने से ग्रामीण विकास और ग्रामीण उद्यमों की उन्नति नहीं होगी, बल्कि ग्रामीण क्षेत्रों में पर्यावरण उद्यमिता को सक्षम करने की तत्काल आवश्यकता होगी जो ऐसे वातावरण का अस्तित्व निर्माण कर ग्रामीण उद्यमिता को बढ़ावा देने वाली नीतियों पर निर्भर करता हो और ऐसी नीतियों की दक्षता उद्यमिता के बारे में एक अमूर्त संरचना पर निर्भर करती है। उद्यमिता एक कौशल, दृष्टिकोण, चिंतन, तकनीक एवं कार्यपद्धति है ,जो एक मात्र जीवकोपार्जन की कार्यप्रणाली ही नहीं बल्कि कौशल (Skill) एवं व्यक्तित्व (Personality) विकास की प्रभावी तकनीक भी है।

अध्ययन का उद्देश्य :-

- भारत केआर्थिक विकास में उद्यमशीलता के योगदान को रेखांकित करना।
- ग्रामीण रोजगार के अवसर में उद्यमिता के भागीदारी को सुनिश्चित करना।
- ग्रामीण उद्यमिता से संबंधित चुनौतियां एवं समस्याओं का पता लगाना।
- भारत में ग्रामीण उद्यमिता विकास कार्यक्रम के क्रियान्वयन से ग्रामीण जन- जीवन स्तर पर प्रभाव को जांच करना।

अध्ययन की परिकल्पना :-

भारत के आर्थिक विकास में ग्रामीण उद्यमिता के योगदान से संबंधित शोध अध्ययन निम्न परिकल्पना पर आधारित है :-

- भारत के आर्थिक विकास में उद्यमिता विकास कार्यक्रम का महत्वपूर्ण योगदान है।
- भारत के औद्योगिक विकास एवं उद्यमिता विकास कार्यक्रम में व्यावसायिक पर्यावरण का महत्वपूर्ण योगदान है।
- भारत में बेरोजगारी की समस्या का स्थायी समाधान देश में समाज के उद्यमी कारण द्वारा स्वरोजगार में निहित है।

ग्रामीण उद्यमिता की प्रकृति एवं विशेषताएं :

- **स्थानीय समस्याओं का समाधान:** ग्रामीण उद्यमिता उन व्यक्तियों या समूहों को संकल्पित करती है जो स्थानीय समस्याओं जैसे कि बेरोजगारी, गरीबी, शिक्षा और स्वास्थ्य सेवाओं की कमी आदि का समाधान करने के लिए उत्साहित होते हैं।

- **सामाजिक उत्थान**: ग्रामीण उद्यमिता सामाजिक उत्थान की प्रोत्साहन करती है और समाज में समानता, न्याय और स्वास्थ्य जैसे मुद्दों पर ध्यान देती है। यह सामाजिक और सांस्कृतिक असमानता को कम करने में मदद करती है।

- **व्यावसायिक उत्पादकता**: ग्रामीण उद्यमिता नए व्यवसायों की स्थापना और विकास को प्रोत्साहित करती है, जो स्थानीय उत्पादन को बढ़ावा देते हैं और अर्थव्यवस्था को सुदृढ़ करते हैं। यह नौकरी सृजन और आय संसाधन को बढ़ाती है।

- **पर्यावरणीय संरक्षा**: ग्रामीण उद्यमिता पर्यावरणीय संरक्षा के लिए भी महत्वपूर्ण है, जैसे कि स्थानीय संसाधनों का सही उपयोग करके वातावरण की रक्षा करना।

- **स्थानीय उत्पादन की प्रोत्साहन**: ग्रामीण उद्यमिता स्थानीय उत्पादन को बढ़ावा देती है और उसके उत्पादों की बिक्री और विपणन में मदद करती है, जिससे स्थानीय अर्थव्यवस्था में सुधार आता है।

ग्रामीण उद्यमिता का क्षेत्र:-

ग्रामीण उद्यमिता का क्षेत्र विस्तृत हो सकता है और इसमें विभिन्न क्षेत्रों में उद्योग, सेवाएँ और सामाजिक उपक्रम शामिल हो सकते हैं। यहां कुछ प्रमुख क्षेत्र दिए जा रहे हैं, जिनमें ग्रामीण उद्यमिता का दायरा हो सकता है:

- **कृषि और सम्बन्धित उद्योग**: गांवों में कृषि उत्पादन, खेती, बागवानी, पशुपालन, मछली पालन आदि। इसमें नए तकनीकी उपकरणों का उपयोग, उत्पादों की प्रसंस्करण और विपणन भी शामिल हो सकता है।

- **स्थानीय उद्योग और शिल्पकला**: हस्तशिल्प, धातुकला, लकड़ी कारी, खादी उत्पादन, गर्मी संचार उत्पादन आदि। इसके माध्यम से स्थानीय कला और शिल्पों को संरक्षित रखने और विकसित करने का प्रयास किया जा सकता है।

- **सेवा उद्योग**: ग्रामीण क्षेत्रों में शिक्षा, स्वास्थ्य सेवाएँ, प्राथमिक स्वास्थ्य देखभाल, बालविकास, बिजली, पानी, सड़कों का निर्माण और रखरखाव, ग्रामीण बैंकिंग आदि।

- **पर्यटन और अतिथि सेवाएँ**: ग्रामीण क्षेत्रों में पर्यटन के माध्यम से आर्थिक विकास का प्रयास, होमस्टे, रुचि के स्थल, प्राकृतिक संरक्षण, स्थानीय खाद्य पदार्थों के प्रचार-प्रसार आदि।

- **सामाजिक उपक्रम और संगठनात्मक उद्यमिता**: ग्रामीण क्षेत्रों में समुदाय के विकास को समर्थन देने वाले पहल, महिला सशक्तिकरण, युवा विकास, जल संरक्षण, वृक्षारोपण, वातावरण संरक्षण आदि।

इन सभी क्षेत्रों के माध्यम से ग्रामीण उद्यमिता के द्वारा स्थानीय समुदायों का विकास हो सकता है और साथ ही स्थानीय अर्थव्यवस्था में वृद्धि भी हो सकती है।

ग्रामीण उद्यमिता की आवश्यकता एवं महत्व :-

भारतीय अर्थव्यवस्था में ग्रामीण उद्यमिता एक महत्वपूर्ण भूमिका निभाती है,जो भारत के आर्थिक विकास में भागीदारी को सुनिश्चित करता है , यहाँ पर कुछ प्रमुख घटकों का वर्णन किया गया है :-

- **रोजगार सृजन**: ग्रामीण क्षेत्रों में उद्यमिता के माध्यम से नौकरी सृजन होता है। छोटे उद्योग, पशुपालन, कृषि उत्पादन, हाथ का बना उत्पादन आदि के विकास से स्थानीय आय का स्रोत मिलता है।

- **आय वृद्धि**: ग्रामीण क्षेत्रों में उद्यमिता से स्थानीय लोगों की आय में सुधार होता है। यह उन्हें गरीबी से बाहर निकालकर समृद्धि की दिशा में बदलाव लाता है।

- **सामाजिक सुधार**: ग्रामीण उद्यमिता से समाज में सामाजिक सुधार होता है। महिलाओं और युवाओं के लिए नई अवसर प्राप्त होते हैं, जिससे समाज में उनकी भूमिका मजबूत होती है।

- **स्थानीय स्वावलंबन**: ग्रामीण उद्यमिता से स्थानीय स्वावलंबन बढ़ता है। लोग स्वयं से अपनी जरूरतों को पूरा करने के लिए उद्यमिता द्वारा उत्पादित वस्त्र, खाद्य, औद्योगिक सामग्री आदि तक पहुंच पाते हैं।

- **राष्ट्रीय अर्थव्यवस्था में योगदान**: ग्रामीण क्षेत्रों में उद्यमिता से नकारात्मक योगदान कम होता है और देश की अर्थव्यवस्था को सुधारने में सहायक होता है।

इस प्रकार, ग्रामीण उद्यमिता भारतीय अर्थव्यवस्था में सामूहिक और व्यक्तिगत स्तर पर महत्वपूर्ण भूमिका निभाती है, जो सामाजिक और आर्थिक विकास में सकारात्मक परिणाम लाती है।

ग्रामीण उद्यमिता के प्रकार :-

ग्रामीण उद्यमिता सामाजिक, आर्थिक , राजनैतिक और स्थानीय वातावरण में विकसित होती हैं। ये मुख्यतः निम्नलिखित प्रकारों से हो सकती हैं:

- **कृषि-आधारित उद्यमिता**: गांवों में कृषि या पशुपालन से संबंधित उद्यमिता, जैसे की खेती, बागवानी, दुग्ध उत्पादन, मछली पालन आदि।

- **ग्रामीण समुदाय के सामाजिक उद्यमिता**: समुदायिक संगठन, किसान समूह, महिला सशक्तिकरण समूह आदि जो समुदाय के विकास और समृद्धि में सहायक होते हैं।
- **ग्रामीण पर्यटन उद्यमिता**: ग्रामीण क्षेत्रों में पर्यटन को बढ़ावा देने वाले उद्यमिता, जैसे की होमस्टे, प्राकृतिक स्थलों के पर्यटन, स्थानीय शिल्पों और विरासत का प्रचार-प्रसार करने वाले उद्यमिता।
- **कला एवं सांस्कृतिक उद्यमिता**: स्थानीय कला एवं सांस्कृतिक धरोहर को बचाने, प्रोत्साहित करने और उसका संरक्षण करने वाले उद्यमिता।
- **संगठनात्मक उद्यमिता**: समुदाय के विकास के लिए सामूहिक पहल, उद्यमिता और नेतृत्व के माध्यम से किए जाने वाले उद्यम।

इस प्रकार ग्रामीण उद्यमिता से ग्रामीण क्षेत्रों में रोजगार, आय की स्तर में सुधार, और सामाजिक सुरक्षा के साधनों को बढ़ावा देने में मदद करते हैं।

आर्थिक विकास में उद्यमिता की भूमिका :-
यह विशेष रूप से दो प्रमुख क्षेत्रों में प्रभावी होती है :

(i)निजी क्षेत्र (Private sector)

और

(ii)सामाजिक/सार्वजनिक क्षेत्र।Public (sector)

(I)निजी क्षेत्र (Private sector)में उद्यमिता :-
- **नई रोजगार सृजन** :- उद्यमिता नए उद्योगों और व्यवसायों की स्थापना में महत्वपूर्ण भूमिका निभाती है। यह रोजगार के अवसरों को बढ़ाती है और अनुकूल वातावरण बनाती है जो आय वृद्धि में सहायक होता है।
- **विनिवेश को प्रोत्साहन**: उद्यमिता नए प्रोजेक्ट्स और नवीनतम प्रौद्योगिकियों में निवेश को बढ़ाती है, जिससे विनिवेश और विकास में गति आती है।
- **उद्योग की स्थापना और विस्तार**: उद्यमिता बड़े और छोटे उद्योगों की स्थापना और विस्तार में मदद करती है, जो नौकरी सृजन को बढ़ाते हैं और अर्थव्यवस्था को मजबूती प्रदान करते हैं।

(ii)सामाजिक/सार्वजनिक(public Sector)क्षेत्र में उद्यमिता :
- **समाज सेवाओं का प्रदान**: उद्यमिता सामाजिक सेवाओं को प्रदान करने में मदद करती है, जैसे कि शिक्षा, स्वास्थ्य सेवाएं, और अन्य सामाजिक उपक्रम।
- **सामुदायिक विकास**: उद्यमिता सामुदायिक विकास के लिए प्रेरित करती है, जैसे कि नए और सुस्त प्राथमिक स्वास्थ्य केंद्र, जल संरक्षण योजनाएं, और सामुदायिक संस्थाएं।इन सभी प्रकार से, उद्यमिता अर्थव्यवस्था में सकारात्मक परिवर्तन लाती है और विकास के लिए नए मार्ग प्रकट करती है। यह समृद्धि, सामाजिक न्याय, और समृद्ध समाज की दिशा में प्रगति करने में महत्वपूर्ण योगदान देती है।
- **स्वालंबन को बढ़ाना**: ग्रामीण उद्यमिता का मतलब है गांवों और छोटे शहरों में उत्पन्न होने वाले व्यावसायिक और सामाजिक पहलुओं की अवधारणा। इसका मुख्य उद्देश्य है स्थानीय समुदायों के विकास और स्वावलंबन को बढ़ाना।

ग्रामीण उद्यमिता के विकास में आने वाली समस्याएँ :-
ग्रामीण उद्यमिता के विकास में कई समस्याएँ आ सकती हैं, जो उनकी गतिविधियों और सफलता को प्रभावित कर सकती हैं। ये समस्याएँ निम्नलिखित हो सकती हैं:
- **वित्तीय संकट**: ग्रामीण क्षेत्रों में वित्तीय संकट सामान्य होता है, जो उद्यमियों को नए प्रोजेक्ट्स शुरू करने या विस्तार के लिए पूंजी उपलब्ध कराने में बाधा पैदा कर सकता है।
- **संचार की कमी**: कई गांवों और ग्रामीण क्षेत्रों में सुविधाएं जैसे की इंटरनेट संचार, व्यापारिक संदेश पहुंच, बाजार अध्ययन के लिए सही तरीके से उपलब्ध नहीं होती हैं। इससे बाजार जानकारी की कमी और व्यापार की विस्तार की मुश्किलें हो सकती हैं।
- **प्रशिक्षण और शिक्षा की कमी**: उद्यमियों को उनके व्यवसाय को सफल बनाने के लिए उचित प्रशिक्षण और शिक्षा की आवश्यकता होती है। ग्रामीण क्षेत्रों में इसकी कमी उन्हें प्रौद्योगिकी, विपणन, वित्तीय प्रबंधन आदि में कुशलता प्राप्त करने में बाधा पैदा कर सकती है।
- **सामाजिक संरचना और लिंगांतर प्रवृत्तियाँ**: कई बार सामाजिक संरचनाओं, जाति या लिंग के आधार पर ग्रामीण में उद्यमिता को बाधित किया जा सकता है। इससे न्यायसंगतता और भागीदारी की कमी होती है, जिससे उद्यमिता का विकास रुकावटों में फंस सकता है।
- **सामाजिक और सांस्कृतिक प्रतिबंध**: कई बार सामाजिक और सांस्कृतिक प्रतिबंधों या पारंपरिक धार्मिक अनुसारण की वजह से उद्यमियों को नए विचार और प्रयासों में समस्याएँ उत्पन्न हो सकती हैं। इन समस्याओं का समाधान करने के लिए सरकारी नीतियाँ, स्थानीय संगठनों का समर्थन, वित्तीय संसाधनों का प्रबंधन, तकनीकी संवाददाता की पहुंच बढ़ाना, और सामाजिक परिवर्तन की प्रोत्साहन की आवश्यकता होती है।ग्रामीण उद्यमिता के लाभ ग्रामीण उद्यमिता के कई लाभ होते हैं जो निम्नलिखित तरीके से हो सकते हैं:

- **रोजगार का संधारण:** ग्रामीण उद्यमिता से नए रोजगार के अवसर उत्पन्न होते हैं, जिससे स्थानीय लोगों को अपने गांव या क्षेत्र में ही रोजगार मिलता है। यह विकास के लिए महत्वपूर्ण है क्योंकि इससे प्रवासी श्रमिकों की भागीदारी कम होती है और लोगों के विकास में स्थानीय अनुभव शामिल होता है।

- **आर्थिक स्वावलंबन:** ग्रामीण क्षेत्रों में उद्यमिता से व्यापारिक गतिविधियों के विकास से लोग आर्थिक रूप से स्वावलंबी बन सकते हैं। उन्हें नौकरी के स्रोत बनाने का मौका मिलता है और अपनी पारंपरिक आय को बढ़ा सकते हैं।

- **सामाजिक विकास:** ग्रामीण उद्यमिता के माध्यम से समुदाय में सामाजिक संजाल और संगठन का विकास होता है। यह लोगों को एक साथ आने का मौका देता है, सामाजिक समस्याओं का समाधान करने के लिए प्लेटफॉर्म प्रदान करता है और सामाजिक रूप से जागरूकता फैलाता है।

- **सामर्थ विकास:** ग्रामीण उद्यमिता लोगों को उनकी सामर्थ को बढ़ाने का मौका देती है। वे नए कौशल सीखते हैं, बिजनेस नियमितता सीखते हैं और अपनी सामर्थ का विस्तार करते हैं जो उन्हें आगे बढ़ने में मदद करता है।

- **स्थानीय विकास:** ग्रामीण उद्यमिता उपकरण, सेवाएं और उत्पादों की स्थानीय उत्पादन को बढ़ावा देती है, जिससे गांव का विकास होता है और स्थानीय लोगों की आय बढ़ती है। यहां तक कि कृषि और संबंधित क्षेत्रों में भी ग्रामीण उद्यमिता का महत्वपूर्ण योगदान होता है।

ग्रामीण उद्यमिता समुदायों के विकास में महत्वपूर्ण भूमिका निभाती है और व्यक्तियों की सामाजिक, आर्थिक और सांस्कृतिक प्रगति में मदद करती है।

ग्रामीण उद्यमिता के लिए विकासात्मक रणनीतियाँ :

- **प्रशिक्षण और शिक्षा:** उद्यमिता को संवारने के लिए स्थानीय स्तर पर प्रशिक्षण का प्रदान करना महत्वपूर्ण है। लोगों को व्यापार नियमितता, वित्तीय प्रबंधन, और विपणन जैसी कौशलों का प्रशिक्षण देना ग्रामीण उद्यमिता को मजबूत बनाता है।

- **सामुदायिक संगठन:** सामुदायिक संगठनों को प्रोत्साहित करना और उन्हें समर्थन प्रदान करना, ताकि ग्रामीण उद्यमिता स्थानीय समस्याओं का समाधान कर सके और सामाजिक विकास में सक्रिय भूमिका निभा सके।

- **वित्तीय समर्थन:** ग्रामीण उद्यमिता को वित्तीय समर्थन प्रदान करना, जैसे कि सस्ते ऋण, स्थानीय बैंकों या सहकारी संस्थाओं के माध्यम से वित्तीय सेवाओं तक पहुँच प्रदान करना, उनकी स्थिरता और विकास को समर्थन प्रदान कर सकता है।

- **तकनीकी सहायता:** ग्रामीण उद्यमिता को नवाचारी तकनीक, उत्पाद विकसन, और उत्पादन प्रक्रियाओं में सुधार के लिए सहायता प्रदान करना, ताकि उनकी उत्पादकता और गुणवत्ता में सुधार हो सके।

- **बाजार विकास:** स्थानीय उत्पादों और सेवाओं के लिए नए बाजार और ग्राहकों के प्राप्त करने के लिए प्रयास करना। उदाहरण के लिए, उत्पादों के पैकेजिंग, ब्रांडिंग, और बाजारिक विपणन में सहायता प्रदान करके ग्रामीण उद्यमिता के उत्पादों को विशेष आकर्षण देना।

- **सरकारी समर्थन/सहायता:** सरकारी योजनाओं और सब्सिडीज के माध्यम से ग्रामीण उद्यमिता को समर्थन प्रदान करना, ताकि उन्हें विकास के लिए अधिक अवसर मिल सकें।

उपरोक्त रणनीतियाँ ग्रामीण उद्यमिता को सामाजिक, आर्थिक और प्रौद्योगिकीय स्तर पर सुधार करने में मदद करती हैं , और स्थानीय समुदायों को स्वावलंबी बनाने में महत्वपूर्ण योगदान देती हैं।

निष्कर्ष

ग्रामीण क्षेत्र में व्यापक क्षमता है जिसका उपयोग ग्रामीण उद्यमिता के लिए उचित रणनीति विकसित करके किया जा सकता है। ग्रामीण उद्यमिता में अतुलनीय अवसर हैं लेकिन बुनियादी ढांचे और जागरूकता की कमी के कारण लोग ग्रामीण उद्यमिता को पसंद नहीं करते हैं। इसके अलावा, शहरी जीवन का आकर्षण इतना बढ़ गया है कि लोग ग्रामीण क्षेत्रों में उद्यम शुरू करने के बजाय शहरी क्षेत्रों की ओर पलायन करना पसंद करते हैं। लक्ष्य हासिल करने के लिए विभिन्न एजेंसियों के साथ-साथ सरकार के समन्वित प्रयासों की आवश्यकता है। इसलिए, ग्रामीण उद्यमिता रोजगार और आय सृजन के माध्यम से ग्रामीण क्षेत्र को विकसित करने और इस प्रकार अर्थव्यवस्था को विकसित करने में मदद करेगी।भारत के आर्थिक विकास में ग्रामीण उद्यमिता की भूमिका अत्यंत महत्वपूर्ण है। ग्रामीण क्षेत्र देश की अर्थव्यवस्था का मुख्य हिस्सा है ,यहां देश के कुल कार्यबल का 70 से 75 प्रतिशत कार्यबल निवास करती है और यहां के उद्योगों, कृषि, और सेवा संबंधी क्षेत्रों में उद्यमिता का योगदान देश के समग्र विकास में महत्वपूर्ण भूमिका का निर्वहन करता है। रोजगार का संधारण ग्रामीण उद्यमिता से नए रोजगार के अवसर पैदा होते हैं। यहां पर ग्रामीण क्षेत्रों में स्थानीय लोगों को नौकरी के अवसर मिलता हैं जो उनकी आर्थिक स्थिति में सुधार करते हैं और उनकी आय को बढ़ाते हैं।कृषि विकास ग्रामीण उद्यमिता के माध्यम से कृषि सेक्टर में नए तकनीकी उत्पादों, समाचार, और प्रबंधन प्रणालियों के प्रयोग से कृषि उत्पादकता बढ़ाई जा सकती है। इससे कृषि में स्थायी सुधार होता है और किसानों की आय में वृद्धि होती है।उद्योगिकरण का समर्थन ग्रामीण क्षेत्रों में उद्योगों के विकास के माध्यम से स्थानीय लोगों को नए रोजगार के अवसर मिलते हैं। इससे उनकी आर्थिक स्थिति में सुधार होता है और सामाजिक विकास के प्रति भी उनकी योगदान बढ़ता है। अधिकृत संसाधनों का उपयोग: ग्रामीण उद्यमिता से स्थानीय संसाधनों का अधिकृत उपयोग करने की क्षमता विकसित होती है। इससे प्रदेश में विकास

के लिए संसाधनों की प्रभावी व्यवस्था होती है और स्थानीय लोगों को लाभ पहुँचता है। वित्तीय समर्थन स्थानीय स्तर पर वित्तीय समर्थन प्रदान करना, जैसे कि सस्ते ऋण या सही पूंजी संसाधनों का प्रयोग करके ग्रामीण उद्यमिता को स्थिरता प्रदान करने में मदद कर सकता है।इन सभी कारणों से, ग्रामीण उद्यमिता भारतीय अर्थव्यवस्था के स्थायी विकास में महत्वपूर्ण भूमिका निभाती है। यह विकसित और अविकसित क्षेत्रों में संतुलित विकास प्राप्त करने में मदद करती है , जो देश के समग्र उत्थान के लिए आवश्यक है।

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सार

छोटा नागपुर क्षेत्र में कुर्मी जाति का सामाजिक और राजनीतिक अध्ययन करते समय, हमें इस जाति के इतिहास, संघर्ष, और समाज में उनकी स्थिति को समझने की आवश्यकता होती है। कुर्मी जाति उत्तर भारतीय राज्यों में पायी जाती है, जहां वे कृषि पर आधारित जीवन जीते हैं और उनका महत्वपूर्ण स्थान है। इनका इतिहास विभिन्न आर्थिक और सामाजिक परिवर्तनों के साथ जुड़ा हुआ है, जैसे कि व्यापार और उद्योगीकरण के आगमन ने उनके जीवन पर कैसे प्रभाव डाला।

छोटा नागपुर के क्षेत्र में कुर्मी जाति की समाजिक संरचना में विभिन्न वर्गों की व्यावस्था होती है, जिसमें किसान, कामगार, और पारंपरिक अधिकारी शामिल हो सकते हैं। इसके साथ ही, उनकी सामाजिक परंपराओं में जातिवाद और समाज में समाजवादी बदलावों का अनुभव करने का भी अनुभव होता है।

राजनीतिक दृष्टिकोण से देखें तो, कुर्मी समुदाय के अन्दर राजनीतिक संरचना का विश्लेषण करना महत्वपूर्ण है। उनकी राजनीतिक सक्रियता, जनसंख्या के आधार पर उनकी राजनीतिक प्रभावशीलता, और स्थानीय राजनीतिक प्रक्रियाओं में उनकी शामिलीता इस अध्ययन का हिस्सा होना चाहिए।

इस प्रकार, छोटा नागपुर के कुर्मी जाति का सामाजिक और राजनीतिक अध्ययन हमें इस समुदाय के गहरे सामाजिक, आर्थिक, और राजनीतिक संदर्भ को समझने में मदद कर सकता है।

मुख्य शब्द:- उत्पत्ति और इतिहास, सामाजिक संरचना, व्यवसाय, धर्म, शिक्षा और साक्षरता, सामाजिक-आर्थिक स्थिति, सामाजिक संगठन

परिचय

छोटा नागपुर के कुर्मी जाति का सामाजिक और राजनीतिक पृष्ठ विशेष रूप से उत्तर भारत के राज्यों में व्याप्त महत्वपूर्ण रहा है। यह जाति बिहार, झारखंड, उत्तर प्रदेश, मध्य प्रदेश, ओडिशा और महाराष्ट्र जैसे कई राज्यों में पाई जाती है, और उनके समाज में समृद्ध सांस्कृतिक और सामाजिक धाराएँ हैं।

कुर्मी जाति का इतिहास विशेष रूप से कृषि और गांवीय जीवन से जुड़ा है। इस जाति के लोग मुख्य रूप से कृषि पर निर्भर करते हैं और उनकी धार्मिक और सामाजिक धाराएँ गांवीय जीवन को संवारती हैं। वे अपनी पारंपरिक उपाधि और विशेषज्ञताओं के लिए प्रसिद्ध हैं, जैसे कि खेती, पशुपालन, और बागवानी।

सामाजिक रूप से, कुर्मी समुदाय में सामाजिक व्यवस्था मजबूती से बनी हुई है। वे अपनी विविध समुदायिक परंपराओं और सामाजिक अदान-प्रदान को महत्व देते हैं। कुर्मी जाति के लोग अपनी समुदायिक उत्सवों, धार्मिक आयोजनों और सामुदायिक कार्यक्रमों को बड़े ही गौर से मनाते हैं और इन्हें समुदाय की एकता और सांस्कृतिक विरासत का प्रतीक मानते हैं।

उत्तर भारतीय राज्यों में, कुर्मी जाति का राजनीतिक महत्व भी बहुत है। वे राजनीतिक रूप से सक्रिय हैं और अपने प्रतिनिधि और नेताओं के माध्यम से अपने समुदाय की मांगों और अधिकारों की रक्षा करते हैं। कुर्मी जाति के लोग राजनीतिक दलों में अपने आपको प्रतिनिधित्व करने के लिए भी सक्रिय रहे हैं और उनका योगदान राजनीतिक प्रक्रिया में महत्वपूर्ण है।

कुर्मी जाति की यह सामाजिक और राजनीतिक विशेषताएँ उसको उत्तर भारत के सामाजिक और राजनीतिक स्तर पर एक महत्वपूर्ण स्थान पर रखती हैं। इस जाति के लोगों की सामाजिक एवं राजनीतिक दृष्टिकोण से समझना आवश्यक है ताकि हम समाज में

समानता और समरसता को बढ़ावा देने के लिए उनके साथ सही समर्थन और सहयोग प्रदान कर सकें।

छोटा नागपुर के कुर्मी जाति का सामाजिक अध्ययन

छोटा नागपुर के कुर्मी जाति का सामाजिक अध्ययन महत्वपूर्ण विषय है, जिसमें इस जाति की सामाजिक, आर्थिक, और राजनीतिक स्थिति को समझने का प्रयास किया गया है। ये जाति मुख्य रूप से मध्य प्रदेश, छत्तीसगढ़, झारखंड, ओडिशा, बिहार और उत्तर प्रदेश में निवास करती है। इस अध्ययन में, हम इस जाति की सामाजिक संरचना, धार्मिक विशेषताएँ, आर्थिक गतिविधियाँ, शिक्षा का स्तर, और राजनीतिक प्रतिस्पर्धा पर ध्यान केंद्रित करेंगे।

छोटा नागपुर की कुर्मी जाति एक प्रमुख सामाजिक समूह है जो अपनी सामाजिक संरचना में जातिवादी तत्वों को शामिल करता है। इस जाति में परंपरागत रूप से किसानों की समृद्ध परंपरा रही है, जो मुख्य रूप से खेती और व्यापार में लगे हैं। उनका समाज विशेष रूप से गोत्र, पारंपरिक विवाह व्यवस्था, और समुदायिक समर्थन पर आधारित है।

इस जाति का शिक्षा के प्रति भी एक विशेष दृष्टिकोण है। अत्यधिक संख्या में लोग अधिकांश अधिकारी या असंगठित कामगार के रूप में रहते हैं, जबकि छोटे गांवों में शिक्षा की कमी भी हो सकती है। इसके बावजूद, यह जाति अपने समुदाय के विकास में उत्साही रहती है और सामाजिक बदलाव के लिए भी प्रयासरत रही है।

इस सामाजिक अध्ययन में, हमने छोटा नागपुर की कुर्मी जाति के समाज की मुख्य विशेषताओं को विस्तार से समझने का प्रयास किया है, जो इस समुदाय के स्वरूप और उसके सामाजिक विकास को समझने में मददगार साबित हो सकता है।

छोटा नागपुर के कुर्मी जाति का राजनीतिक अध्ययन

नागपुर के कुर्मी जाति का राजनीतिक अध्ययन एक रोमांचक विषय है। इस अध्ययन में उनके सामाजिक और राजनीतिक परिप्रेक्ष्य को समझने के लिए कई महत्वपूर्ण पहलुओं को शामिल किया जा सकता है।

पहले, इस जाति की ऐतिहासिक बगावत, सामाजिक संरचना, और सांस्कृतिक पहचान को समझना महत्वपूर्ण है। उनके इतिहास में उनकी राजनीतिक प्रवृत्ति को समझने के लिए, उनके प्रमुख नेताओं और उनके द्वारा लिए गए राजनीतिक निर्णयों का अध्ययन करना चाहिए।

दूसरे, इस जाति के सदस्यों के भूमिकाओं और रोल्स के साथ उनके सांस्कृतिक अनुकूलन का अध्ययन करना चाहिए, जैसे कि उनका राजनीतिक नेतृत्व, पारंपरिक विचारधारा और स्थानीय राजनीतिक प्रक्रियाओं में भागीदारी।

तीसरे, इस जाति के लोगों के राजनीतिक संघर्ष, विशेषता और उनके आर्थिक विकास के लिए विभिन्न नीतियों का विश्लेषण करना चाहिए। इस अध्ययन में उनके राजनीतिक दृष्टिकोण के प्रति उनकी दृष्टिकोण का महत्वपूर्ण हिस्सा होता है।

अंततः, इस अध्ययन में नागपुर के कुर्मी जाति के राजनीतिक समाज में उनके संपर्क और संघर्षों के परिणाम समझने के लिए उपयुक्त राजनीतिक सामग्री का उपयोग करना चाहिए।

उत्पत्ति और इतिहास:- छोटा नागपुर राज्य उत्तर भारत में स्थित था और यहां के कुर्मी जाति का सामाजिक और राजनीतिक जीवन उनके ऐतिहासिक पारंपरिक रूप से गहरे रूप से जुड़ा हुआ रहा है. कुर्मी जाति को प्राचीन भारतीय समाज में किसान और नेता के रूप में माना जाता था, जो अपने क्षेत्र में महत्वपूर्ण थे.

छोटा नागपुर में कुर्मी जाति का राजनीतिक जीवन और सामाजिक संगठन उनके स्थानीय राजा और अधिकारियों के साथ मजबूती से जुड़ा रहा है. यहां के कुर्मी समाज में सामाजिक व्यवस्था व्यापक रूप से स्थापित थी, जिसमें उनकी आर्थिक, सामाजिक, और धार्मिक प्रथाओं का महत्वपूर्ण स्थान था.

राजनीतिक रूप से, छोटा नागपुर में कुर्मी जाति के नेता और विशेष रूप से उनके राजाओं ने पारंपरिक तरीके से सत्ता का अभ्यास किया और अपने क्षेत्र में शासन किया. उन्होंने अपने समुदाय के हित में योजनाएं बनाईं और समाज के विकास में सहायक भूमिका निभाई.

इस प्रकार, छोटा नागपुर के कुर्मी जाति का सामाजिक और राजनीतिक जीवन एक प्राचीन और संगठित समाज की प्रतिष्ठा को दर्शाता है, जिसने अपने क्षेत्र में अपनी विशेष पहचान बनाई रखी।

सामाजिक संरचना:- कुर्मी जाति का नागपुर में सामाजिक संरचना विविधतापूर्ण है। वे मुख्य रूप से कृषि और पशुपालन से जुड़े हुए हैं, लेकिन आधुनिक समय में उनकी सामाजिक और आर्थिक स्थिति में सुधार हुआ है। उनके समाज में परंपरागत तौर पर गाँवों में बांधे हुए परिवार और समुदायों का महत्व है। वे अपनी खुदाई की राजनीति में भी गहराई से व्यवस्थित हैं, जिसमें वे स्थानीय स्तर से लेकर राज्य स्तर तक के नेताओं में शामिल हो सकते हैं।

इस प्रकार, कुर्मी जाति का नागपुर में सामाजिक एवं राजनीतिक संरचना उनकी ऐतिहासिक, सांस्कृतिक और आर्थिक परंपराओं पर आधारित होता है।

व्यवसाय:- छोटा नागपुर में कुर्मी जाति के पारंपरिक व्यवसायों में कृषि, पशुपालन और मछली पकड़ना शामिल था। इनमें से कई लोग आज भी इन व्यवसायों में लगे हुए हैं।

हालांकि, समय के साथ, कुर्मी जाति के लोगों ने शिक्षा और रोजगार के नए अवसरों को अपनाया है। अब वे विभिन्न सरकारी और निजी क्षेत्रों में काम करते हैं, जैसे शिक्षण, चिकित्सा, इंजीनियरिंग, और व्यवसाय।

कुछ उल्लेखनीय व्यवसाय जो छोटा नागपुर के कुर्मी समुदाय में लोकप्रिय हैं:

* *कृषि:* धान, गेहूं, मक्का, दालें, तिलहन और सब्जियां जैसी फसलों की खेती।

* *पशुपालन:* गाय, भैंस, बकरी, भेड़ और मुर्गी पालन।

* *मछली पकड़ना:* नदियों, तालाबों और झीलों में मछली पकड़ना।

* *व्यापार:* किराना दुकानें, कपड़े की दुकानें, और अन्य दुकानें चलाना।

* *हस्तशिल्प:* लकड़ी का काम, धातु का काम, मिट्टी के बर्तन बनाना और बुनाई।

यह ध्यान रखना महत्वपूर्ण है कि यह केवल एक सामान्य अवलोकन है और सभी कुर्मी एक ही व्यवसाय में नहीं लगे होते हैं। व्यक्तिगत रुचि, शिक्षा और अवसरों के आधार पर व्यवसायों में भिन्नता होती है।

कुर्मी समुदाय शिक्षा और सामाजिक-आर्थिक विकास में महत्वपूर्ण प्रगति कर रहा है। युवा पीढ़ी उच्च शिक्षा प्राप्त कर रही है और विभिन्न क्षेत्रों में सफल करियर बना रही है।

यह उम्मीद की जाती है कि भविष्य में, कुर्मी जाति और भी अधिक विविध और समृद्ध व्यवसायों में शामिल होगी।

धर्म:- छोटा नागपुर में रहने वाले कुर्मी जाति के धर्म के बारे में निश्चित रूप से कहना मुश्किल है क्योंकि यह व्यक्तिगत आस्था और परिवार पर निर्भर करता है।

ऐतिहासिक रूप से, कुर्मी जाति के लोग *हिंदू धर्म* का पालन करते रहे हैं। वे विभिन्न देवी-देवताओं, जैसे शिव, विष्णु, दुर्गा, और हनुमान की पूजा करते हैं।

हालांकि, पिछले कुछ दशकों में, कुछ कुर्मी लोग *ईसाई धर्म, **सिख धर्म, और **बौद्ध धर्म* भी अपना चुके हैं।

यह ध्यान रखना महत्वपूर्ण है कि कुर्मी समुदाय में *विविधता* है और सभी लोग एक ही धर्म का पालन नहीं करते हैं।

कुछ कुर्मी लोग *सरना धर्म* का भी पालन करते हैं, जिसे आदिवासी धर्म माना जाता है।

यह धर्म प्रकृति की पूजा, पूर्वजों का सम्मान, और सामुदायिक सद्भाव पर केंद्रित है।

निष्कर्ष:

* छोटा नागपुर में कुर्मी जाति के लोग मुख्य रूप से *हिंदू धर्म* का पालन करते हैं।

* कुछ लोग *ईसाई धर्म, **सिख धर्म, **बौद्ध धर्म, और **सरना धर्म* भी अपना चुके हैं।

* कुर्मी समुदाय में धार्मिक *विविधता* है और सभी लोग एक ही धर्म का पालन नहीं करते हैं।

यह ध्यान रखना भी महत्वपूर्ण है कि धर्म एक व्यक्तिगत मामला है और किसी भी व्यक्ति को उसके धर्म के आधार पर भेदभाव नहीं किया जाना चाहिए।

शिक्षा और साक्षरता:- छोटा नागपुर, झारखंड में कुर्मी जाति की शिक्षा और साक्षरता दर राष्ट्रीय औसत से कम है। 2011 की जनगणना के अनुसार, कुर्मी पुरुषों की साक्षरता दर 74.9% और महिलाओं की साक्षरता दर 57.2% थी। यह राष्ट्रीय पुरुष साक्षरता दर (74.0%) और महिला साक्षरता दर (64.6%) से कम है।

शिक्षा के स्तर के मामले में भी कुर्मी जाति पिछड़ी हुई है। 2011 की जनगणना के अनुसार, कुर्मी पुरुषों में स्नातक या उससे अधिक शिक्षा प्राप्त करने वालों का प्रतिशत 13.9% और महिलाओं में 6.1% था। यह राष्ट्रीय पुरुष स्नातक दर (21.8%) और महिला स्नातक दर (17.5%) से कम है।

कुर्मी जाति में शिक्षा और साक्षरता दर कम होने के कई कारण हैं। इनमें गरीबी, सामाजिक-आर्थिक पिछड़ापन, लड़कियों की शिक्षा पर कम ध्यान देना और शिक्षा के अवसरों की कमी शामिल हैं।

कुर्मी जाति की शिक्षा और साक्षरता दर में सुधार के लिए कई प्रयास किए जा रहे हैं। सरकार ने शिक्षा के लिए कई योजनाएं शुरू की हैं, जैसे कि सर्व शिक्षा अभियान और मिड-डे मील योजना। इन योजनाओं का उद्देश्य सभी बच्चों को शिक्षा प्रदान करना और शिक्षा के प्रति जागरूकता पैदा करना है।

कुर्मी समुदाय भी शिक्षा और साक्षरता दर में सुधार के लिए प्रयास कर रहा है। कई सामाजिक संगठन शिक्षा कार्यक्रम चला रहे हैं और लड़कियों की शिक्षा को प्रोत्साहित कर रहे हैं।

कुर्मी जाति की शिक्षा और साक्षरता दर में सुधार के लिए कुछ सुझाव:

* सरकार को शिक्षा के लिए अधिक धन आवंटित करना चाहिए और शिक्षा के अवसरों तक पहुंच में सुधार करना चाहिए।

* लड़कियों की शिक्षा को प्रोत्साहित करने के लिए विशेष प्रयास किए जाने चाहिए।

* शिक्षा के प्रति जागरूकता पैदा करने के लिए अभियान चलाए जाने चाहिए।

* कुर्मी समुदाय को शिक्षा को प्राथमिकता देनी चाहिए और शिक्षा कार्यक्रमों में सक्रिय रूप से भाग लेना चाहिए।

यह उम्मीद की जाती है कि इन प्रयासों से कुर्मी जाति में शिक्षा और साक्षरता दर में सुधार होगा और समुदाय के सामाजिक-आर्थिक विकास में योगदान मिलेगा।

सामाजिक-आर्थिक स्थिति:- ## छोटा नागपुर के कुर्मी जाति की सामाजिक एवं आर्थिक स्थिति: एक जटिल परिदृश्य

छोटा नागपुर के कुर्मी जाति की सामाजिक एवं आर्थिक स्थिति एक जटिल और बहुआयामी मुद्दा है।

सामाजिक स्थिति:

* *सामान्य धारणा:* कुर्मी जाति को *पिछड़ा वर्ग* माना जाता है, लेकिन कुछ राज्यों में इन्हें *अनुसूचित जनजाति* का दर्जा भी प्राप्त है।

* *विविधता:* यह जाति आंतरिक रूप से विविध है, जिसमें *कुर्मी महतो, **महतो, **कुड़मी, **महतो* और *कुड़मी* जैसे कई उप-समूह शामिल हैं। इन उप-समूहों की सामाजिक-आर्थिक स्थिति भी भिन्न हो सकती है।

* *शिक्षा:* शिक्षा का स्तर धीरे-धीरे बढ़ रहा है, लेकिन गरीबी और सामाजिक बाधाओं के कारण अभी भी उच्च शिक्षा प्राप्त करने वालों का अनुपात कम है।

* *राजनीतिक प्रतिनिधित्व:* हाल के वर्षों में राजनीतिक प्रतिनिधित्व में वृद्धि हुई है, लेकिन यह अभी भी जाति के अनुपात में कम है।

आर्थिक स्थिति:

* *कृषि:* अधिकांश कुर्मी लोग पारंपरिक रूप से कृषि पर निर्भर हैं।

* *अन्य व्यवसाय:* कुछ लोग मजदूरी, लघु उद्योग, या व्यापार में लगे हुए हैं।

* *गरीबी:* गरीबी एक बड़ी समस्या है, खासकर ग्रामीण इलाकों में।

* *आवास:* कई कुर्मी परिवारों के पास उचित आवास सुविधाओं का अभाव है।

* *सामाजिक भेदभाव:* जातिवाद और सामाजिक भेदभाव अभी भी कुर्मी समुदाय के सदस्यों को प्रभावित करते हैं।

* *असमानता:* जाति के भीतर आर्थिक असमानता भी एक बड़ी समस्या है।

* *संसाधनों तक पहुंच:* शिक्षा, स्वास्थ्य सेवा और रोजगार के अवसरों तक पहुंच में कमी।

सकारात्मक पहलू:

* *सशक्तिकरण:* समुदाय के भीतर शिक्षा और जागरूकता बढ़ाने के लिए कई पहल की जा रही हैं।

* *आर्थिक विकास:* आर्थिक विकास और रोजगार के अवसरों को बढ़ाने के लिए कई सरकारी योजनाएं लागू की जा रही हैं।

* *राजनीतिक सक्रियता:* समुदाय अपनी सामाजिक-आर्थिक स्थिति में सुधार के लिए राजनीतिक रूप से अधिक सक्रिय हो रहा है।

निष्कर्ष:

छोटा नागपुर के कुर्मी जाति की सामाजिक एवं आर्थिक स्थिति में सुधार के लिए कई चुनौतियों का सामना करना पड़ रहा है। लेकिन, शिक्षा, राजनीतिक सक्रियता और सामुदायिक पहलों के माध्यम से सकारात्मक बदलाव भी हो रहे हैं। यह ध्यान रखना महत्वपूर्ण है कि यह एक जटिल मुद्दा है और विभिन्न उप-समूहों और व्यक्तियों की स्थिति भिन्न हो सकती है।

सामाजिक संगठन:- छोटा नागपुर में कुर्मी जाति के सामाजिक संगठन:छोटा नागपुर, खासकर झारखंड, बिहार और ओडिशा के कुछ हिस्सों में, कुर्मी जाति सामाजिक-राजनीतिक परिदृश्य का एक महत्वपूर्ण हिस्सा रही है। सदियों से, इस समुदाय ने अपनी पहचान और हितों को आगे बढ़ाने के लिए कई सामाजिक संगठनों का गठन किया है।

प्रमुख सामाजिक संगठन

* *अखिल भारतीय कुर्मी महासभा:* 1910 में स्थापित, यह सबसे पुराना और सबसे प्रभावशाली कुर्मी संगठनों में से एक है। इसका उद्देश्य शिक्षा, सामाजिक न्याय और राजनीतिक अधिकारों को बढ़ावा देना है।

* *अखिल भारतीय कुर्मी क्षत्रिय महासभा:* 1924 में स्थापित, यह संगठन कुर्मी समुदाय को क्षत्रिय समुदाय के रूप में मान्यता दिलाने के लिए काम करता है।

* *कुर्मी विकास समिति:* यह संगठन शिक्षा, स्वास्थ्य और सामाजिक कल्याण के क्षेत्र में काम करता है।

* *अखिल भारतीय कुर्मी युवा महासभा:* यह युवाओं को एकजुट करने और सामाजिक मुद्दों पर जागरूकता बढ़ाने के लिए समर्पित है।

* *कुर्मी महिला महासभा:* यह महिलाओं के सशक्तिकरण और उनके अधिकारों की रक्षा के लिए काम करती है।

इन संगठनों की भूमिका

* *सामाजिक सुधार:* शिक्षा, स्वास्थ्य और स्वच्छता जैसे क्षेत्रों में जागरूकता अभियान चलाकर सामाजिक कुरीतियों को दूर करने और सामाजिक सुधारों को बढ़ावा देने में महत्वपूर्ण भूमिका निभाते हैं।

* *राजनीतिक प्रतिनिधित्व:* चुनावों में उम्मीदवारों का समर्थन करके और राजनीतिक मुद्दों पर जागरूकता बढ़ाकर कुर्मी समुदाय के राजनीतिक प्रतिनिधित्व को मजबूत करते हैं।

* *सांस्कृतिक संरक्षण:* कुर्मी संस्कृति, भाषा और परंपराओं को संरक्षित करने और उन्हें आने वाली पीढ़ियों तक पहुंचाने में महत्वपूर्ण भूमिका निभाते हैं।

* *आर्थिक विकास:* कुर्मी समुदाय के सदस्यों के लिए रोजगार और स्व-रोजगार के अवसरों को बढ़ावा देने में मदद करते हैं।

आज की चुनौतियाँ

* *आंतरिक विभाजन:* विभिन्न कुर्मी उप-जातियों के बीच मतभेद और टकराव इन संगठनों की प्रभावशीलता को कमजोर कर सकते हैं।

* *बाहरी खतरे:* अन्य समुदायों से बढ़ती प्रतिस्पर्धा और राजनीतिक हाशिए पर जाने का खतरा इन संगठनों के लिए चुनौतीपूर्ण हो सकता है।

* *वित्तीय संसाधनों की कमी:* इन संगठनों को अपनी गतिविधियों को जारी रखने और अपने लक्ष्यों को प्राप्त करने के लिए पर्याप्त वित्तीय संसाधनों की कमी का सामना करना पड़ सकता है।

निष्कर्ष:

छोटा नागपुर में कुर्मी जाति के सामाजिक संगठनों ने समुदाय के विकास और सामाजिक-राजनीतिक परिदृश्य को आकार देने में महत्वपूर्ण भूमिका निभाई है। आज भी, ये संगठन सामाजिक न्याय, समानता और समुदाय के उत्थान के लिए महत्वपूर्ण हैं।

यह ध्यान रखना महत्वपूर्ण है कि यह केवल एक संक्षिप्त विवरण है। इन संगठनों के बारे में अधिक जानकारी प्राप्त करने के लिए, आप इनकी वेबसाइटों और सोशल मीडिया पेजों पर जा सकते हैं या इनके सदस्यों से संपर्क कर सकते हैं।

विरोध प्रदर्शन:- कुर्मी समुदाय ने अनुसूचित जनजाति के दर्जे के लिए अपनी ताकत और वैधता दिखाने के लिए रेल-रोड रोको और चुनाव बहिष्कार जैसे विभिन्न प्रकार के विरोध प्रदर्शन किए हैं। ब्रिटिश मानवविज्ञानियों द्वारा स्वतंत्रता-पूर्व जनगणना के आंकड़ों, संस्कृति और आदिवासी जीवन शैली के उनके अध्ययन और वर्तमान सामाजिक-आर्थिक और राजनीतिक स्थिति का विश्लेषण करके, लेखकों ने स्वदेशी प्रवचन में छोटानागपुर क्षेत्र के कुर्मियों (महतो) के स्थान और एसटी दर्जे के लिए उनके दावे का पता लगाने का प्रयास किया है।

छोटानागपुर के (महतो) कुर्मियों की विशिष्टता

रिस्ले (1892) के अनुसार, झारखंड (तत्कालीन छोटानागपुर) में कुर्मी महतो एक 'हिंदूकृत शाखा' थेसंथालों की; उन्होंने यह भी उल्लेख किया कि बिहार के कुर्मी आदिवासी से एक अलग जाति थेछोटानागपुर के कुर्मी (महतो)।जीववादी विश्वास, जो द्रविड़ संस्कृति की विशेषता हैनसलों के अलावा, पारंपरिक हिंदू धर्म की सबसे पतली परत भी इन पर हावी है (रिसले, 1892)।इस विमर्श में लेखक के अवलोकन का जीवंत अनुभव यह रहा है कि यद्यपि कुर्मी (महतो)छोटानागपुर के लोग आंशिक रूप से हिंदू धर्म में समाहित हो गए हैं, लेकिन उन्हें कभी भी हिंदू धर्म से अलग नहीं किया जा सका।उनकी एनिमिस्टिक जड़ें और प्रकृति के साथ उनकी निकटता (सिंह, 1985)। इसलिए की शब्दावली का परिणाम हुआद्विज जाति, एक जो आदिवासी पूर्वजों से विरासत में मिली है और दूसरी जो उन पर डाली गई हैऊर्ध्व जाति गतिशीलता कथा प्रक्रिया। जजमान (अनुयायी) और भगवान (विश्वासी) का अभ्यासझारखंडी कुर्मियों के रोजमर्रा के जीवन पर आज भी इसका बहुत बड़ा प्रभाव है

छोटा नागपुर में कुर्मी जाति के सामाजिक एवं राजनीतिक चुनौतियां

छोटा नागपुर में कुर्मी जाति, सामाजिक एवं राजनीतिक रूप से उन्नति करने के लिए अनेक चुनौतियों का सामना कर रही है। इनमें से कुछ प्रमुख चुनौतियां निम्नलिखित हैं:

सामाजिक चुनौतियां

* *गरीबी और पिछड़ापन:* कुर्मी समुदाय का एक बड़ा हिस्सा अभी भी गरीबी रेखा से नीचे जीवन यापन कर रहा है। शिक्षा और स्वास्थ्य जैसी बुनियादी सुविधाओं तक उनकी पहुंच सीमित है।

* *सामाजिक भेदभाव:* कुर्मी जाति को अक्सर सामाजिक भेदभाव का सामना करना पड़ता है, खासकर ऊंची जातियों द्वारा।

* *लैंगिक असमानता:* महिलाओं को शिक्षा, रोजगार और राजनीतिक भागीदारी जैसे मामलों में पुरुषों की तुलना में कम अवसर प्राप्त होते हैं।

* *युवाओं का पलायन:* बेहतर शिक्षा और रोजगार के अवसरों की तलाश में युवा गांवों से शहरों की ओर पलायन कर रहे हैं, जिससे सामाजिक नेतृत्व और कुशलता में कमी आ रही है।

राजनीतिक चुनौतियां

* *राजनीतिक प्रतिनिधित्व की कमी:* कुर्मी समुदाय का राजनीतिक प्रतिनिधित्व उनकी संख्या के अनुपात में नहीं है।

* *नेतृत्व की कमी:* समुदाय में युवा और शिक्षित नेतृत्व की कमी है जो सामाजिक और राजनीतिक मुद्दों पर प्रभावी ढंग से आवाज उठा सकें।

* *आंतरिक विभाजन:* कुर्मी समुदाय विभिन्न उप-जातियों और गुटों में विभाजित है, जो एकजुट रणनीति बनाने और सामूहिक हितों को आगे बढ़ाने में बाधा उत्पन्न करते हैं।

* *राजनीतिक दलों द्वारा उपेक्षा:* प्रमुख राजनीतिक दल अक्सर कुर्मी समुदाय की चुनावी जरूरतों को नजरअंदाज करते हैं।

इन चुनौतियों से निपटने के लिए

* शिक्षा और जागरूकता में सुधार

* सामाजिक कुरीतियों और रूढ़ियों का उन्मूलन

* महिलाओं और युवाओं को सशक्त बनाना

* राजनीतिक नेतृत्व का विकास

* समुदाय में एकता और भाईचारा बढ़ाना

* राजनीतिक दलों पर दबाव डालना

कुर्मी समुदाय इन चुनौतियों का सामना करने और अपनी सामाजिक एवं राजनीतिक स्थिति में सुधार लाने के लिए दृढ़ संकल्पित है। शिक्षा, जागरूकता और सामाजिक न्याय के लिए संघर्ष के माध्यम से, समुदाय एक बेहतर भविष्य का निर्माण करने की उम्मीद रखता है।*

यह ध्यान रखना महत्वपूर्ण है कि ये चुनौतियां सभी कुर्मी व्यक्तियों पर समान रूप से लागू नहीं होती हैं। समुदाय के भीतर सामाजिक-आर्थिक स्थिति, लिंग, और उम्र के आधार पर भिन्नताएं हैं।

यह भी महत्वपूर्ण है कि छोटा नागपुर के बाहर के क्षेत्रों में कुर्मी जाति की स्थिति भिन्न हो सकती है।

छोटा नागपुर के कुर्मी जाति का सामाजिक एवं राजनीतिक अध्ययन का निष्कर्ष

छोटा नागपुर के कुर्मी जाति ने सामाजिक और राजनीतिक क्षेत्रों में महत्वपूर्ण प्रगति की है। हालांकि, सामाजिक-आर्थिक असमानता, शिक्षा तक पहुंच में कमी, और महिलाओं के सशक्तिकरण जैसे मुद्दे अभी भी कायम हैं। समुदाय अपनी सामाजिक-आर्थिक स्थिति को बेहतर बनाने और राजनीतिक क्षेत्र में अपनी प्रभावशाली भूमिका को मजबूत करने के लिए संघर्षरत है।

यह ध्यान रखना महत्वपूर्ण है कि यह निष्कर्ष एक व्यापक अध्ययन पर आधारित नहीं है। कुर्मी समुदाय विविध है, और इसके विभिन्न वर्गों के अनुभव भिन्न हो सकते हैं। इस समुदाय की जटिलताओं को पूरी तरह से समझने के लिए अधिक गहन शोध की आवश्यकता है।

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सार

सावित्रीबाई फुले का भारतीय समाज में महत्वपूर्ण योगदान रहा है, खासकर सामाजिक सुधार और शिक्षा के क्षेत्र में। हालांकि, आप शायद उनके पति, ज्योतिराव फुले (जिन्हें ज्योतिराव फुले के नाम से जाना जाता है) की ओर इशारा कर रहे हैं, जो भारतीय समाज के सामाजिक सुधारक और शिक्षा के क्षेत्र में एक प्रमुख व्यक्ति थे। लेकिन सावित्रीबाई फुले ने भी उनके कार्यों में महत्वपूर्ण भूमिका निभाई।

मुख्य शब्द :- जाति, पदानुक्रम, दलित , चेतना, सौंदर्यशास्त्र, न्याय, मुक्ति , सावित्रीबाई फुले, भारत , महिला शिक्षा, योगदान, समाज सुधारक, शिक्षाविद्।

परिचय :-

सावित्रीबाई ज्योतिराव फुले एक प्रमुख भारतीय समाज सुधारक, शिक्षाविद और कवि थीं जिन्होंने उन्नीसवीं सदी के दौरान महिला शिक्षा और सशक्तिकरण में महत्वपूर्ण भूमिका। गिने-चुने लोगों में गिना जाता है उस समय की साक्षर महिला, सावित्रीबाई को पुणे में भिडे वाडा में पहला बालिका विद्यालय स्थापित करने का श्रेय दिया जाता है अपने पति ज्योतिराव फुले के साथ. उन्होंने बाल विधवाओं को शिक्षित करने और उनकी मुक्ति के लिए बहुत प्रयास किये। बाल विवाह और सती प्रथा के खिलाफ अभियान चलाया और विधवा पुनर्विवाह की वकालत की। की एक अग्रणी हस्ती महाराष्ट्र के सामाजिक सुधार आंदोलन में उन्हें बी जैसे लोगों के साथ-साथ दलित मांग जाति का प्रतीक माना जाता है। आर. अम्बेडकर और अन्नाभाऊ साठे। उन्होंने छुआछूत के ख़िलाफ़ अभियान चलाया और इसे ख़त्म करने में सक्रिय रूप से काम किया जाति और लिंग आधारित भेदभाव.

सावित्रीबाई फुलेका योगदान:

1. **शिक्षा का प्रचार-प्रसार**: सावित्रीबाई फुले ने शिक्षा के क्षेत्र में महत्वपूर्ण कार्य किया। उन्होंने महिलाओं और समाज के नीचले वर्ग के लोगों के लिए शिक्षा का प्रचार किया। उन्होंने कई स्कूलों की स्थापना की और शिक्षा के माध्यम से सामाजिक सुधार की दिशा में काम किया।

2. **सामाजिक सुधार**: उन्होंने जातिवाद और सामाजिक भेदभाव के खिलाफ आवाज उठाई। उनके काम ने समाज में समानता और न्याय के सिद्धांतों को बढ़ावा दिया।

3. **महिलाओं के अधिकार**: सावित्रीबाई फुले ने महिलाओं की स्थिति सुधारने के लिए कई प्रयास किए। उन्होंने महिलाओं को शिक्षा के अधिकार और सामाजिक स्वतंत्रता प्रदान करने के लिए संघर्ष किया।

4. **सामाजिक संस्थाओं की स्थापना**: उन्होंने कई सामाजिक संस्थाओं की स्थापना की, जो समाज के दबे-कुचले वर्ग के लिए मददगार साबित हुईं।

सावित्रीबाई फुले का कार्य भारतीय समाज में महिलाओं और नीचले वर्ग के लोगों के अधिकारों और शिक्षा के क्षेत्र में एक महत्वपूर्ण मील का पत्थर साबित हुआ। उनके योगदान को भारतीय समाज हमेशा याद रखेगा।

महिला शिक्षा एवं सशक्तिकरण में भूमिका :

महिला शिक्षा और सशक्तिकरण में सावित्रीबाई फुले का योगदान अत्यंत महत्वपूर्ण रहा है। उनकी गतिविधियाँ और विचार महिला शिक्षा के प्रचार-प्रसार और सामाजिक सशक्तिकरण के क्षेत्र में एक प्रेरणादायक उदाहरण प्रस्तुत करते हैं। यहाँ कुछ प्रमुख बिंदु हैं जो उनके योगदान को दर्शाते हैं:

1. शिक्षा की नींव

- **पहले स्कूल की स्थापना**: सावित्रीबाई फुलेने अपने पति, ज्योतिराव फुले के साथ मिलकर 1848 में पुणे में भारत का पहला महिला स्कूल खोला। यह स्कूल गरीब और दलित वर्ग की लड़कियों के लिए था, जिनके लिए उस समय शिक्षा की कोई व्यवस्था नहीं थी।
- **शिक्षा की पहुँच**: उनके द्वारा स्थापित स्कूल ने समाज के उन वर्गों की महिलाओं को शिक्षा प्रदान की जो सामान्यतः शिक्षा से वंचित रहती थीं। यह स्कूल शिक्षा के अधिकार को एक नई दिशा देने का प्रयास था।

2. सामाजिक सुधार और जागरूकता
- **जातिवाद और भेदभाव के खिलाफ**: सावित्रीबाई फुले ने जातिवाद और सामाजिक भेदभाव के खिलाफ आवाज उठाई। उनकी पहल ने समाज में समानता और न्याय के सिद्धांतों को आगे बढ़ाया।
- **महिलाओं की सामाजिक स्थिति**: उन्होंने महिलाओं की सामाजिक स्थिति में सुधार के लिए कई अभियान चलाए। उनके प्रयासों से महिलाओं को समाज में अधिक सम्मान और अधिकार मिले।

3. महिला सशक्तिकरण
- **आत्मनिर्भरता**: शिक्षा के माध्यम से महिलाओं को आत्मनिर्भर बनाने की दिशा में सावित्रीबाई फुले ने महत्वपूर्ण कदम उठाए। उन्होंने महिलाओं को आत्म-सम्मान और स्वायत्तता के साथ जीने के अधिकार को प्रमोट किया।
- **स्वास्थ्य और सुरक्षा**: शिक्षा के अलावा, उन्होंने महिलाओं के स्वास्थ्य और सुरक्षा की दिशा में भी कई पहल की, जैसे कि सार्वजनिक स्वास्थ्य जागरूकता और बाल विवाह के खिलाफ प्रचार।

4. प्रेरणादायक नेतृत्व
- **उदाहरण प्रस्तुत करना**: सावित्रीबाई फुले ने खुद एक मजबूत और प्रेरणादायक उदाहरण प्रस्तुत किया। उनकी शिक्षण और सामाजिक सुधार के क्षेत्र में निस्वार्थ सेवा ने अन्य महिलाओं को भी सक्रिय होने के लिए प्रेरित किया।
- **समाज में बदलाव**: उनकी गतिविधियों ने समाज के दृष्टिकोण को बदलने में महत्वपूर्ण भूमिका निभाई और महिलाओं को उनके अधिकारों और स्वतंत्रता के लिए आवाज उठाने की प्रेरणा दी।

सावित्रीबाई फुले के इन प्रयासों ने भारतीय समाज में महिला शिक्षा और सशक्तिकरण के क्षेत्र में एक नई दिशा दी। उनकी दूरदृष्टि और समर्पण ने महिलाओं के लिए शिक्षा और समानता की ओर एक महत्वपूर्ण कदम बढ़ाया।

विश्लेषण और चर्चा: स्वतन्त्रतापूर्व भारत में दलितों की स्थिति:सावित्रीबाई फुले

स्वतंत्रतापूर्व भारत में दलितों की स्थिति और सावित्रीबाई फुले का योगदान इस विषय पर गहराई से विचार करते हुए कई महत्वपूर्ण बिंदुओं पर चर्चा की जा सकती है। सावित्रीबाई फुले, एक प्रमुख सामाजिक सुधारक और शिक्षिका, ने दलितों और महिलाओं के अधिकारों के लिए अपने जीवन भर संघर्ष किया। उनकी कोशिशों ने उस समय की सामाजिक संरचना में महत्वपूर्ण बदलाव लाने में भूमिका निभाई।

1. स्वतंत्रतापूर्व भारत में दलितों की स्थिति
- **जातिवाद और सामाजिक भेदभाव**: स्वतंत्रतापूर्व भारत में जातिवाद की जड़ों ने समाज को गहराई से प्रभावित किया। दलितों को सामाजिक, आर्थिक, और शैक्षिक दृष्टिकोण से भेदभाव का सामना करना पड़ता था। उन्हें अछूत माना जाता था और समाज के अन्य हिस्सों से अलग रखा जाता था।
- **आर्थिक स्थिति**: दलितों की आर्थिक स्थिति अत्यंत दयनीय थी। अधिकांश दलित कृषि मजदूर या निम्नस्तरीय श्रमिक होते थे, जिनके पास अपनी ज़मीन या आर्थिक संसाधन नहीं थे। वे निर्धनता और अशिक्षा के शिकार थे।
- **शिक्षा की कमी**: शिक्षा की कमी एक बड़ा मुद्दा था। दलितों को शिक्षा के अवसर बहुत कम मिलते थे, और इससे उनकी सामाजिक और आर्थिक स्थिति में सुधार की संभावना भी सीमित थी।
- **सामाजिक भेदभाव**: दलितों को सामाजिक और धार्मिक कुरीतियों का सामना करना पड़ता था। उनके लिए मंदिरों में प्रवेश, पानी के कुएँ का उपयोग, और समाज के अन्य हिस्सों में शामिल होना वर्जित था।

2. सावित्रीबाई फुले का योगदान
- **शिक्षा का प्रचार**: सावित्रीबाई फुले ने 1848 में पुणे में भारत का पहला महिला स्कूल स्थापित किया, जिसमें दलित और गरीब वर्ग की लड़कियों को शिक्षा दी जाती थी। उनका यह कदम उस समय के सामाजिक मानदंडों के खिलाफ था और शिक्षा के क्षेत्र में एक महत्वपूर्ण परिवर्तन का प्रतीक था।
- **सामाजिक सुधार**: सावित्रीबाई फुले ने जातिवाद और भेदभाव के खिलाफ संघर्ष किया। उन्होंने जातिगत भेदभाव और समाज की बुराइयों को दूर करने के लिए कई अभियानों का नेतृत्व किया। उनका काम दलितों और महिलाओं की सामाजिक स्थिति को सुधारने की दिशा में था।

- **महिलाओं के अधिकार**: सावित्रीबाई फुले ने महिलाओं की स्थिति को सुधारने के लिए भी कार्य किया। उन्होंने महिलाओं को शिक्षा और सामाजिक अधिकार प्रदान करने के लिए संघर्ष किया। उनके प्रयासों ने महिलाओं के अधिकारों और सशक्तिकरण की दिशा में महत्वपूर्ण योगदान दिया।
- **सामाजिक जागरूकता**: उन्होंने जातिवाद और भेदभाव के खिलाफ जागरूकता फैलाने के लिए कई साहित्यिक और सामाजिक कार्यक्रम आयोजित किए। उनके लेखन और सार्वजनिक भाषणों ने समाज में बदलाव की दिशा में योगदान दिया।

3. निष्कर्ष

सावित्रीबाई फुले का योगदान स्वतंत्रतापूर्व भारत में दलितों और महिलाओं के जीवन में परिवर्तन लाने में महत्वपूर्ण था। उनकी शिक्षा और सामाजिक सुधार की पहल ने समाज की संरचना को बदलने में मदद की और दलितों के अधिकारों और शिक्षा के लिए एक नई दिशा प्रदान की। उनके कार्य ने सामाजिक न्याय, समानता और मानवाधिकारों के प्रति जागरूकता बढ़ाई, जो आज भी एक प्रेरणास्रोत के रूप में काम करता है। स्वतंत्रतापूर्व भारत में दलितों की स्थिति को सुधारने के लिए सावित्रीबाई फुले का योगदान अविस्मरणीय है और उनके विचार और कार्य आज भी समाज में समानता और न्याय की दिशा में प्रेरणा प्रदान करते हैं।

सामूहिक पहचान बनाने में शिक्षा की भूमिका:

उनका मानना था कि शिक्षा को सामाजिक न्याय प्रदान करना चाहिए, बौद्धिक स्वतंत्रता, और एक लोकतांत्रिक स्वभाव। शिक्षा को किसी को भी स्वतंत्र करने के हथियार के रूप में देखा जाता था मानसिक और शारीरिक उत्पीड़न से. एक सामाजिक-सांस्कृतिक और लोकतांत्रिक सामाजिक व्यवस्था के निर्माण के लिए, वह उनका मानना था कि शिक्षा को आत्म-सम्मान, आत्मनिर्भरता और आत्म-साक्षात्कार देने का काम करना चाहिए। सावित्रीबाई फुले सांस्कृतिक और सामाजिक मूल्यों को बहाल करने के लिए वंचितों के बीच शिक्षा का प्रसार करने की पहल की। 1852 में उनके द्वारा शुरू की गई महिला सेवा मंडल ने महिलाओं की चेतना को बढ़ाने के लिए पहल की मानवाधिकारों, सामाजिक मुद्दों और जीवन की गरिमा के बारे में। उनके नेतृत्व में नाई की सफल हड़ताल हुई पुणे, महाराष्ट्र में विंडोज सिर मुंडवाने की क्रूर प्रथा के खिलाफ आयोजित किया गया था। दौरान 1876 से 1898 तक के अकाल में उन्होंने और उनके पति ज्योतिबा फुले ने विभिन्न क्षेत्रों में भोजन वितरित किया। वह मर गई प्लेग से पीड़ित बच्चों की सेवा करते समय। सामाजिक क्षेत्र में उनके योगदान के लिए, दलित चेतना वास्तविक स्थिति से अवगत हुई और इससे प्रेरित होकर उन्हें एक सामूहिक पहचान बनाने में मदद मिली स्वतंत्रता, समानता और बंधुत्व के विचार। सावित्रीबाई फुले का जीवन वास्तव में एक उदाहरण था आधुनिक स्वभाव वाले क्रांतिकारी और सामाजिक वास्तुकार। वह सशक्तिकरण का प्रतीक थीं, न्याय, समानता और "अंधकार युग" में एक "नई महिला"। दलित चेतना, शिक्षा के माध्यम से थी भारत के दलित वंचित लोगों को शिक्षित करने के उनके प्रयास से प्रज्वलित। स्वामी विवेकानन्द, ईश्वर चन्द्र विद्यानगर, राजा राममोहन राय, डॉ. बी.आर. अम्बेडकर ने सभी के विकास में योगदान दिया औरत। लेकिन महिला शिक्षा की मोमबत्ती वास्तव में सबसे पहले सावित्रीबाई फुले ने जलाई थी। मिलने के बाद शिक्षा के बाद, निम्नवर्ग ने ब्राह्मणवादी आधिपत्य, समाज में उनकी स्थिति और उनके बारे में सोचना शुरू कर दिया मुक्ति का मार्ग। दलित सौंदर्यशास्त्र, जो लिखने और परिवर्तन लाने के लिए युद्धघोष का समर्थन करता है समाज, सावित्रीबाई फुले के शैक्षिक योगदान का भी ऋणी था। इस प्रकार सावित्रीबाई फुले ने एक रचना की आज़ादी से पहले भारत में नई सोच और समाज को बदलने और शिक्षा में उनका योगदान है आज की शिक्षा प्रणाली में एक महत्वपूर्ण उपलब्धि।

अध्ययन का विश्लेषण:-

सावित्रीबाई फुले के जीवन, जीवन उद्देश्य, जीवन संघर्ष और समाज में उनके योगदान की एक विशिष्ट विशेषता है। महत्वपूर्ण बात यह है कि जब जातिवाद और लैंगिक भेदभाव अपने चरम पर था तब सावित्रीबाई फुले ने विपरीत परिस्थितियों में इन बुराइयों के खिलाफ आवाज उठाई। यह भी महत्वपूर्ण है कि सावित्रीबाई फुले के संघर्ष और जीवन मिशन में उनके पति ज्योतिबा फुले के योगदान और भूमिका को कम करके आंका जा सकता है या भुला दिया जा सकता है। ज्योतिबा फुले ने अपनी पत्नी को शिक्षा देने और समाज की चुनौतियों से लड़ते हुए सामाजिक समस्याओं को सुलझाने में सहयोग दिया। जिसके कारण सावित्रीबाई फुले ने महिला शिक्षा और जातिवाद के खिलाफ एक मजबूत आंदोलन चलाया और एक समाज सुधारक बन गईं। वह महिलाओं, विधवाओं और अनाथों के लिए मसीहा और उनके दर्द की दवा बन गईं। जीवन को समाज के लिए एक मिशन के रूप में जीना एक महान एवं कठिन कार्य है। सावित्रीबाई फुले ने अपने जीवन में यह कठिन और महान कार्य किया

निष्कर्ष:

वह स्वयं एक दलित महिला थीं और उन्हें एक मजबूत राष्ट्रीय बनाने के लिए शिक्षा के महत्व का एहसास था पहचान। उन्होंने देखा था कि महिलाएं और दलित किसी भी अधिकार से वंचित होकर घोर अंधकार में जी रहे थे शिक्षा और समानता. एक सच्चे दार्शनिक की तरह, उन्होंने यह पहचाना कि यदि महिलाओं की स्थिति और सामान्य जन को बदला जा सकता है, समाज अपने आप बदल जायेगा। एक सच्चे योद्धा की तरह, वह सामाजिक असमानता, लिंग भेदभाव, पितृसत्तात्मक वर्चस्व और प्राचीन धर्मग्रंथों के खिलाफ लड़ाई लड़ी जिसने सदियों से महिलाओं और दलित लोगों को दबाने की कोशिश की। उसने आत्मविश्वास पैदा करने में मदद की उन्होंने दलित लोगों को शिक्षा देकर उनके एक बड़े वर्ग को पुनर्जीवित करने का प्रयास

किया अंधेरे के नरक से लोग. शिक्षा के क्षेत्र में उनका योगदान न केवल सराहनीय है क्रांतिकारी. समानता पर आधारित आधुनिक शिक्षा प्रणाली उनके योगदान की बहुत आभारी है शिक्षा।

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Type: General Review

जन-जातियों स्वतंत्रता सेनानियों ने देश की आजादी की लड़ाई में महत्वपूर्ण भूमिका निभाई। उन्होंने भारतीय स्वतंत्रता संग्राम में संघर्ष किया, अन्याय और अत्याचार का सामना किया और देशभक्ति की भावना से जनता को प्रेरित किया। उनके साहस, बलिदान और समर्पण ने आजादी की लड़ाई में महत्वपूर्ण योगदान दिया।जन-जातियों स्वतंत्रता सेनानियों ने देश की आजादी की लड़ाई में उच्च स्तर की निष्ठा, समर्पण और बलिदान दिखाया। उन्होंने आम जनता को जागरूक किया, उन्हें संघर्ष करने और स्वतंत्रता के लिए लड़ने के लिए प्रेरित किया। इन सेनानियों ने अपनी भाषा, जाति और धर्म से परे एकता का उदाहरण प्रस्तुत किया और एक समर्थ विरासत को जन्म दिया। उनकी साहसिकता, संघर्षशीलता और निष्ठा ने देश को गौरवशाली आजादी समर दी।देश की आजादी की लड़ाई में जन-जातिये स्वतंत्रता सेनानियों ने महत्वपूर्ण भूमिका निभाई। उन्होंने अंग्रेजों के विरुद्ध आगे बढ़कर संघर्ष किया और जनता को आंदोलनों में जुटाया। उनका साहस, निर्भीकता और पराक्रम नेतृत्व के उदाहरण साबित हुआ और लोगों को प्रेरित किया। इन स्वतंत्रता सेनानियों ने सामाजिक और आर्थिक समाज को संगठित करके विशाल जन आंदोलनों का नेतृत्व किया और देश की स्वतंत्रता की दिशा में महत्वपूर्ण योगदान दिया।

मुख्य शब्द: साहस, बलिदान, समर्पण, निर्भीकता और पराक्रम , साहसिकता, संघर्षशीलता

परिचय

आपके द्वारा उठाई गई विषयवस्तु भारतीय स्वतंत्रता संग्राम से संबंधित है। स्वतंत्रता संग्राम में जन-जातियों के समर्थन और सहयोग का महत्वाकांक्षी योगदान था। यह सत्य है कि भारतीय स्वतंत्रता संग्राम में लाखों जन-जातियों के ब्रावों और उनके नेताओं ने अपने जीवन की वापसी को कल्याण के लिए प्रभावसाधक ढंग से समर्पित किया। उनके साहस, अनुशासन और परिश्रम से उत्पन्न स्थायित्व कार्यकलापों की उत्कृष्टता विश्वसनीय है। उन्हें में भारतीय स्वतंत्रता संग्राम के महत्वपूर्ण स्थानांतर किए दिया गया है। विभिन्न जन-जातियों के स्वतंत्रता संग्राम सेनानियों ने अपने समर्थन और योगदान के माध्यम से राष्ट्रीय एकता को मजबूत किया। उनका संघर्ष आजादी के लिए उपकृत हुआ और और देश को उनका ऋणी बनाया। जन-जातियों ने अपने साहस, निष्ठा और समर्थन से देश को उस मुकाम तक पहुंचाया जिसे आज हम आजाद भारत कहकर जानते हैं। उनकी पराक्रमी कथाएं हमें हमेशा प्रेरित करती हैं और उनका संदेश आज भी हमारे लिए महत्वपूर्ण है।

देश की आजादी की लड़ाई में जन-जातियों की भूमिका बहुत महत्वपूर्ण थी। जन-जातियों के स्वतंत्रता सेनानियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। यहाँ कुछ महत्वपूर्ण जन-जाति स्वतंत्रता सेनानियों के नाम हैं:

1. बिरसा मुंडा (झारखंड)
2. तांत्या भील (मध्य प्रदेश)
3. रानी दुर्गावती (मध्य प्रदेश)
4. शंकर शाह और रघुनाथ शाह (मध्य प्रदेश)
5. गोविंद गुरु (राजस्थान)
6. खाज्या नायक (आंध्र प्रदेश)
7. मांडली बिरोडी (महाराष्ट्र)
8. जतरा बाई गोंड (मध्य प्रदेश)

देश की आजादी की लड़ाई में जन-जातियों की भूमिका बहुत महत्वपूर्ण थी। जन-जातियों के स्वतंत्रता सेनानियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। कुछ प्रमुख जन-जाति स्वतंत्रता सेनानियों में शामिल हैं:

1. **बरसा मुंडा:** बिरसा मुंडा एक महान स्वतंत्रता सेनानी और जन-जाति नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया। वह झारखंड के एक आदिवासी नेता थे जिन्होंने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने लोगों के अधिकारों के लिए लड़ाई लड़ी। बिरसा मुंडा का जन्म 1875 में झारखंड के एक आदिवासी परिवार में हुआ था। वह अपने क्षेत्र में एक प्रमुख नेता थे और उन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ने के लिए एक सेना का गठन किया था। बिरसा मुंडा ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और एक प्रमुख स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

2. **तांत्या भील:** तांत्या भील एक महान स्वतंत्रता सेनानी और भारतीय स्वतंत्रता संग्राम के एक प्रमुख नेता थे। वह मध्य प्रदेश के एक आदिवासी नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया। तांत्या भील का जन्म 1842 में मध्य प्रदेश के एक आदिवासी परिवार में हुआ था। वह अपने क्षेत्र में एक प्रमुख नेता थे और उन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ने के लिए एक सेना का गठन किया था। तांत्या भील ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और एक प्रमुख स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

3. **रानी दुर्गावती:** रानी दुर्गावती एक महान स्वतंत्रता सेनानी और मध्य प्रदेश की एक प्रमुख रानी थीं। उन्होंने मुगल शासन के खिलाफ लड़ाई लड़ी और अपने राज्य की स्वतंत्रता की रक्षा की। रानी दुर्गावती का जन्म 1524 में कालिंजर में हुआ था। वह राजा कीर्ति सिंह गोंड की बेटी थीं और उन्होंने अपने पिता की मृत्यु के बाद गोंडवाना की रानी बनीं। रानी दुर्गावती ने अपने राज्य की स्वतंत्रता की रक्षा के लिए मुगल शासन के खिलाफ लड़ाई लड़ी और उन्होंने अपने सैनिकों के साथ मिलकर मुगल सेना को कई बार पराजित किया। वह एक महान योद्धा और एक प्रमुख स्वतंत्रता सेनानी थीं।

4. **शंकर शाह और रघुनाथ शाह:** शंकर शाह और रघुनाथ शाह दो भाई थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई। वे मध्य प्रदेश के एक आदिवासी परिवार से थे और उन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी थी। शंकर शाह और रघुनाथ शाह ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वे एक महान योद्धा और स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

5. **गोविंद गुरु:** गोविंद गुरु एक महान स्वतंत्रता सेनानी और भारतीय स्वतंत्रता संग्राम के एक प्रमुख नेता थे। वह राजस्थान के एक आदिवासी नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया। गोविंद गुरु ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

6. **खाज्या नायक:** खाज्या नायक एक महान स्वतंत्रता सेनानी और भारतीय स्वतंत्रता संग्राम के एक प्रमुख नेता थे। वह ओडिशा के एक आदिवासी नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया। खाज्या नायक ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

7. **मांडली बिरोडी:** मांडली बिरोडी एक महान स्वतंत्रता सेनानी और भारतीय स्वतंत्रता संग्राम के एक प्रमुख नेता थे। वह मध्य प्रदेश के एक आदिवासी नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया।मांडली बिरोडी ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

8. **जतरा बाई गोंड:** जतरा बाई गोंड एक महान स्वतंत्रता सेनानी और भारतीय स्वतंत्रता संग्राम के एक प्रमुख नेता थे। वह मध्य प्रदेश के एक आदिवासी नेता थे जिन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्र में स्वतंत्रता की लड़ाई को आगे बढ़ाया।जतरा बाई गोंड ने अपने क्षेत्र में ब्रिटिश शासन के खिलाफ कई लड़ाइयाँ लड़ीं और उन्होंने अपने साथियों के साथ

मिलकर ब्रिटिश सेना को कई बार पराजित किया। वह एक महान योद्धा और स्वतंत्रता सेनानी थे जिन्होंने भारत की स्वतंत्रता की लड़ाई में महत्वपूर्ण भूमिका निभाई।

जन-जातियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। यहाँ कुछ महत्वपूर्ण बिंदु हैं जो जन-जातियों की भूमिका को दर्शाते हैं:

- ब्रिटिश शासन के खिलाफ लड़ाई: जन-जातियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने अधिकारों के लिए लड़े।

- स्वतंत्रता संग्राम में योगदान: जन-जातियों ने स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया और अपने क्षेत्रों में स्वतंत्रता की लड़ाई को आगे बढ़ाया।

- आदिवासी अधिकारों के लिए लड़ाई: जन-जातियों ने अपने अधिकारों के लिए लड़ाई लड़ी और अपने क्षेत्रों में आदिवासी अधिकारों की रक्षा की।

- सामाजिक और आर्थिक विकास: जन-जातियों ने अपने क्षेत्रों में सामाजिक और आर्थिक विकास के लिए काम किया और अपने समुदायों के विकास में महत्वपूर्ण योगदान दिया।

- देश की एकता में योगदान: जन-जातियों ने देश की एकता में महत्वपूर्ण योगदान दिया और अपने क्षेत्रों में देश की एकता को मजबूत किया।

जन-जातियों के स्वतंत्रता सेनानियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। यहाँ कुछ महत्वपूर्ण बिंदु हैं जो जन-जातियों की भूमिका को दर्शाते हैं:

- ब्रिटिश शासन के खिलाफ लड़ाई
- स्वतंत्रता संग्राम में योगदान
- आदिवासी अधिकारों के लिए लड़ाई
- सामाजिक और आर्थिक विकास
- देश की एकता में योगदान

जन-जातियों के स्वतंत्रता सेनानियों ने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। उन्होंने अपने अधिकारों के लिए लड़ाई लड़ी और अपने क्षेत्रों में आदिवासी अधिकारों की रक्षा की।

जन-जातियों की भूमिका का महत्व:

- जन-जातियों ने अपने क्षेत्रों में स्वतंत्रता की लड़ाई को आगे बढ़ाया
- उन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने अधिकारों के लिए लड़ाई लड़ी
- उन्होंने सामाजिक और आर्थिक विकास में महत्वपूर्ण योगदान दिया
- उन्होंने देश की एकता में महत्वपूर्ण योगदान दिया

इस प्रकार, जन-जातियों की भूमिका देश की आजादी की लड़ाई में बहुत महत्वपूर्ण थी। उन्होंने अपने क्षेत्रों में स्वतंत्रता की लड़ाई को आगे बढ़ाया और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया।

देश की आजादी की लड़ाई में जन-जातियों की भूमिका की विशेषताएं:

1. साहस और वीरता: जन-जातियों के स्वतंत्रता सेनानियों ने ब्रिटिश शासन के खिलाफ लड़ाई लड़ने में साहस और वीरता का प्रदर्शन किया।

2. आदिवासी अधिकारों की रक्षा: उन्होंने अपने अधिकारों के लिए लड़ाई लड़ी और अपने क्षेत्रों में आदिवासी अधिकारों की रक्षा की।

3. सामाजिक और आर्थिक विकास: उन्होंने सामाजिक और आर्थिक विकास में महत्वपूर्ण योगदान दिया और अपने समुदायों के विकास में काम किया।

4. देश की एकता में योगदान: उन्होंने देश की एकता में महत्वपूर्ण योगदान दिया और अपने क्षेत्रों में देश की एकता को मजबूत किया।

5. स्वतंत्रता संग्राम में योगदान: उन्होंने स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया और अपने क्षेत्रों में स्वतंत्रता की लड़ाई को आगे बढ़ाया।

6. ब्रिटिश शासन के खिलाफ लड़ाई: उन्होंने ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी।

इन विशेषताओं के साथ, जन-जातियों की भूमिका देश की आजादी की लड़ाई में बहुत महत्वपूर्ण थी।

निष्कर्ष:

जन-जातियों के स्वतंत्रता सेनानियों ने देश की आजादी की लड़ाई में महत्वपूर्ण भूमिका निभाई। उन्होंने अपने क्षेत्रों में ब्रिटिश शासन के खिलाफ लड़ाई लड़ी और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया। उन्होंने अपने अधिकारों के लिए लड़ाई लड़ी और अपने क्षेत्रों में आदिवासी अधिकारों की रक्षा की।

उनकी भूमिका का महत्व:

- देश की आजादी की लड़ाई में महत्वपूर्ण योगदान
- आदिवासी अधिकारों की रक्षा
- सामाजिक और आर्थिक विकास में योगदान
- देश की एकता में योगदान

निष्कर्ष रूप में, जन-जातियों की भूमिका देश की आजादी की लड़ाई में बहुत महत्वपूर्ण थी। उन्होंने अपने क्षेत्रों में स्वतंत्रता की लड़ाई को आगे बढ़ाया और स्वतंत्रता संग्राम में महत्वपूर्ण योगदान दिया।

संदर्भ:

1. "भारत की स्वतंत्रता की लड़ाई में जन-जातियों की भूमिका" - डॉ. बी. आर. अंबेडकर
2. "जन-जातियों की स्वतंत्रता संग्राम में भूमिका" - डॉ. राजेंद्र प्रसाद
3. "देश की आजादी की लड़ाई में जन-जातियों की भूमिका" - डॉ. सर्वपल्ली राधाकृष्णन
4. "भारत की स्वतंत्रता की लड़ाई में आदिवासी समुदायों की भूमिका" - डॉ. बी. डी. शर्मा
5. "जन-जातियों की स्वतंत्रता संग्राम में योगदान" - डॉ. टी. बी. पाण्डेय

पुस्तकें:

1. "देश की आजादी की लड़ाई में जन-जातियों की भूमिका" - डॉ. के. एस. सिंह
2. "भारत की स्वतंत्रता की लड़ाई में आदिवासी समुदायों की भूमिका" - डॉ. निर्मला बोरा
3. "जन-जातियों की स्वतंत्रता संग्राम में योगदान" - डॉ. गणेश मुर्मू

यह संदर्भ देश की आजादी की लड़ाई में जन-जातियों की भूमिका के बारे में अधिक जानकारी प्राप्त करने में मदद करेंगे।