

In Quest of **HUMAN DEVELOPMENT**

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Anupam Sarma

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Editor : **Anupam Sarma**
Department of Economics
M.N.C. Balika Mahavidyalaya, Nalbari

Co-Editors : **Yeasmina Begum &
Oshin Mary Daimari**
Department of Economics
M.N.C. Balika Mahavidyalaya, Nalbari

Publisher : **Dr. Gargee Chakraborty**
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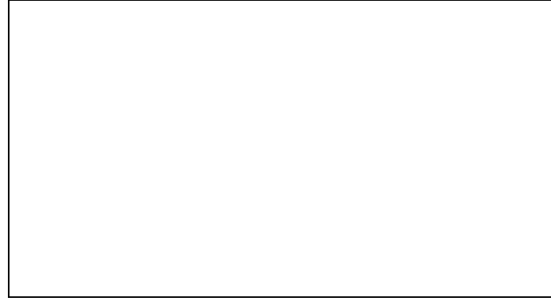


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Email : mncbm_nalbari@rediffmail.com, Website : www.mncbm.ac.in



Foreword

Dear Readers

MNC Balika Maahavidyalaya's continuous effort for academic engagement has resulted in the publication of the book 'In Quest of Human Development'. We are pleased to get responses from twenty one academicians and research scholars from different Universities and Colleges. I believe the articles would contribute in developing academic atmosphere and encouragement for writing for better dissemination of knowledge.

I would like to extend my heart felt gratitude to all contributors for their thought provoking articles, MNCBM Publication Cell and Editor Anupam Sarma, HoD, Economics for taking initiative in the timely publication of the Book.

(Dr. Gargee Chakraborty)

Principal

M.N.C. Balika Mahavidyalaya

Nalbari :: Assam

Editorial

Human development is the process of enlarging people's freedoms and opportunities and improving their well-being. It is about the real freedom ordinary people have to decide who to be, what to do and how to live. Thus it relates to the positive growth and changes in human habitation and livelihood which is an important area of study. Multidisciplinary research shows that people can improve their lives and well-being at any age by enhancing their abilities through positive relationships, experiences and opportunities. In addition, the Human Development Index (HDI) is a tool for assessing a country's development by the health and wellbeing of its citizens, not by economic growth alone. Erik Erikson (1950) developed a theory that outlined eight stages of human development from infancy through old age. Yet regardless of age or stage, there are core underlying abilities that are linked to human thriving throughout the lifespan. Development that begins during childhood is interconnected with adolescence and adulthood. That is why our book "In Quest of Human Development" using the self-administered compass survey of core human attributes spans the ages from childhood through adulthood.

The idea of humanity lies at the core of human development. It goes beyond the notion of economic growth with wealth maximization of the economy. The concept of human development is more about expansion of freedom, enhancement of capabilities, providing equal opportunities to all and ensuring a long, healthy and prosperous life. Thus enlarging the range of people's choices is the most significant aspect of human development. People's choices may involve a host of other issues, but living a long and healthy life, being educated and have access to resources needed for a decent standard of living including political freedom, guaranteed human rights and personal self-respect, etc. are considered as some of the non-negotiable aspects of human development. The book "In Quest of Human Development" consists twenty numbers of research papers that are trying to present the theme in different respects like An Analysis of the Human Development, Empowering Communities through Social Entrepreneurship, Economic Growth and development of India, Human Development and Agriculture, Impact of Human Psychology on Human Development, Gender Gaps in Human Development, Women Literacy-An Indicator of Socio-Economic Status in Rural Assam, Sustainability and Human Development, GDP Growth and Human

Development, Association between Hunger and Children Health Outcome in South Asian Region, etc.

As an editor, I would like to express my gratitude to all the researchers who have come up with their thoughts in their respective research. I am grateful to Dr. Gargee Chakraborty, Principal, M.N.C. Balika Mahavidyalaya, Nalbari for continuous support to publish the book within a stipulated period of time. I also thankful to all my colleagues Yeasmina, Oshin and Khyati and all the members of Publication Cell, MNCBM.

December, 2023

Editor

List of Contributor

1. Kannaki Bora, Assistant Professor, Dept. of Education, MNC Balika Mahavidyalaya
2. Oshin Mary Daimari, Assistant Professor, Department of Economics, M.N.C Balika Mahavidyalaya, Nalbari, Assam
3. Phakhon Brahma, Assistant Professor, Department of Bodo, Mangaldai College
4. Priyanka Sharma, Assistant Professor, Department of Economics, Pduam, Tulungia, Bongaigaon, Assam
5. Violina Devi, Assistant Professor, Department of Political Science, Nirmal Haloi College, Patacharkuchi
6. Yeasmina Begum, Assistant Professor, Department of Economics, M. N. C. Balika Mahavidyalaya, Nalbari
7. Neha Bharali, Assistant Professor, Department of Psychology, NEF College, Lokhra
8. Neha Singh, Counseling Psychologist, Adarsha Vidyalaya.
9. Kabita Bora, M.A.B.Ed (Tezpur University)
10. Buddhadev Lahary, Ph.D. Research Scholar, Department of Bodo, Gauhati University
11. Dipankar Saha, Research Scholar, Mizoram University, Aizawl
12. Nripen Baishya, Research Scholar, Mizoram University, Aizawl
13. Himasri Barman, Gokhale Institute of Politics and Economics, Pune
14. Hrishikesh Dutta, Post Graduate, Gauhati University
15. Sushmita Bhattacharjee, Post Graduate, Gauhati University
16. Kasturi Shivam
17. Kripali Kakati, M.A in Economics, M.ED, Graduate Teacher (Arts), Puranigudam Girls' High School
18. Maikel Swargiary, Guest Faculty, Department of Economics, BHB College, Sarupeta
19. Mr. Manna Nath, Research Scholar, Department of Economics, Assam University, Silchar
20. Dr. Manash Roy, Assistant Professor (Sr), Department of Economics, Assam University, Silchar
21. Pori Borah, Ex PG Student of Gauhati University
22. Pubali Goswami, Ex Student, Department of Education, Cotton University, Guwahati
23. Sagarika Khakhlary, Gauhati University
24. Tapan Das, Learner, KKHSOU, M.N.C. Open College

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ECONOMIC GROWTH AND DEVELOPMENT OF INDIA AND ITS IMPACT ON 21st CENTURY EDUCATION SYSTEM

Kannaki Bora

Assistant Professor

Dept. of Education, MNC Balika Mahavidyalaya

Abstract

Economic growth refers to the increase in a country's production of goods and services over time, typically measured by the rise in its Gross Domestic Product. It is a key indicator of a nation's prosperity and development. Various factors contribute to economic growth, including investments, technological advancements, and government policies that support businesses and infrastructure. India's economic ascent has allowed for greater investment in education, leading to improved infrastructure, better teacher training, and increased access to quality education across various socioeconomic strata. The integration of technology into the education sector has been a notable consequence, transforming traditional teaching methods and expanding the reach of education through online platforms and digital resources. The economic growth of India in the 21st century has significantly impacted its education system. As the nation experienced rapid economic development, there has been a parallel emphasis on enhancing the quality of education. This article explores the dynamic relationship between India's economic growth and its educational landscape, shedding light on key dimensions such as increased funding for education, technological advancements, and evolving skill requirements.

Keywords: *Economic growth, Development, Education system*

Introduction

Concept of growth in a country primarily pertains to the quantitative expansion of its economy, measured by indicators like Gross Domestic Product, industrial output, and per capita income. On the other hand, development is a

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broader and more qualitative concept, encompassing improvements in overall well-being, including social, cultural, and environmental aspects. Development indicators include the Human Development Index, literacy rates, life expectancy, and poverty levels. While economic growth is a crucial component of development, the latter emphasizes equitable distribution of benefits and improvements in living standards, education, healthcare, and the overall quality of life, with an eye towards sustainability for future generations. Growth and development are the most common aspects of country. Growth and development are different for different country. India is also experiencing the same which is mainly affected by the economy of the country.

The concept of economic growth in India revolves around the sustained increase in the country's products, measured primarily by Gross Domestic Product. Key factors influencing India's economic growth include investments, demographics, technological advancements, government policies, global factors, and infrastructure development. A combination of these elements contributes to the overall development and prosperity of the nation. It's essential to consider not only economic metrics but also factors like income distribution, social indicators, and environmental sustainability for a comprehensive understanding of India's progress.

India's economic development has been notable in various aspects. Over the past few decades, it has undergone significant growth, driven by sectors like technology, services, and manufacturing. However, challenges like income inequality, infrastructure, and poverty persist. The country has been focusing on initiatives to boost industrialization, innovation, and infrastructure to further foster its economic growth. India's economic growth is a fascinating canvas that intertwines various hues of progress and challenges against the backdrop of its rich natural landscape. The nation's growth, fuelled by technological advancements, industrialization, and the flourishing service sector, contrasts sharply with the environmental strains it faces. The country's economic trajectory, marked by a consistent annual growth rate, showcases a determined march towards modernization and development. Sectors like IT, manufacturing, and agriculture have been pillars of this growth, propelling India onto the global economic stage.

However, this advancement hasn't come without consequences. The natural environment has borne the burden of this growth. The pressures of urbanization, industrialization, and agricultural expansion have placed immense stress on the country's ecosystems. Deforestation, pollution, and dwindling biodiversity are just some of the ramifications of this economic progress.

India's growing economy has the potential to positively impact education by providing more resources for educational infrastructure, technology, and programs.

A robust economy can lead to increased funding for schools, better educational opportunities, and improved access to quality education, potentially reducing barriers to education for many. However, while economic growth can create more opportunities, it's essential to ensure that this growth is inclusive and benefits all sections of society to bridge educational disparities. India, with its ever-expanding economy, stands at the precipice of significant transformations, not least of which is the palpable impact on its educational landscape. The country's economic growth, characterized by increased GDP, foreign investments, and burgeoning industries, has the potential to substantially influence the educational sector, paving the way for multifaceted changes.

Impact on Education:

One of the most immediate impacts of a burgeoning economy on education is the allocation of greater resources towards educational infrastructure. Improved fiscal capacities enable the government to invest in building and renovating schools, colleges, and universities, creating an environment conducive to learning. Up-to-date facilities, libraries, laboratories, and technological advancements become more feasible, enhancing the quality of education across the board.

Moreover, a growing economy provides a platform for increased funding in educational programs and initiatives. Scholarships, grants, and research projects receive a substantial boost, encouraging innovation and academic excellence. The availability of financial aid broadens access to education, making it more equitable and inclusive. As a result, talented individuals from diverse socio-economic backgrounds gain the opportunity to pursue education, thereby fostering a more skilled and knowledgeable workforce for the evolving job market. The economic upsurge also paves the way for advancements in educational technology. With increased financial prowess, schools and universities can integrate modern teaching tools and methodologies, embracing e-learning platforms, interactive applications, and digital resources. This adaptation not only enhances the learning experience but also aligns education with the rapidly changing technological landscape, preparing students for a digital-driven future.

However, amid these positive prospects, challenges persist. The impact of a growing economy on education might not be uniformly distributed. Disparities in access to quality education may widen if policies are not meticulously designed to ensure inclusivity. Rural areas, marginalized communities, and underprivileged sections of society might not reap the full benefits of economic growth without targeted interventions and focused policies aimed at addressing these disparities.

This intersection of economic growth and education remains a crucial juncture in India's journey towards overall development, making it imperative to

conscientiously steer this evolution for the betterment of the nation and its future generations. The economic landscape of India exerts a profound influence on its 21st-century education system. As one of the world's fastest-growing economies, India's economic conditions shape various facets of education, impacting accessibility, quality, and overall educational outcomes.

One key aspect is government spending on education. The extent of financial allocation by the government determines the infrastructure development, teacher training programs, and availability of educational resources. Adequate funding allows for the implementation of innovative teaching methods, technology integration, and the establishment of educational institutions in underserved areas. However, budget constraints may hinder these initiatives, leading to disparities in educational opportunities.

India's economic growth also plays a pivotal role in shaping the aspirations of its populace. A robust economy fosters optimism about future employment opportunities, influencing the choice of educational streams and disciplines. For instance, during periods of economic expansion, there may be an increased emphasis on technical and vocational education to meet the demands of a burgeoning job market.

Income distribution is another critical factor. Disparities in income levels contribute to educational inequalities. Affluent families can afford private education, often perceived as providing better quality, while economically disadvantaged individuals may rely on public schools with limited resources. This economic divide reinforces social stratification and can perpetuate an uneven distribution of educational advantages.

Furthermore, economic challenges such as unemployment can trigger a shift in the focus of education. As the job market evolves, there may be an increased emphasis on skill development, entrepreneurship education, and vocational training to enhance employability. This dynamic relationship between the economy and education underscores the need for an adaptive and responsive educational system.

Technological advancements, often driven by economic growth, have transformed the educational landscape. The digital revolution has introduced new learning platforms, online resources, and interactive tools. However, the integration of technology into education is not uniform across all socioeconomic strata, raising concerns about a "digital divide" that could exacerbate existing economic disparities in educational outcomes.

The impact of economic growth on the education sector is multifaceted and can have both positive and negative effects. The key impacts in the 21st century can be determined by some aspects, those are:

Increased Access and Infrastructure:

Economic growth often leads to increased government spending on education. This can result in the construction of more schools, improved infrastructure, and better facilities, enhancing overall access to education.

Quality of Education:

Economic growth can contribute to improvements in the quality of education. This may include better-trained teachers, updated curricula, and the integration of technology for enhanced learning experiences.

Educational Technology and Innovation:

Economic growth enables the adoption of educational technologies, promoting innovation in teaching methods and learning resources. This can lead to a more dynamic and engaging educational experience.

Higher Education Opportunities:

Economic growth can result in increased funding for higher education institutions, leading to the expansion of academic programs, research opportunities, and the overall quality of tertiary education.

Increase research and innovations:

Increasing growth in the field of economy can lead to the expansion of research in the different fields. As the higher research and innovations need higher amount of economy, so economic growth and development of country is important to work as a fuel in the research field.

Skills Development for the Job Market:

A growing economy often demands a skilled workforce. Economic growth can drive efforts to align education with the needs of the job market, focusing on skill development and vocational training.

So, it has been seen that, India's growing economy undoubtedly holds tremendous potential to revolutionize its educational sector. The increased availability of resources, technological advancements, and widened access to education can significantly uplift the overall educational standard. However, ensuring an inclusive growth trajectory is imperative to address the existing disparities and leverage the full potential of an economically empowered educational landscape. Conclusively, it can be said that, the economic aspects of India significantly shape the trajectory of its 21st-century education system. Government spending, income distribution, economic growth, and technological advancements

all contribute to the evolving nature of education in the country. Recognizing and addressing the interplay between economic factors and education is crucial for fostering a more inclusive, equitable, and adaptable educational system that meets the needs of a rapidly changing society. It's the role of government and world union to work hard for the economic growth and development of each country. Because economic growth is one of the key factors to increase educational field and it's quality.

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AN ANALYSIS OF THE HUMAN DEVELOPMENT IN ASSAM

Oshin Mary Daimari

Assistant Professor

Department of Economics

M.N.C Balika Mahavidyalaya, Nalbari, Assam.

Abstract

Human development or the human development approach is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. It is an approach that is focused on people and their opportunities and choices. Assam has not gained much success though it possesses a very good prospect of deriving benefits out of its huge stock of human resource. The study attempts to study the human development in Assam through the help of its indicators. Along with it the study also attempts to compare the human development of Assam with the National Average. The study also attempts to find out the constraints in improving the human development in Assam and also to suggest some measures through which the human development in Assam can be enhanced. It has been evidenced through the study that Assam is lagging behind in its human development. In certain areas maternal mortality rate and per capita income the gap between Assam and India is significantly vast which is very alarming.

Keywords: *Birth Rate, Death Rate, Infant Mortality Rate, Maternal Mortality Rate, Life Expectancy at birth, Literacy Rate, GSDP and GDP, Per Capita Income*

Introduction

Assam is situated in the North- East of India and is the largest North - Eastern state in terms of population while second in terms of area. Assam covers an area of 78,438 km square. The state is bordered by Bhutan and the state of Arunachal Pradesh to the north; Nagaland, Arunachal Pradesh and Manipur to the east; Meghalaya, Tripura, Mizoram and Bangladesh to the south; and West Bengal to the west. As per 2011 census the total population of Assam is 3.12Cr. Thus the population of Assam forms 2.58 percent of India in 2011. Assam has total population of 31,205,576 in which males were 15,939,443 while females were 15,266,133. Assam is rich in natural resources. The natural resources of Assam may be classified under the following heads- mineral, forest, water, and agricultural resources. The State is one of the richest in biodiversity zones in the world and consists of the richest biodiversity zones.

As per the World Human Development Report, human development is a process of enlarging the range of people's choices increasing their opportunities for education and health care, income and empowerment and covering the full range of human choices from a sound environment to economic, social and political freedom. Thus enlarging the range of people's choices is the most significant aspect of human development. It is just the opposite of the western or euro-centric view of development. People should be able to have a long and healthy life. They should be educated and have access to resources needed for a decent standard of living.

The Human Development Report of 1990 views that human development cannot be measured by the yardstick of income alone but by incorporating as many as other relevant indicators. However, till now the various human development reports have considered three basic dimensions of human life in measuring human development. These are -

- The ability to enjoy a decent standard of living and live a socially meaningful life. It is measured by national income or income per capita in Purchasing Power Parity in US dollar.
- The ability to live a long and healthy life. It is measured in terms of life expectancy (years).
- Knowledge is a choice to acquire literacy/information. It is measured by educational attainment percentage, which is combined gross enrolment ratio in primary, secondary and tertiary levels.

Objectives of the study:

- To analyse the trend of human development in Assam.
- To compare Assam's human development with National Average.
- To find out the ways through which human development in Assam can be enhanced.

Methodology:

The study is descriptive in nature. The data are mainly collected from secondary data published in Research articles, Journals, E-Journals, Census of India 2011, Economic Survey of Assam, Directorate of Economics and Statistics, Assam and National Statistics Office, Ministry of Statistics and Programme Implementation (MoSPI), Govt. of India.

Selection of Indicators:

For the purpose of highlighting Assam's and India's human development the following indicators have been selected:

1. Birth Rate
2. Death Rate
3. Infant Mortality Rate
4. Maternal Mortality Rate
5. Life Expectancy at birth
6. Literacy Rate
7. Gross State Domestic Product(GSDP)and Gross Domestic Product(GDP)
8. Per Capita Income

Data Analysis:

1. Health : The role of health in human development is crucial as individuals who are healthy have a higher potential for success and are capable of giving their best efforts. Good health enables a person to perform efficiently at work and use their full potential.

1.1 Birth rate in Assam and India: The birth rate is the ratio between the number of live- born births in the year and the average total population of that year. Table 1 shows the birth rates of Assam and India since 2001 to 2020. Through table 1 it can be seen that trend of birth rate is decreasing in Assam. It can also be seen that the trend of birth rate is also decreasing in India. However the rate of birth rate is higher in Assam than in India.

Table1: Birth rate in Assam and India

Year	BIRTH RATES	
	Assam	India
2001	26.8	26.10
2002	26.3	25.74
2003	26.3	25.23
2004	25.1	24.75
2005	25.0	24.26
2006	24.6	23.77
2007	24.3	23.29
2008	23.9	22.80
2009	23.6	22.15
2010	23.2	21.50
2011	22.8	20.85
2012	22.5	20.20
2013	22.4	19.56
2014	22.4	19.25
2015	22.0	18.94
2016	21.7	18.63
2017	21.2	18.32
2018	21.1	18.02
2019	21.0	17.80
2020	20.8	17.59

Source: Registrar General of India

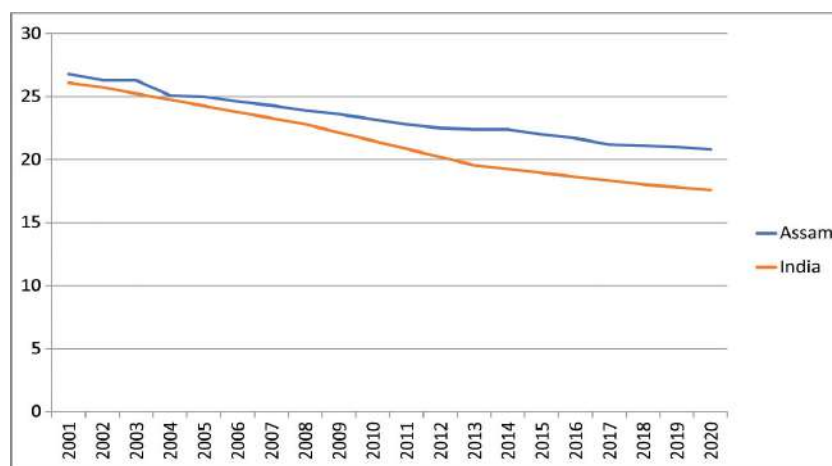


Fig 1: Birth Rate in Assam and India

1.2 Death rate in Assam and India: Death Rate is considered as one of the most important indicators of human development. Death rate is the ratio of deaths to the population of a particular area or during a particular period of time, usually calculated as the number of deaths per one thousand people per year.

Table 2: Death rate in Assam and India.

Year	DEATH RATES			
	Rural	Urban	(Rural + Urban) Assam	India
2001	9.8	6.6	9.5	8.6
2002	9.6	6.0	9.2	8.5
2003	9.5	5.9	9.1	8.3
2004	9.3	5.5	8.8	8.2
2005	9.2	5.6	8.7	8.1
2006	9.2	5.8	8.7	8.0
2007	9.1	5.7	8.6	7.9
2008	9.0	5.6	8.6	7.8
2009	8.8	5.9	8.4	7.6
2010	8.6	5.8	8.2	7.5
2011	8.4	5.6	8.0	7.4
2012	8.3	5.6	7.9	7.3
2013	8.2	5.6	7.8	7.2
2014	7.6	5.3	7.2	7.2
2015	7.4	5.1	7.1	7.2
2016	7.1	4.9	6.7	7.2
2017	6.7	5.3	6.5	7.2
2018	6.6	5.1	6.4	7.2
2019	6.4	5.2	6.3	7.2
2020	6.4	5.4	6.2	7.3

Source: Registrar General of India

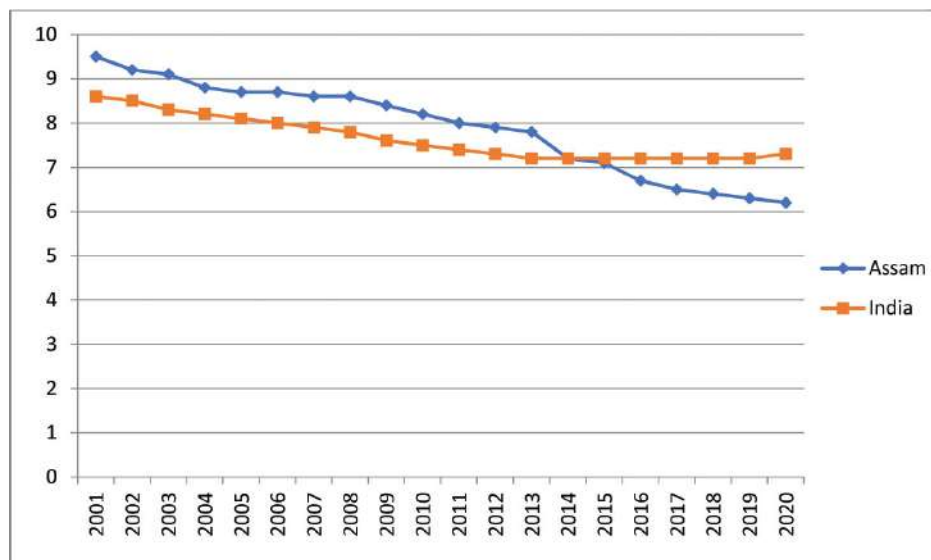


Fig: 2 Death rate in Assam and India.

From table 2 and figure 2 the death rates of both Assam and India can be grasped. It can be seen that the death rates in rural areas of Assam are higher than the urban areas of Assam. The death rates of were significantly higher in Assam than in India 2013. In 2014 the death rates in both Assam and India were same but from 2014 onwards the death rate of Assam has been declining. In fact from 2015 onwards the death rate of Assam has greatly reduced even below the national average.

1.3 Infant mortality rate: Infant Mortality Rate is the number of death of an infant before the infant's first birthday. The occurrence of infant mortality in a population can be described by the infant mortality rate (IMR), which is the number of deaths of infants under one year of age per 1000 live births.

Table 3: Infant mortality rate in Assam and India:

Year	Infant Mortality	
	Assam	India
2009	61	50
2010	58	47
2011	55	44
2012	55	42
2013	54	40

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2014	49	39
2015	47	37
2016	44	34
2017	44	33
2018	41	32
2019	40	30
2020	36	28

Source: Registrar General of India

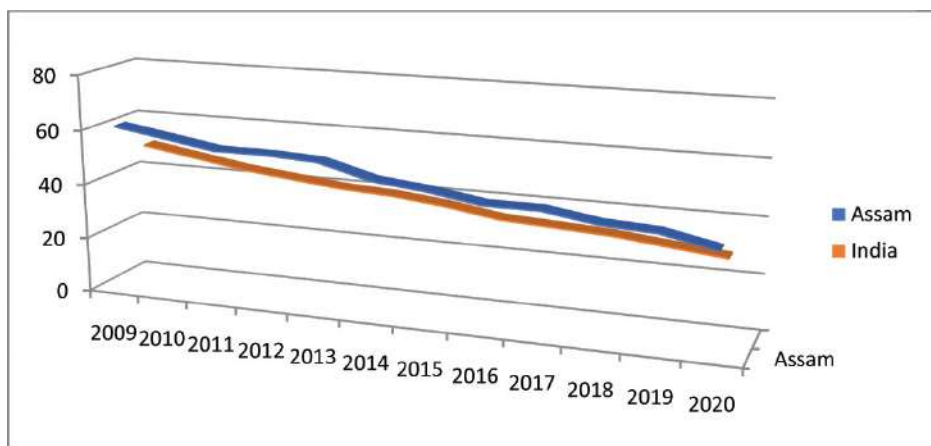


Fig: 3 Infant mortality rate in Assam and India

The infant mortality of the state in 2020 is 36 deaths per 1000 live births and that of India is 28 deaths per 1000 live births. No doubt the infant mortality rate of Assam has been decreasing but there is still significant gap between Assam and All India Infant Mortality Rate.

1.4 Maternal Mortality Rate: Maternal Mortality Rate is the annual number of female death per 100,000 live births from any causes related to or aggravated by pregnancy or its management. The Maternal Mortality Ratio of Assam and India from 2004-06 to 2017-19 is presented through table4 and figure4 given below:

Table 4 : Maternal Mortality Rate in Assam and India

Year	Assam	India
2004-06	480	254
2007-09	390	212
2010-12	328	178
2011-13	300	167
2014-16	237	130
2015-17	229	122
2016-18	215	113

Source: SRS Bulletin, Registrar General of India.

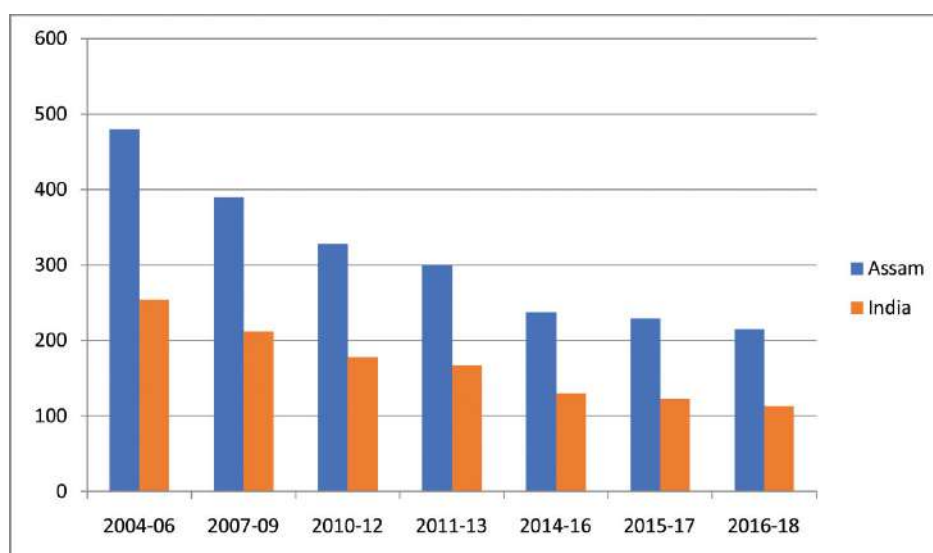


Fig. 4: Maternal Mortality Rate in Assam and India.

From figure 4 it can be seen that there is an overall decline of the Maternal Mortality Rate during the period from 2004-2019. However, unfortunately the rate is still very high in Assam in comparison to All India rate due to some major factors like infections and anemia during childbirth especially among rural women.

1.5 Life expectancy at birth: The World Health Organisation (WHO) defined life expectancy as the average number of years that a person expects to live in full health. Life expectancy varies by geographical area and by era. Life expectancy of a person or population group depends on several variables such as their life style, access to health care, diet, economic status and the relevant

mortality and morbidity data. However, as life expectancy is calculated based on averages a person may live for many years more or less than expected. According to the latest data published in 2020 life expectancy in India is: Male 67.4, Female 70.3 and total Life Expectancy is 69.42 which gives India a World Life Expectancy ranking of 125.

The data available from Sample Registration Survey (SRS), 2014-18 that Kerala has the highest life expectancy at birth (75.3) and lowest in Assam (66.9). (Source: WHO Report)

Table 5: Assam's life expectancy at birth.

Year	Male	Female	(Male+ Female) Assam
2006-10	61	63.2	61.9
2010-14	62.7	65.5	63.9
2011-15	63.5	66.2	64.7
2012-16	64.4	66.8	65.5
2013-17	65.4	67.3	66.2
2014-18	66.1	67.9	66.9

Source: Registrar General of India

2. Literacy rate: Literacy rates can have different definitions and forms of measurement in different parts of the world. However, the most commonly agreed upon definition comes from The United Nations Educational, Scientific and Cultural Organisation (UNESCO), which defines the literacy rate as: "The percentage of the population of a given age group that can read and write". Literacy enables individuals to acquire new skills and knowledge and follow instructions and use technology effectively. This leads to increased productivity and efficiency in the workplace which contributes to economic growth.

Table 6: Literacy rate of Assam and India.

Year	Assam	India
1951	18.53	18.33
1961	32.95	28.30
1971	33.94	34.45
1991	52.89	52.21
2001	63.25	64.84
2011	72.19	72.99

Source: Census of India, 2011

In Quest of Human Development

From Table 6 it can be seen that the literacy rates of both Assam and India has been increasing since 1951. The above data reveals that there is no significant gap of Assam with that of India in the field of literacy.

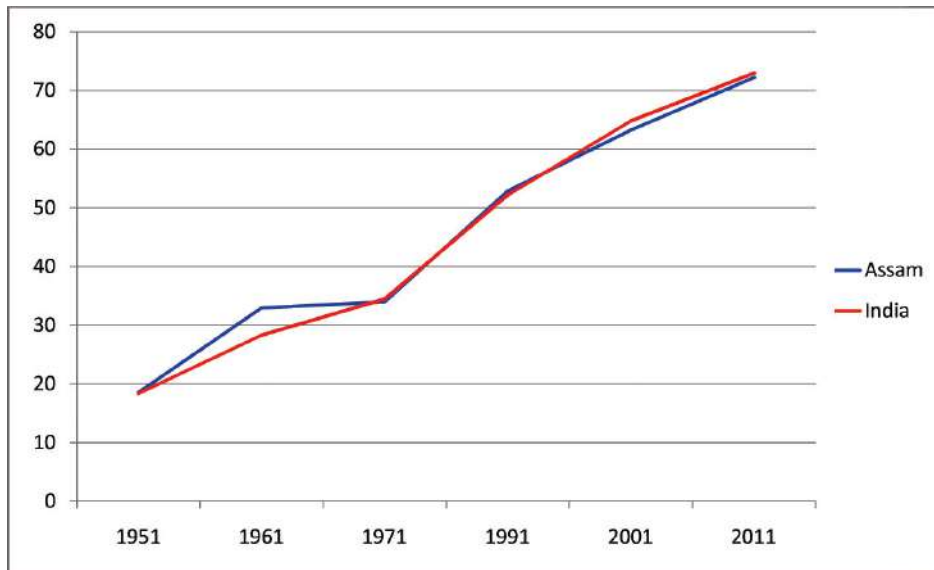


Fig. 5: Literacy rate of Assam and India.

3. Standard of living: Standard of living is another important indicator of human development. Standard of living is defined as the level of income, comforts and services available.

Table 7 and table 8 shows the Gross State Domestic Product of Assam (GSDP) and Gross Domestic Product of India (GDP) at current and constant prices (2011-12) prices.

Table 7: GSDP of Assam and GDP of India at current prices (2011-12) prices.

GSDP of Assam and GDP of India at current prices (2011-12) prices.					
Year	GSDP of Assam	Growth Rate (in %)	Year	GDP of All India	Growth Rate (in %)
2016-17	2,54,382	11.60	2016-17	15,391,669	10.80
2017-18	2,83,165	11.30	2017-18	17,090,042	11.00
2018-19	3,09,336	9.20	2018-19	18,886,957	10.50
2019-20	3,46,851	12.10	2019-20	20,351,013	7.80
2020-21(PE-II)	3,53,605	1.95	2020-21(1st RE)	1,98,00,914	-3.00
2021-22(QE)	4,12,612	16.70	2021-22(PE)	2,36,64,637	19.50
2022-23(AE)	4,93,167	19.52	2022-23(FAE)	2,73,07,751	15.40

Table 8: GSDP of Assam and GDP of India at constant prices (2011-12) prices.

GSDP of Assam and GDP of India at constant prices (2011-12) prices.					
Year	GSDP of Assam	Growth Rate (in %)	Year	GDP of All India	Growth Rate (in %)
2016-17	2,02,081	5.70	2016-17	12,308,193	8.30
2017-18	2,19,919	8.80	2017-18	13,144,582	6.80
2018-19	2,31,040	5.10	2018-19	14,003,316	6.50
2019-20	2,40,707	4.20	2019-20	14,569,268	4.00
2020-21(PE-II)	2,42,946	0.90	2020-21(1st RE)	1,35,58,473	-6.90
2021-22(QE)	2,62,523	8.10	2021-22(PE)	1,47,35,515	8.70
2022-23(AE)	2,89,192	10.16	2022-23(FAE)	1,57,60,363	7.00

For Assam PE-II -2nd provisional estimates, QE- Quick Estimates and AE- Advance Estimates

For All India -1st RE- First Revised Estimates, PE- Provisional Estimates and FAD- First Advance Estimates.

Source: Directorate of Economics and Statistics, Assam and National Statistics Office, Ministry of Statistics and Programme Implementation (MoSPI), Govt. of India.

Table 9: per capita income of Assam and India.

Per Capita Income of Assam and India					In Rs.
Year	Assam		Year	India	
	Current Prices	Constant prices (2011-12)		Current prices	Constant Prices (2011-12)
2011-12	41142	41142	2011-12	63462	63462
2012-13	44598	41609	2012-13	70983	65538
2013-14	49734	43002	2013-14	79118	68572
2014-15	52895	44809	2014-15	86647	72805
2015-16	60817	50642	2015-16	94797	77659
2016-17	66330	53575	2016-17	103870	83003
2017-18	75151	57835	2017-18	115224	87586
2018-19	81034	59943	2018-19	125883	92241
2019-20	90123	61519	2019-20	134186	94566
2020-21(PE-II)	90482	61304	2020-21(1st RE)	126855	85110
2021-22(QE)	102965	65726	2021-22(PE)	150007	91481
2022-23(AE)	118504	69826	2022-23(FAE)	170620	96522

For Assam PE-II -2nd provisional estimates, QE- Quick Estimates and AE- Advance Estimates

For All India -1st RE- First Revised Estimates, PE- Provisional Estimates and FAD- First Advance Estimates.

Source: Directorate of Economics and Statistics, Assam and National Statistics Office, Ministry of Statistics and Programme Implementation (MoSPI), Govt. of India.

Table 9 shows the per capita income of Assam and India. From table 9 it can be seen that the per capita income of Assam has been increasing since 2011-12 at both constant and current prices. However we can also see that the growth in per capita income of India is much higher than that of Assam. Unfortunately, the growth of per capita income of Assam is slower in comparison with that of National Average. It can also be seen that the gap between Assam's and India's growth rate is increasing year by year which is very dreadful.

4. Findings of the study:

- a. No doubt the infant mortality rate of Assam has been decreasing but there is still significant gap between Assam and All India Infant Mortality Rate.

- b. The rate of Maternal Mortality is still very high in Assam in comparison to All India rate due to some major factors like infections and anemia during childbirth especially among rural women.
- c. Kerala has the highest life expectancy at birth (75.3) and lowest in Assam (66.9).
- d. There is no significant gap of Assam with that of India in the field of literacy.
- e. The growth in per capita income of India is much higher than that of Assam.
- f. The gap between Assam's and India's per capita income is increasing year by year which is very dreadful.

5. Constraints of human development in Assam: Some of the major constraints of human development in Assam are-

- a. **Health :** According to report of Economic Survey, Assam 2015-16 the number of health institutions in 2015 are as follows-

- Civil Hospitals- 25
- Sub Divisional Civil hospitals - 13
- Primary Health Centres - 1014
- FRUS- 62
- CHCs- 151
- Sub Centres-4621

Though Govt. has taken various measures to improve maternal health and to reduce infant mortality rate, yet the Infant mortality rate in Assam is 215 against 113 in India in 2016-18 which is very high compared to national level. Moreover the small hospitals of rural areas lack high quality doctors, nurses and equipments which shows a large gap between rural and urban areas.

- b. **Education:** According to 2011 census, the literacy rate of India and North East India is as follows-

- India: 74.04%
- Assam: 73.18%
- Manipur: 79.85%
- Mizoram: 91.58%
- Nagaland: 80.11%
- Tripura: 87.75%

Arunachal Pradesh: 66.95%
(Source - Economic Survey, 2015-16)

It is observed that Assam is lagging behind not only India but also other states of North East. The rural literacy rate in the state is 69.34% as against 88.47% in urban areas. Due to illiteracy the rural people do not have knowledge about industrial and technological advancement. All these factors acts as a constraints in achieving human development in Assam.

6. Suggestions: Some of the suggestions for improving the human development in Assam are-

- a. The health sectors of Assam should be improved and that could be achieved by funding universities (to graduate more skilled doctors and nurses), hospitals and research centres.
- b. The education sector should be improved and that would be achieved by funding schools and ensuring that all the children receive full years of education at school.
- c. Higher education (universities) should be funded in order that more skilled workers are generated in the economy.
- d. Entrepreneurs should be encouraged by providing them hassle free environment.
- e. FDIs should be encouraged in multiple sectors.

Conclusions

Low level human development in Assam only reflects the high human deprivation among its population. There is tardiness in economic growth. Health care facilities of Assam are in a gloomy state especially in the rural areas. Assam is blessed with abundant natural resources but due to some constraints Assam lags behind in full utilisation of its natural resources and in improving its human development. Assam is ranked towards the bottom in the human development of the country. India's human development is also much poorer in comparison with other nations of the world. Efforts should be made by the people as well the government to bring about an improvement in the human development of Assam as well as India.

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ECONOMIC EMPOWERMENT STRATEGIES AMONG KARBI AND BODO WOMEN IN ASSAM

Phakhon Brahma

Assistant Professor

Department of Bodo, Mangaldai College

Abstract

The present study provides an in-depth look at the various economic empowerment strategies that Bodo and Karbi women in Assam have culturally carried out in this diverse region. It looks into many aspects of their economic contributions and shows the complex relationship that exists between tradition, entrepreneurship, and community development. The study reveals how their agricultural efforts have affected the economy, highlighting the interdependence of women's responsibilities in community development. Their role in weaving in both cultural expression and financial independence is highlighted. The current study explores business activities such as animal husbandry, bamboo and cane crafts, and market-focused businesses. It shows these women's economic ability to adapt as they participate in creative activities to achieve financial independence and improve communal well-being. This study explores deeply into the economic activities of Bodo and Karbi women, who actively sell a wide range of items in local marketplaces. From fresh fruits, vegetables, roots, and edible flowers to bamboo shoots, handmade garments, traditional attire, pickles, spices, snacks, textiles, woven baskets, pottery, beadwork, herbal remedies, traditional medicines, livestock, poultry, and agricultural products such as grains, nuts, seeds, dry fish, and fermented fish, these women play an important role in providing a diverse range of goods. The vast diversity of products they sell shows the richness of their local agriculture and traditions. The prospective economic impact of these entrepreneurial initiatives is tremendous, with the potential to significantly contribute to the total economic growth and sustainability of the Bodo and Karbi communities.

Keywords: *Bodo Women, Karbi Women, Economic Empowerment, Traditional Practices, Community-based Economic Activities*

Introduction

The Bodos are a major ethnic and linguistic community that were the first settlers in Assam, Northeast India. They have been established throughout much of North-East India, mostly on the north and south banks of the Brahmaputra valley in Assam. They are said to have moved to India from their original home, *Tibet* or *Ti-bod*, at an earlier age.

In the past, the people who resided in the various regions of the *Bod* nation were referred to as the *Boddo-Ficha* or *Boddo-cha* i.e. the children of the *Bod* country. The prominent writer R.M. Nath wrote in his book *The Background of Assamese Culture* as “*The inhabitants of various parts of the Bod country were known as the Boddo-Ficha or Boddo-cha (Ficha-cha-children) or the children of the Bod country, and were later known simply as the Boddo or the Bodo.*”¹

The Bodos are largely concentrated in the four Districts of BTR, namely Kokrajhar, Chirang, Baksa, and Udalguri. Apart from these four districts, Bodo people may be found in Karbi Anglong, Morigaon, Nagaon, NC Hills, Dhubri, Goalpara, Bongaigaon, Barpeta, Nalbari, the northern portion of Kamrup, Darrang, Sonitpur, Biswanath, Lakhimpur, Dibrugarh, Marigaon, Sibsagar, and Dhemaji. A significant number of them may be found in and around Thikrikhilla in the Garo Hills of Meghalaya, Dimapur in Nagaland, and Jalpaiguri in West Bengal. There are small Bodo regions situated outside of India, specifically in Nepal, Bhutan, and Bangladesh.

The Bodo people speak the Bodo language, often called *Boro*, which is a Tibeto-Burman language that is mostly spoken in the northeastern section of India, especially in the state of Assam. Dr. Kameswar Brahma stated about the Bodo language as- “*Linguistically the Bodos include a large group of people who are the speakers of the Tibeto- Burman speeches of the North and East Bengal, Assam and Burma. They are the Bodos or Boros of the Brahmaputra valley, Meches of lower Assam and West Bengal, Rabhas, Garos, Dimasas and Kacharis of Cachar district, Tipras, Lalungs, Sonowals, Hajangs, Mishings, Deuries, Chutias, etc.*”²

¹ Nath, R.M. (1974). *The Background of Assamese Culture*. Dutta Baruah & Co, p.16

² Brahma, Dr. K. (2008). *Aspects of Social Customs of the Bodos*. Bina Library, (p.1).

On the other hand, The Indian constitution refers to Karbis as *Mikirs*, but they never call themselves that; instead, they prefer to be called *Karbi* and sometimes '*Arleng*,' which means a '*man*'. The Karbis, who were formerly known as the *Mikirs*, are one of the major ethnic groups in Assam's hill district. They have their own religion and culture, which encompasses their beliefs, food habits, attire, dance, music, and so on. They also have their own ways of running their society, with many odd characters. Despite living in the Assam's hills, they have managed to carry out their farming in a unique way.

Lyall and Stack mention about the Karbis as- "*The name Mikir is that given to the race by the Assamese: its origin is unknown. They call themselves Arleng, which means man in general. In features the men resemble Assamese of the lower classes more than most of the Tibeto Burman races. Their colour is light yellowish brown, and the girls are often fair. The men are as tall as the majority of the hill races of Assam.*"³

According to Sri Jogyaram Gogoi, "*The name Karbi was derived from the word 'me akar kibi'. 'Me' is meant for fire, 'Akar' meant spark or flame and 'kibi' is meant to keep fire in the hearth. In earlier times the tribe was used to keep fire in the hearth therefore they came to be called Karbi.*"⁴

The two hill area districts of Assam known as Karbi Anlong and North Cachar Hills are home to a significant number of Karbis. On the other hand, the districts like Biswanath Chariali, Dima Hasao, Golaghat, Hojai, Kamrup Metropolitan, Karimganj, Lakhimpur, Morigaon, Nagaon, Sonitpur are also home to a significant number of Karbis. Along with this, the Karbi people also inhabit the surrounding districts like Arunachal Pradesh, Meghalaya, Mizoram, and Nagaland. According to Dr. Jayanta Das- "*Karbis are one of the largest ethnic tribes of the North East India who have their population even beyond Indian borders in Bangladesh. Smaller or larger Karbi settlements exist in the entire North-Eastern region and, as stated, even in Bangladesh. At present the Karbis have high concentration in the two hill districts of Assam- Karbi Anlong and North Cachar Hills. However, some Karbi population is also found in the North Cachar Hills, Kamrup, Morigaon, Nagaon and Sonitpur Districts as well.*"⁵

³ Lyall, & Stack. (1908). *The Mikirs*. Government of Eastern Bengal and Assam, (p.4).

⁴ Bey, M. S. (2012). *Philosophy and Spirituality of Eternal Culture of the Karbis of Assam*. Heritage Foundation. Guwahati, (p.127)

⁵ Das, J. (2022). *Glimpse of Karbi Literature and Culture*. Media hype Publication, (p.19)

Aims and Objectives:

- (a) To give a comprehensive understanding of the strategies used by Karbi and Bodo women in Assam for economic empowerment.
- (b) To highlight the diverse roles of Bodo and Karbi women in economic activities.
- (c) To evaluate the possible effects of Bodo and Karbi women's economic activity on the general economic development and sustainability of their communities by analysing their market-based activities.

Methodology:

It is a Descriptive study based on secondary sources like books, journals, and articles. The data needed for this research came from original sources like personal interviews and field trips.

Discussion: Traditional agriculture for survival is the main economic activity of the Bodo and Karbi tribes. Their economy is based mostly on agriculture, and their livelihoods originate from the cultivation of a variety of crops. The primary crops among these are rice, along with maize, millet, and vegetables.

Furthermore, there is a close bond between both communities and their natural surroundings. They frequently go hunting, fishing, and foraging in order to increase their food sources and earn money. Rivers and forests in their areas offer important resources for these kinds of endeavors. Both societies develop and practice animal husbandry, focusing on rearing cattle, goats, silkworm and poultry. Dairy products and meat, which are vital sources of nutrition and revenue, originate from these animals. Additionally, the Bodo and Karbi communities have a long tradition of weaving and handicrafts. Handicrafts, which include traditional textiles, bamboo and cane products, and textile arts, are produced by talented artists and support their economic activities.

Even though Bodo and Karbi societies uphold patriarchal structures, women contribute significantly and in many ways to the economic growth of their local communities. They actively participate in many facets of economic life, and their efforts go beyond taking care of the home and kids.

*“The tribal women never sit idle inside the home waiting for the male members’ income to take bread. With the usual domestic works she undertakes extra hard work along with the man to prove her role in generating the family income. Her income is not considered as the supplementary one but is considered as the main earning member of the family/society.”*⁶In the same way, Bodo and Karbi women participate in the process of economic

development. The active participation of them in many economic pursuits is a shift from conventional gender roles, in which women were frequently relegated to household tasks. Women in these communities are actively involved in income-generating activities and contribute considerably to their families' financial well-being. The following are some key aspects that highlight their contributions:

Agriculture: Seed preservation is critical to agricultural sustainability and is a necessary component of the entire agricultural cycle. The economy relies significantly on seed preservation. Farmers can decrease their dependence on commercial seed markets by storing their own seeds. This not only saves money but also helps to maintain local economies by keeping resources inside the community. The Bodo and Karbi Women are typically in charge of seed preservation and storage, ensuring that seeds are available for the following planting season. The traditional housing system of the Bodo and Karbi communities, which involves building houses with bamboo or reed walls and plastering them with a mixture of soil and cow dung, reflects these communities' indigenous and environmentally sustainable practices. This approach is used not just for building houses but is also integrated into their agricultural operations, including seed storage. The selected seeds are carefully placed on the plastered walls. The plastered surface is suitable for attaching and storing the seeds. Cow dung contains antibacterial properties that can help prevent molds and fungus from growing and damaging the seeds. In addition, Seed preservation by putting them inside bamboo poles is a unique and traditional approach used by Bodo and Karbi women that demonstrates their inventiveness and sustainability in agricultural activities.

Bodo and Karbi women actively participate in crop farming, which involves planting, weeding, and harvesting rice, maize, sesame, millet, and vegetables etc. They employ traditional farming practices and techniques that have been passed down through generations.

Binapani Pegu made a statement about the responsibilities undertaken by Bodo women - *"Just after marriage, the Bodo women are seen to be busy making their husbands' family economically strong and sound. Through various activities they subscribe to the family income. They are very hardworking. They help their husbands in agriculture through the seasons. They perform the plantation of paddy and various vegetables and earn money by selling them in the market."*⁷

⁶ Hembram, N.C. (2007). Role and Status of the Tribal Women in Their Societies Through Ages. In N.A. Hazarika (Ed.), *Tribal Women and Development* (pp. 205-206).

⁷ Pegu, B. (2007). Role and Status of the Tribal Women in Their Societies Through Ages. In N. A. Hazarika (Ed.), *Tribal Women and Development* (p. 332).

Manoshi Barua Deka and Rekha Moni Saikia commented on the participation of Karbi women in the agricultural field as- *“They clean the land, sow seeds and harvest the drops. Traditionally it is believed that women are engaged in transporting, harvesting, threshing and winnowing activities, in order to establish their role in terms of participation and decision making in farm related activities. The study was undertaken to find out the socio personnel profile of Karbi, the extent of participation of karbi women in farm related activities and decision-making pattern of Karbi women in farm related activities.”*⁸

Animal Husbandry: Animal husbandry is an important aspect of the local economy for Bodo and Karbi women, contributing greatly to economic sustainability and the overall well-being of their communities. Bodo and Karbi communities in Assam traditionally rear cattle, buffaloes, poultry (chickens and ducks), pigs, goats etc. The responsibility of caring for cows and buffaloes typically falls under the domain of men in Bodo and Karbi society. However, the care and management of animals such as goats, chickens, ducks, and pigs are often undertaken by the women of the household. Interestingly, in some cases, the economic contribution from pig farming is noted to surpass that from other livestock, indicating its significance in the financial endeavours of the Bodo and Karbi communities.

Rearing Silkworm: Sericulture, or silkworm farming, has traditionally played an important role in empowering women and improving economic conditions. Women frequently perform critical roles in sericulture, from silkworm rearing to silk processing. This participation helps individuals to gain skills, get employment, and generate income.

Women may contribute to the full silk manufacturing chain, from cocoon farming to silk weaving, by participating in sericulture. This increases not just their economic independence but also their social stature. Furthermore, sericulture supports sustainable practices and can provide communities with additional sources of income. Sericulture has shown to be a fruitful outlet for women’s entrepreneurship in many places, supporting economic growth and communal development. Silk has the capacity to empower and inspire women.

“Rearing of Endi- a kind of silk worms is done by the women in Karbi society. They produce Endi Chaddar (Scracts) in their looms. Now by selling the Endi cocoons and scracts the women folks in the Karbi society earns

⁸ Barua Deka, M., & Saikia, R. M. (2002). Participation and Decision Pattern of Karbi Women in Farm-Related Activities. Indian Journal of Hill Farming, (p.100.)

some money and they treat these as their own incomes and keep for themselves.”⁹

Handicraft and Weaving: Practicing vocational crafts empowers Karbi women to become economically self-sufficient. They not only contribute to their home income but also develop vital skills that may be used for business or career prospects by participating in tasks such as cutting, tailoring, and weaving. This economic empowerment can lead to increased social status and decision-making authority within their families and communities. According to Minakshi Rongpi Gogoi-*“In vocational trades like cutting, tailoring, knitting, embroidery, weaving, etc., the number of Karbi girls and women have been increasing at a very fast rate. The idea of getting self dependent has a very favourable impact on them. Handloom industry is very much common among all the Karbi families. It is a household industry and is very common among all the Karbi families. It is a household industry and a woman without having the knowledge of spinning and weaving is unthinkable in the Karbi society.”¹⁰*

It is essential to bring up the Bodo oral narrative of the two sisters *Ashagi* and *Bwishagi* while talking about the weaving traditions of the Bodo people. According to the tale, these sisters were such excellent weavers that they could perfectly weave a motif of birds flying over their heads into the fabric of their garments while they were at their looms.

In ancient times, there was a saying in Bodo society that *“a girl who does not know weaving could not get married.”* In Bodo society, being a skilled weaver may be an essential requirement for marriage in earlier times. It might be related to the importance of traditional skills and the ability to contribute to the household through a craft that has most likely been passed down through generations. As a result, it is not only about financial independence but also about fulfilling a social role and achieving particular cultural standards.

In addition to preserving the ancient skill, the transition from weaving for home and personal use to commercial commerce also gives Bodo and Karbi women new chances for employment. Seeing how these craftspeople have responded to market needs and made a living off of their abilities is inspiring. In addition to helping specific weavers, this economic growth probably promotes the community’s economy as a whole. It’s amazing to see how economic activity and

⁹ Bora, A. (2014). The Status of Women in Karbi Society. In B.C. Bhuyan (Ed.), *The Tribal Women* (p. 13). R.Kumar Omsons Publications.

¹⁰ Gogoi, M. R. (2014). Women's Status in Karbi Society. In B.C. Bhuyan (Ed.), *The Tribal Women* (pp. 29-30). R.Kumar Omsons Publications.

cultural aspirations are linked. It demonstrates how livelihood practices may become firmly established in the textile of cultural norms, altering social dynamics.

Selling Goods on the local market: It is common for Bodo and Karbi women to venture into the hills or jungles to collect vegetables, and they also engage in fishing using traditional tools. This practice serves both household needs and provides items for sale in local markets. The women play a vital role in gathering resources from the natural environment, contributing to both subsistence and economic activities within their Societies. For the Bodo and Karbi families, the kitchen garden is crucial to their economic growth. The kitchen garden, where they grow a range of vegetables, is actively taken care of by women. This practice provides extra food for local markets in addition to fulfilling the household's requirement for vegetables. They frequently sell fresh fruits, vegetables, roots, edible flowers, bamboo shoots, plants herbs, handwoven garments, traditional attire, pickles, spices, traditional snacks, textiles, woven baskets, beadwork, herbal remedies, traditional medicines, livestock, poultry, or agricultural products such as grains, nuts, or seeds, dry fish, fermented fish. The wide variety of items sold by Bodo and Karbi women at local markets has the potential to significantly contribute to the economic growth of their societies.

Community-based Economic Activities: In both Bodo and Karbi communities, Self-Help Groups provide a platform for women to pool resources, share knowledge, and collectively address economic challenges. These groups not only enhance economic opportunities but also foster a sense of community, support, and empowerment among women. The fact that Bodo and Karbi women actively participate in a variety of activities within self-help groups (SHGs) is impressive. Their participation in a range of economic endeavours advances both the general economic growth of their communities and their own personal empowerment. A look at some of the many pursuits these ladies engage in are Husbandry, Pickle Making, Weaving, Mushroom Production, etc.

Conclusion:

The economic empowerment of Bodo and Karbi women is profoundly attached to their traditional customs, traditional system, and adaptability to evolving circumstances. Agriculture, weaving, animal husbandry, and other vocational skills in which women actively engage are important in both communities. Women's roles extend beyond household obligations, with substantial contributions to the economic prosperity and sustainability of their communities. In simple terms, Bodo and Karbi women's economic activities not only contribute to individual and family well-being but also play an important part in the general

economic growth and sustainability of their communities. Their adaptation, resilience, and cultural preservation highlight the complex character of their economic contributions. The fact that some Karbi and Bodo women are participating in digital marketing is a notable and forward-thinking trend. This transition indicates an understanding of the prospects for economic empowerment afforded by the world of digital media. Engaging in digital marketing helps these women to promote and sell their products or services using online platforms, social media, and e-commerce. The adoption of digital marketing strategies is consistent with a larger worldwide trend in which firms and individuals increasingly rely on Internet channels to reach more customers. By taking this step, Karbi and Bodo women can overcome geographical barriers and get access to a larger market outside their local communities.

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ROLE AND PROBLEMS OF HUMAN CAPITAL FORMATION IN INDIA : AN OVERVIEW

Priyanka Sharma

Assistant Professor

Department of Economics

Pduam, Tulungia, Bongaigaon, Assam

Affiliated Under Gauhati University

Abstract

Human capital formation is a process of acquiring and increasing the number of skilled, educated and experienced people who are important for the economic, social and political development of the country. In other words, it refers to the development of abilities and skills among the population of the country. Knowledge has played a significant role in the development of mankind. It refers to the process of addition made to the stock of skilled and capable people in the country over a period of time. Human capital benefits not only the owner but also society in general. The present paper tries to explore the concept of human capital formation, its sources, role and problems etc. The study is descriptive in nature and the data is collected from secondary sources which includes books, journals, magazines, newspapers, websites etc.

***Keywords:** Human capital formation, sources, role and problems, productivity etc.*

Introduction

Human capital formation refers to the process of obtaining and augmenting the quantity of knowledgeable, experienced, and competent individuals who are critical to the nation's political, social, and economic advancement. Stated differently, it describes how the people living in the nation are developing their abilities and capabilities. Humanity has advanced significantly as a result of

knowledge. It describes the process of gradually adding to the pool of competent and skilled citizens in the nation. Not only does human capital help the owner, but society at large too. An educated individual, for instance, can effectively participate in a democratic process and advance the socioeconomic development of a country. Similar to this, good personal hygiene and sanitation help a healthy individual stop the spread of infectious diseases and epidemics. Therefore, human capital creates benefits for society as well as for individuals.

Definitions

According to Prof. Whipple, ‘A nation’s true wealth is neither in its land and water, nor in forests and mines, nor in its flock and herds, nor in dollars, but in its wealthy and happy men, women, and children.’

According to the OECD, human capital is defined as “the knowledge, skills, competencies and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances”.

According to Harbison, the human capital formation indicates, ”the process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for the economic and the political development of the country. Human capital formation is thus associated with investment in man and his development as a creative and productive resource.”

Objectives

- To explore the concept of human capital formation
- To highlight the sources of human capital formation
- To identify the roles and problems of human capital formation

Methodology

The present study is descriptive in nature which explores the concept of human capital formation, highlights the sources of human capital formation, identifies the roles and problems of human capital formation and for the study the data is collected from secondary sources which includes books, journals, newspapers etc.

Sources of Human Capital Formation

- **Investment in Education**

As education produces technical skills and manpower well suited for improving labour productivity and sustaining rapid economic development, it is regarded as a significant source of human capital formation. Education also tends to reduce the birth rate, which in turn lowers the rate of population growth. Moreover, education has social benefits because investing in education now will pay off later on.

- **Investment in Health**

A person's health is a human capital asset. In the same way that an employee works in developing his abilities to become marketable, he also invests in his health to boost his value in the job market. The potential for earnings is directly impacted by improvements in human well-being.

- **On-the Job Training**

An economy must assimilate new technologies and increase productivity as it develops. By helping workers develop their abilities and skills, on-the-job training increases labour productivity and contributes to the creation of human capital.

- **Expenditure on Migration**

Human capital building through migration can result in increased returns down the road. People move in quest of higher incomes and better work chances. Migration entails greater living expenses in regions that are often more developed than the places from which people migrate, as well as higher transportation and living expenses. Still, the increased income surpasses the expenses associated with moving.

- **Expenditure on Information**

Individuals make crucial choices about the investments and consumption they make. The crucial idea to understand is that decisions should be made because their benefits outweigh their costs. Insufficient information can lead to people making poor decisions and improper use of the limited resources. Thus, choices about investments must be made in order to maximise future profits and the effective use of both natural and human resources. Spending on education is therefore seen as a source of the formation of human capital.

Role of Human Capital Formation

Economic growth is defined as an increase in a country's real national income. A literate person contributes more to economic growth than a person

who is illiterate. Therefore, human capital formation is important for an economy. Some of the points that describe its importance are:

- **Improvement in Human Capital Productivity:**

By guaranteeing workers have knowledge and skills, investing in education promotes human capital formation and raises production and productivity. People's general health and technical abilities, which can only be obtained through education or training, are crucial for higher output quality and productivity.

- **Improvement in Quality of Life:**

A person's level of health, education, and skill development all contribute to their overall quality of life. Human capital development improves people's lives by improving productivity and creativity as well as their quality of life. Better health, education, and skill development raise people's quality of life. People can live better as a result of human capital production since it increases their ability to earn higher salaries for themselves, which promotes economic growth.

- **Modernisation of Attitude:**

Investing in human capital makes people more knowledgeable, capable, and contemporary. It alters their viewpoint and attitude towards various facets of the nation's development, including customs and labour markets. It results in the formation of a contemporary society for economic advancement.

- **Effective use of Physical Capital**

An individual with the requisite training and abilities will be more knowledgeable about the actual tools and equipment as well as the most effective ways to use them.

- **Important Role in the Development Strategy**

India's seventh plan, which ran from 1985 to 1990, gave human capital top priority. According to human resource development, educated and trained people are now an asset in boosting economic growth and guaranteeing the intended path of social transformation.

- **Improvement in Technology**

The goal of the educational system is to increase the productivity of human resources at all job levels by utilising technology advancements. It encourages individuals to be open to contemporary, scientific ideas. The quantity of technical and professional educational establishments has increased dramatically since independence. Thus, using cutting-edge technologies in the industrial process is made easier by sophisticated instructional system

- **Increased Participation and Equality**

An individual with the capacity to learn new information and specialised skills is more likely to find work. This boosts worker engagement in social, political, and economic activities as well as production efficiency. A high rate of participation indicates a high level of social and economic equality in a nation.

- **Increases Life Expectancy**

Human capital formation helps people live longer, healthier lives by providing access to nutrient-dense food and health facilities. This helps individuals live longer, happier lives.

- **Control of Population Growth**

When compared to educated families, illiterate families typically have larger families. Consequently, investing in education through the creation of human capital aids in educating the populace and raising awareness of the necessity of limiting the rate of population growth.

Problems of Human Capital Formation

- **High growth of population:** The continuous rise in population has adversely affected the quality of human capital. It reduces per head availability of the facilities.
- **Insufficient resources:** The resources needed have not been nearly as great as those allotted for the development of human capital. This is the reason why there are still insufficient facilities for the development of human capital.
- **Serious inefficiencies:** Resources in society are being wastefully used because educated people's abilities are either underutilised (in the case of underemployment) or not used at all (in the case of unemployment)
- **Brain drain:** Individuals relocate in quest of improved employment prospects and high compensation. It results in the loss of highly qualified individuals, such as engineers, doctors, and other professionals, who are uncommon in emerging nations. Such a loss of highly skilled human capital comes at a very high cost.
- **Several imbalances:** Compared to basic and secondary education, a larger share of resources has been directed towards higher education, which is intended for a smaller population. This is the reason for the economy's general lack of productivity.

- **Weak science and technology:** Science and the advancement of contemporary technology exhibit notably poor performance in terms of education.

Conclusion

The economic and social benefits of human capital formation and human development are well known. The union and state governments have been allocating substantial amount for development of education and health sectors. The spread of education and health services across different sectors of society should be ensured so as to simultaneously attain economic growth and equity. India has a rich stock of scientific and technical manpower in the world. We need to improve it qualitatively and provide such conditions so that they are utilised in our own country.

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STATUS OF UNEMPLOYMENT AND HUMAN DEVELOPMENT IN ASSAM

Violina Devi

Assistant Professor
Department of Political Science
Nirmal Haloi College, Patacharkuchi

Abstract

This paper tries to highlight the unemployment which is a serious problem in Assam. The issue that is impeding the economy due to unemployment. The unemployment rate is higher for young people with education. Human development is impacted by unemployment, which also has an impact on health, education, and living standards. A statistical method used to measure social and economic aspects of human development.

Keywords: *Human development, Unemployment, Education, Health, Standard of living.*

Introduction

One of the largest issues facing society today is unemployment. It has an impact on our society in ways like poverty, immigration, migration, and the waste of human resources that slow down economic growth. The unemployment rate in Assam is rising daily. There is unemployment in both rural and urban parts of Assam. Human development is negatively impacted by unemployment. Private spending on a range of topics important to human development is reduced by unemployment. A person's capacity for increased independence and the realization of their rights is defined as "Human development". Due to unemployment, individuals experience financial difficulties when they are employed, which can lead to frustration and attempts at suicide In emerging nations such as India, the

belief is that education benefits people by enhancing their knowledge and increasing their labour market productivity. India has rural unemployment rates of 17.4% and 13.6% for men and women, respectively. People are moving from rural to metropolitan areas as a result of unemployment. The state of Assam has a 7.69% unemployment rate in 2023. Since human development encompasses all aspects of development, higher unemployment rates have an impact on human development.

Research Objective:

- i) To discuss about the meaning of Human development.
- ii) To examine the causes of unemployment.

Methodology:

This research paper mainly based on the secondary sources. The data was collected from the secondary data source like article, Newspapers, journal, thesis and other various sources.

Meaning of Human Development:

Human development is characterized as an increase in human potential and a broadening of options. an expansion of liberty and the realization of human rights. Human rights should be embraced by human development Socio-economic-political liberties.

"The basic objective of development is to create an enabling environment for people to enjoy long, healthy, and creative lives, "according to the inaugural UNDP human development report, which was published in 1990. Anyone who defines development in terms of human welfare is putting people first, which is a prerequisite for true progress. Human development is the term to be applied to this people-centered perspective on growth. Paistani economist Mabbul-ul-Haq considered four essential pillars of human development which are -

- i) Equality
- ii) Sustainability
- iii) Productivity
- iv) Empowerment

Human development also have three basic indicators which are-

- i) Longevity
- ii) Knowledge
- iii) A decent standard of living.

Out of 191 countries, India was placed 132nd in the most recent human development assessment. 2019 saw India's HDI ranking at position 131, whereas 2018 had it at 130. The report on human development in India is declining daily. Many factors, including inequality, insufficient access to healthcare and education, population growth, and-perhaps most importantly-unemployment, can be attributed to this low rating.

Causes of Unemployment :

When an individual actively seeks employment but is unsuccessful in doing so, they are considered unemployed. An indicator of the state of the economy is frequently unemployment. A common way to calculate unemployment is to divide the total number of jobless persons by the total number of people in the labour force. This is known as the unemployment rate. In India, the unemployment rate has been rising in both rural and urban areas during the past few years. This has slowed down the economy's growth and impeded its expansion. Principally, these are

- i) For the past few decades, the population has been growing at an ever-increasing rate. There are far more people in the nation than there are jobs available, particularly among the youth. This leads to a state of unemployment inside the economy.
- ii) A major contributing factor to unemployment is poverty and illiteracy, as fewer individuals are educated and literate. They don't have the skills needed for jobs because of their poor income and way of living.
- iii) The primary causes of unemployment are a lack of state assistance, complicated laws, and weak market, financial, and infrastructure connections to small businesses or cottage industries, which renders such ventures unprofitable due to expenses and compliance issues.
- iv) Agricultural labourers are another source of joblessness. Workers in the agriculture industry are only hired for a specific length of time and are unemployed during other seasons of the year.

Impact of Unemployment:

People's lives are impacted by unemployment. It leads to the issue of poverty, which is detrimental to national economic growth and human development. Due to unemployment, young individuals prefer to engage in improper and criminal activities in order to make money. These factors are the cause of the nation's rising crime rate. People who are unemployed often become hooked to drugs and alcohol or make suicide attempts, which drains the nation's human resources.

Suggestion:

The following are the suggestions made in order to reduce the problem of unemployment and to improve the status of workers-

- i) Youth without jobs can find employment in the industrial and service sectors by receiving sufficient training, both in-person and online.
- ii) Government investment should be expanded, and the agriculture sector should be more diversified. This will boost productivity while lowering unemployment.
- iii) A stronger and more sustained expansion in the services sector can raise the living standards of the populace and provide more job possibilities for highly qualified individuals.

Conclusion:

One of the biggest issues facing society is unemployment. The government implements a number of initiatives, such as PMKY, MNREGA, IRDP JRY, etc., to lower unemployment. In Assam, the state of human development is far from ideal; the majority of the population-roughly 80%-lives in rural areas and is mostly dependent on agriculture. The process of enhancing the standard of living and financial security of individuals residing in somewhat remote and sparsely inhabited regions is commonly referred to as rural development. Although socioeconomic factors have a significant part in defining the state's degree of human development, higher levels of development are determined to be the result of cumulative advantages that the state receives from investments made in the social sector.

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REMITTANCES AND HUMAN DEVELOPMENT IN INDIA : A REVIEW OF LITERATURE

Yeasmina Begum

Assistant Professor

Department of Economics

M. N. C. Balika Mahavidyalaya, Nalbari

Abstract

Remittances are essentially a transfer of money from emigrants to their families or other people in their home country as payment or gift. Cross country analysis and household level survey suggest that remittances lead to reduce poverty in the countries of origin and increased in investment on health, education and small businesses. The HDI is the geometric mean of normalized indices for each of the three dimensions. According to Human Development Report 2021-22, Human Development Index (HDI) rank of India is 132. Remittances have become a major source of external development financing in low-income countries, providing income for investment, insurance and capital accumulation.

Keywords: *Remittances, Human development, Migration*

Introduction

Remittances are essentially a transfer of money from emigrants to their families or other people in their home country as payment or gift (Jijin et al., 2022). Cross country analysis and household level survey suggested that remittances reduces poverty in the countries of origin and increased in investment on health, education and small businesses (Shera & Meyer, 2013). India is the largest recipient of international remittances among the world (Tumbe, 2011). According to UNDP Reports, Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a

long and healthy life, being knowledgeable and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. According to Human Development Report 2021-22, Human Development Index (HDI) rank of India is 132. Remittances have become a major source of external development financing real estate development in low-income countries, providing income for investment, insurance and capital accumulation (Mahapatro, 2017). International migration is possible benefits low-income countries through increased remittances from international migrants (Adenutsi, 2009). For India, remittances have been a significant source of outside funding. The Indian diaspora is present on every continent in the world. Out of the 183 nations in the world, 180 have non-resident Indians (NRIs) registered with the Ministry of Overseas Indian Affairs. From barely two in Lebanon to about a million in the USA, the numbers have fluctuated. India's diaspora, estimated at over 30 million, is second only to the Chinese. Over time, the influx of remittances has increased due to the increasing number of Indian migrants. According to data in this respect, remittance flows to the Indian economy saw a notable increase in the post-reform period starting in 1991, despite the fact that they remained relatively stable during the 1980s.

Literature Review

Using 2014 annual cross-sectional data from 100 developing countries such as Afghanistan, Pakistan, Turkey, Bangladesh, Iraq, and China. The results show that there is Positive and non-significant relationship between remittances and human development in each selected region developing countries (Bibi & Ali, 2021).

The amount of remittances is increasing direct health expenditure per capita and total health expenditure per capita and reduce malnutrition rates, food depth deficiency, stunting and infant mortality. Remittances also increased school attendance rates, school completion rates, and private schools registration. To check the robustness, this article studies the whole thing The impact of remittances on the human development index (HDI) and shows remittances increase HDI. Another contribution of this paper shows the gender-specific impacts of remittances. Even though there isn't differences in the impact of remittances on the health of boys and girls, remittances increase investment in girls' education more in boys. Additionally, remittances reduce women's labor participation rate but does not affect men's labor force participation rate (Azizi, 2018).

Migration contributes to poverty reduction, as has been predicted and demonstrated in other countries. Research provides more evidence that families

receiving remittances can increase their income conditions for human capital formation. The majority of households spend remittances on food items. The ratio of expenditure for various items compared to the amount collected from remittances suggests that remittance-receiving households on average spend less (0.24%) domestic remittances and 2% international household transfers respectively than the non-receiving remittances households (Parida et al., 2015).

Remittances have been shown to protect people against income and shocks life cycle risk. They can also significantly increase income and improve living conditions, education, health and welfare in the community of origin (Haas, 2007).

Remittances are important and have a positive impact on human development. Total Factor Productivity (TFP) growth, although significant, has a negative impact on human health. However, the interaction effect between remittances and TFP growth is important and has a positive impact on human development (Dzeha, 2018)

Remittances have a greater effect on lowering infant mortality in high-income nations than they do on raising school enrollment in low-income nations. All regions benefit from remittances' reduction of infant mortality, with South Asia benefiting more from them than Latin America. For every region, remittances have a favorable effect on school enrollment. Sub-Saharan Africa has less influence than Latin America, in comparison comparison (Ahmad, 2019).

Remittances show a substantial and favorable impact on human development. This indicates that as remittance inflows increase, South Asia's human development will improve. It shows that a 1% increase in remittances will result in a 0.0465% improvement in a nation's human development. In a similar vein, life expectancy raises HDI (Sahoo et al., 2020)

By evaluating the impact of remittances on human development, this paper adds to the conversations around the relationship between migration and development. They accomplish this by using a quantitative method in the first place, and then expanding on the results of our study within a larger theoretical and policy framework. They quantify the effect of remittances on human development using OLS and compare it to the effects of official development assistance (ODA) and foreign direct investment (FDI). The results show that remittances are a useful tool for promoting human development in middle-income nations, particularly in the medium term, and that they have a positive link with the degree of human development (Ustubici & Irdam, 2012).

Migration affects human development in both positive and negative ways. Positively, it generates revenue that could lead to an increase in living standards or not. It may also lead to the development of new abilities and an increase in

social standing. The drawbacks of migrating include the possibility of harm, exposure to potentially fatal illnesses, loneliness, and heavier job demands for those who remain behind. The net effect of migration is determined by the sum of these benefits and drawbacks; for those with greater connections and education, migration can lead to a quicker accumulation of wealth and a quicker escape from poverty (Deshingkar & Akter, 2009).

Conclusion

It has been studied how remittances affect human development in poor nations. Owing to the lack of consistent evidence in theory and prior research regarding many facets of development and remittances, the basis of this study was a pluralistic perspective that took into account both positive and negative effects. In contrast to most prior research on the topic, the HDI was utilized as the dependent variable, bringing a wider perspective to the analysis by accounting for economic growth, health, and education. In future research it would be interesting adding more dimensions to the analysis when examining remittances effect on development. Adding more variables would allow an even more diverse index to be constructed.

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IMPACT OF HUMAN PSYCHOLOGY ON HUMAN DEVELOPMENT

Neha Bharali¹

Assistant Professor
Department of Psychology
NEF College, Lokhra

Neha Singh²

Counseling Psychologist
Adarsha Vidyalaya

Abstract

Psychology is the scientific study of mind and human behaviour. When we talk of human development it is essential to understand human functioning and cognitive development. Human development encompasses not only socio-economic conditions but psychological health as well. Development is dependent upon one major aspect of people's lives, that is; motivation. Behind any action that one undertakes there is a certain motive. The deficiency that people have drives them to action and they engage in goal directed behaviour. Even motivation alone is not sufficient to understand human development. There is a complex blend of societal interactions that determines our standard of living. The cultural impact is very apparent in terms of human development. In this paper, we have tried to explore the patterns of human interactions that impact development. It is essential to understand that development is determined by the individual's perceptions of his situations. But at the same time, it is also influenced by what society has conditioned him to believe. Mental fitness is equally important to progress and have a decent standard of life. Nothing is possible without having the capability to understand who we are and what we are capable of. The opportunities we have, largely determine our extent of growth. But it is also our intrinsic motivation that

determines how capable we become. Thus, this paper tries to touch upon the various facets of human development considering what influences and maintains human behaviour.

Keywords: *Human development, Motivation, Optimal functioning, Social influences, Opportunities*

Introduction

The United Nations Development Programme defines human development as "the process of enlarging people's choices", said choices allowing them to "lead a long and healthy life, to be educated, to enjoy a decent standard of living", as well as "political freedom, other guaranteed human rights and various ingredients of self-respect". Following along the lines of UNDP's definition, it is safe to state that human development is manifold. It encompasses the domains of social, economic, physical, mental and emotional well-being. In a broader sense of the term, human development indicates towards the optimal functioning of a nation's population. Regardless, development and wellbeing are two interrelated terms.

Development involves living a life of one's choices. The standard of living comes not only from having improved opportunities but from psychological wealth as well. Understanding human behaviours and patterns of change is crucial to understand human development from a psychological perspective. Psychologist Wilhelm Wundt emphasised on the method of introspection or self-observation to understand one's thoughts, feelings, ideas and perceptions. Development per se, is to some extent subjective. As an individual's perceived sense of growth meets the societal requirements, one can/is said to be developed. To go up the social ladder and to be able to enlarge life choices, motivation plays a pivotal role. The basis of any behaviour is motivation. The drive or the need to engage in a particular behaviour stems from certain deficits. One of the most popular theories of motivation was put forward by Abraham Maslow (belonging to the humanistic tradition), famously called Maslow's Hierarchy of Needs. It states that every individual has the innate potential to grow and move towards achieving self-actualization. This theory states that as our lower level or deficiency needs are met, one can move towards self-actualization. However, for most of us, self-fulfilment needs are unmet. To even move upwards, human beings require motivation. Once basic physiological needs are met, we are innately or very often even extrinsically motivated to fulfil higher level needs. This motivation or the desire to achieve belongingness and esteem expands our freedom. However, in

any society, particularly if we talk of India, there is still a huge developmental gap among the different strata of society. Part of this is because of lack of opportunities to move upwards. Another reason can also be that most often people learn to be satisfied in whatever little that they have. As such most people's motivation often goes down and they often cannot move towards higher level needs.

The quality of people's life is a major factor in understanding development. Both nature and nurture are essential in this regard. Having the proper environment but not the required cognitive growth can hinder development and vice versa. Emotional and mental hygiene is possible only in a nourishing environment. Many renowned psychologists have focused on individual experiences and nourishment as the basis for determining our later lives. Lev Vygotsky's sociocultural theory asserts that cognitive development is guided by our interaction with the social world. We learn as taught by the knowledgeable other. The most important concept put forward by Vygotsky is the Zone of Proximal development which signifies the gap between an individual's actual development and potential development. It includes what he is not capable of as yet but will eventually be competent enough upon guidance. Thus, the social influences we have determines our level of development. This motivates us to satisfy our needs. Man is a product of his social cognition. Our efforts in understanding and dealing with societal influences signifies our experiences of freedom. One of the many evils that Indian society still faces, is the discriminatory attitudes that people have towards different communities. As such most people are often barred from having opportunities for growth. George Kelly states that our reality is what we perceive and that our personal constructs by which we interpret events and experiences predicts our behaviour. From a more positive perspective, our interpretation of societal practices, can therefore lead to social facilitation thereby allowing the person to enhance his potential. Additionally, development entails our emotional and mental well-being. The world today is a difficult place to live in. Most people do not have jobs and for those who do are not able to sustain them. In an ever-growing economy, mental health is bound to deteriorate given the fact that people are so engulfed upon fulfilling their needs that they seldom consider their health as a priority. People have become money oriented and relate money to happiness. But true happiness lies in satisfaction with oneself. Being able to regulate one's emotions is crucial to optimal functioning. Stress has become a silent killer. Mostly, the youth engage in negative health behaviours often hampering their capabilities. They either neglect their true potential or are unable to fulfil them. For optimal functioning, it is a dire necessity to encourage health enhancing behaviours.

Resilience is also a key factor in determining development. In simple terms it is the ability to "bounce back" from any negative or unfortunate event or situation.

Patently, economic conditions or more generally life situations do not remain same at all times. Ups and downs are a normal happening. But to fight back from such pitfalls is decisive in growth and human development. Culture also impacts development. Compared to the western society of individualism, the collectivistic nature of Indian society can also be a reason as to why India ranks 132nd in the Human Development Index (HDI) Index, 2023. Conforming to social norms is a major reason why most people, particularly those coming from lower socio-economic backgrounds are unable to satisfy even some of their most basic needs. It is often seen, that the same profession runs through generations of a family or within a particular community. As such they often lack the opportunities to rise above their situation. But even so, most people have been able to advance and realise their potential. It is worth mentioning people like Gauri Sawant, a transgender activist who has become globally famous for her work towards the transgender community.

But the very fact that a few from the rest who have the similar living conditions are able to strive while others cannot is because of their personality as well. Personality is dynamic. It evolves as we engage in social interactions. Some people are more ambitious while others are more laid back and settle in however little that they have. They are content in having the most basic needs like the need for food and shelter fulfilled. While there are others, who strive for more. They are intrinsically motivated to achieve more and realise their actual potential. This eventually leads to a healthy and decent life. The need for power and affiliation is also a motivating factor towards development. Usually, development is understood in terms of income. With money comes power and self-esteem. Thus, social status is what most people strive for. Having a powerful influence over others often gives the person a sense of superiority and security. This motivates human behaviour.

Conclusion

To say the least, human behaviour is complicated. There is not one single factor that motivates people, a plethora of events together determine human action. Humans are a product of societal interactions. What we have been conditioned to determines how well our conduct is. Development is not one sided. When we talk of human development, we are talking about the totality of human interactions and experiences. To be truly developed, one must consider all; social, economic, physical as well as psychological domains. A gap in any one domain will ultimately limit the person's quality of life. We cannot move away from society. So, to become fully functioning individuals it is essential that we understand our circumstances

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and try to move towards positive growth. Thus, with changing times it is necessary to shift our focus from the traditional notion of equating development to increasing income and centre our attention on all aspects of socio-psychological aspects that make up human life. The quality of life the people of a nation enjoy, is largely determined by the internal and external conditions that make up the individual.

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A STUDY ON IMPACT OF EDUCATION IN ANCIENT INDIA IN HUMAN DEVELOPMENT

Kabita Bora

M.A.B.Ed (Tezpur University)

Introduction

Human development is the ongoing process of development and transformation that people experience as they become older and engage with their environment on a social, emotional, cognitive, behavioral, and physical level. From the beginning of life through adulthood, it comprises many facets of an individual's existence and is influenced by a variety of genetic, environmental, social, cultural, and economic factors. Determining how people develop in these various domains and how these developmental processes affect their lives is a goal of human development theory and their studies. It is crucial to keep in mind that understanding and conceptualizations of human development have changed throughout the years while looking at the history of human development. Shifted societies and cultures have had numerous perspectives on how people develop and grow throughout civilization.

Education is essential to human development because it gives people structured chances to learn the knowledge, abilities, morals, and values they need to advance and contribute to society. The goal of the educational system is to support students' moral, intellectual, social, and emotional growth. It fosters the development of ethical reasoning, communication skills, and critical thinking. Ancient perspectives on human development, it's essential to recognize that these views were often rooted in cultural, religious, or philosophical contexts and were not based on modern scientific understanding. Our contemporary understanding of human development has evolved significantly through scientific research and interdisciplinary studies, offering a more comprehensive and evidence-based view of the lifelong process of growth and maturation.

The study of human development has evolved to a more organized, academic field in the modern age. Through their theories and research, influential theorists like Sigmund Freud, Erik Erikson, Jean Piaget, Lev Vygotsky, and others have

created major contributions to our understanding of human development which promotes holistic growth as well as offering the best learning opportunities. While Erikson's psychosocial theory highlighted the social and interpersonal aspects of human development, Freud's psychoanalytic theory focused on the significance of subconscious impulses and conflicts. The socio cultural perspective of Vygotsky highlighted the impact of social interactions on development, whereas Piaget's cognitive development theory concentrated on intellectual development.

After all the discussion we can say that, human development is a dynamic, lifelong process, influenced by a complex interaction of genetic, environmental, cultural, social and psychological factors. An understanding of human development is essential to tailor interventions, education, policies and support systems to improve the well-being of individuals and help them reach their full potential at every stage of life.

Objective of the study

1. To identify the relationship between the human development and education.
2. To understand about the impact of education in human development in ancient India

Sources of data collection

In the present study data are mainly based on secondary data gathered from the various online journal and website regarding the history of the human development from the ancient time and its relation with the education.

Analysis of the study

Relationship between education and human development

Education and human development are intricately connected and have a symbiotic relationship. Education is a fundamental tool for promoting and facilitating human development, and human development, in turn, influences the nature and outcomes of education.

Education as a Facilitator of Human Development:

Education plays a pivotal role in fostering human development by providing individuals with knowledge, skills, values, and attitudes necessary for personal growth and societal contribution. It encompasses formal education (schooling), informal learning (family, community, and life experiences), and non-formal education (workshops, training programs, etc.).

- **Cognitive Development:** Education enhances cognitive abilities, critical thinking, problem-solving skills, and intellectual growth, contributing to a person's overall intelligence and mental capabilities.
- **Social and Emotional Development:** Schools and educational settings provide opportunities for social interaction, emotional regulation, empathy, and understanding, promoting social and emotional development.
- **Physical Development:** Physical education and health education contribute to a person's physical well-being and development.
- **Moral and Ethical Development:** Education instills values, morals, ethics, and a sense of social responsibility, shaping individuals into responsible and ethical members of society.

Human Development Influencing Education:

Human development theories and concepts guide educational practices and policies, ensuring that education are tailored to meet the evolving needs and capacities of individuals across different stages of life.

- **Developmental Psychology:** Understanding how individuals grow and change throughout their lifespan helps educators design appropriate learning experiences for different age groups.
- **Socioeconomic Factors:** Socioeconomic development affects educational access and quality, determining the resources available for educational institutions and the opportunities accessible to learners.
- **Cultural and Environmental Factors:** The cultural and environmental contexts in which individuals grow influence their learning styles, preferences, and educational priorities, shaping the design of educational programs.
- **Technological Advancements:** Technological development impacts the methods and tools used in education, necessitating changes in teaching approaches to align with the digital age.

Lifelong Learning and Continuous Development:

The concept of lifelong learning is central to both education and human development. Continuous learning and skill development are essential for adapting to a rapidly changing world, enhancing employability, and ensuring personal growth and fulfillment throughout one's life.

- **Continued Education:** Ongoing education and skill development enable individuals to stay updated with advancements in their fields, contributing to their professional and personal growth.
- **Adaptability and Resilience:** Education fosters adaptability and resilience, crucial qualities for navigating life's challenges and uncertainties.

In conclusion, education acts as a catalyst for human development, enhancing individuals' capabilities, while the different aspects of human development guide the design and implementation of educational systems to cater to diverse needs and stages of life. A holistic and integrated approach that considers the reciprocal relationship between education and human development is vital for fostering a society that thrives intellectually, socially, emotionally, and ethically.

Impact of education in the process of human development in ancient India

In ancient India, human development and education were closely intertwined with religious and philosophical traditions. Education was highly valued and considered essential for personal growth and societal well-being. The caste system played a significant role in the distribution of educational opportunities, with Brahmins (priests and scholars) having the highest access to education.

The ancient Indian education system was known as the Gurukul system, where students lived with their teachers (gurus) and learned not only academic subjects but also moral and ethical values. The curriculum included subjects such as mathematics, astronomy, medicine, philosophy, and the Vedas, the ancient sacred texts of Hinduism. One of the most influential ancient Indian texts related to education is the Arthashastra, attributed to Kautilya (Chanakya), which provides insights into statecraft, economics, and education during that time. Religious centers and universities like Nalanda and Taxila were renowned for their scholarship and attracted students from various parts of the world, contributing to the dissemination of knowledge.

Human development in ancient India was closely linked to education, spirituality, and social structures. Here's an overview of this relationship:

1. Gurukul System: Education in ancient India was primarily imparted through the Gurukul system, where students lived with their teachers (gurus). This system fostered holistic development, emphasizing not only academic knowledge but also moral and ethical values. It provided a structured environment for the intellectual, emotional, and social growth of individuals. The Gurukul system in ancient India

was an influential educational system that had a significant impact on human development. Here's how the Gurukul system related to human development:

- **Holistic Development:** The Gurukul system focused on holistic human development, not just academic learning. Students lived with their gurus (teachers) and learned not only subjects like mathematics, philosophy, and arts but also moral and ethical values. This approach aimed to nurture well-rounded individuals capable of contributing positively to society.
- **Individualized Learning:** In a Gurukul education was personalized to the student's abilities and needs. Gurus assessed the strengths and weaknesses of each student and tailored their education accordingly. This individualized approach promoted the development of each student's unique talents and potential.
- **Character Building:** The Gurukul system placed a strong emphasis on character building and ethical development. Gurus served as role models and mentors, guiding students not only in academic pursuits but also in the cultivation of virtues like honesty, humility, and compassion. This moral and ethical education was considered essential for a well-rounded individual.
- **Spiritual Growth:** The Gurukul system integrated spiritual education with academic learning. Students often studied ancient scriptures and philosophy, which encouraged self-reflection and spiritual growth. The pursuit of knowledge was seen as a path to self-realization and enlightenment.
- **Community and Social Skills:** Living in a Gurukul fostered social skills and a sense of community among students. They learned to interact with peers and elders, promoting social development and a sense of responsibility toward others.
- **Physical Well-being:** Education in Gurukulas included physical fitness and often incorporated practices like yoga and martial arts. This focus on physical well-being contributed to a balanced approach to human development.
- **Cultural Preservation:** The Gurukul system played a crucial role in preserving and transmitting ancient Indian culture, traditions, and knowledge. This cultural preservation was integral to the identity and development of individuals within the society.
- **Life Skills:** Beyond academic knowledge, students in Gurukul learned practical life skills, including agriculture, craftsmanship, and various vocational skills. This practical education prepared them for diverse roles in society.

Overall, the Gurukul system in ancient India was designed to nurture not just scholars but well-rounded individuals who could lead meaningful and balanced lives. It emphasized intellectual, moral, spiritual, and physical development, contributing to the holistic growth of individuals within the social and cultural context of ancient India.

2. Spiritual Development: Ancient India placed a strong emphasis on spirituality and self-realization. Education often included the study of scriptures like the Vedas and Upanishads, which aimed at understanding the self and the universe. The pursuit of knowledge was seen as a means to attain spiritual enlightenment and self-fulfillment. Spiritual development in ancient India played a significant role in human development by contributing to individuals' overall well-being and personal growth. Here's how spiritual development helped in human development: Spiritual development in ancient India played a significant role in human development by contributing to individuals' overall well-being and personal growth. Here's how spiritual development helped in human development:

- **Inner Peace and Well-being:** Spiritual practices, such as meditation and yoga, were integral to ancient Indian culture. They were aimed at achieving inner peace, reducing stress, and enhancing emotional well-being. These practices helped individuals develop resilience and cope with life's challenges.
- **Self-Discovery:** Spiritual teachings encouraged self-reflection and self-discovery. They encouraged individuals to explore the depths of their own consciousness, leading to a better understanding of their thoughts, emotions, and motivations. This self-awareness was fundamental to personal growth.
- **Moral and Ethical Values:** Spirituality often instilled moral and ethical values, emphasizing compassion, kindness, and empathy. These values guided individuals in their interactions with others and promoted positive relationships, contributing to their personal development as responsible and ethical members of society.
- **Sense of Purpose:** Spiritual beliefs provided individuals with a sense of purpose and meaning in life. Understanding their place in the universe and their connection to something greater than themselves gave them a framework for personal growth and self-fulfillment.
- **Emotional Intelligence:** Spiritual development often involved cultivating emotional intelligence, which is the ability to recognize, understand, and

manage one's own emotions and those of others. This skill was essential for healthy relationships and personal development.

- **Resilience and Coping Skills:** Spiritual practices taught individuals to accept life's ups and downs with equanimity. This resilience and the ability to cope with adversity were essential for personal development and mental well-being.
- **Altruism and Service:** Many spiritual traditions in ancient India emphasized the importance of selfless service (*seva*) and helping others. Engaging in acts of kindness and service not only contributed to the betterment of society but also promoted personal growth by fostering a sense of purpose and fulfillment.
- **Stress Reduction:** Spiritual practices, such as meditation and mindfulness, were effective tools for reducing stress and anxiety. By promoting mental and emotional balance, they contributed to overall human development.
- **Transcendence and Self-Realization:** Some spiritual paths in ancient India aimed at transcending the ego and realizing one's true nature. This profound self-realization was seen as the ultimate goal of human life and contributed to a deeper understanding of oneself and the world.
- **Harmony with Nature:** Many spiritual philosophies in ancient India emphasized the interconnectedness of all life and the importance of living in harmony with nature. This ecological consciousness encouraged responsible stewardship of the environment and a deeper sense of connection to the natural world.

Overall, spiritual development in ancient India played a crucial role in human development by promoting emotional well-being, ethical values, self-awareness, and a sense of purpose. It provided individuals with tools and practices to navigate life's challenges and fostered a holistic approach to personal growth and fulfillment.

3. Social Hierarchy: The caste system played a significant role in determining access to education and opportunities for human development. Brahmins, the priestly caste, had the highest access to education, while lower castes and women faced restrictions and limited educational opportunities. The caste-based hierarchy influenced social and educational inequalities. The social hierarchy in ancient India, often associated with the caste system, had a complex impact on human development and education. While it had certain benefits in terms of organizing society, it also posed challenges and limitations. Here's how the social hierarchy in ancient India both helped and hindered human development and education:

Benefits and Contributions to Human Development and Education:

- **Specialization and Division of Labor:** The caste system divided society into different occupational groups. This division of labor allowed individuals to specialize in specific skills and trades. It contributed to the development of expertise in various fields, including agriculture, craftsmanship, and intellectual pursuits, fostering educational and economic growth.
- **Preservation of Knowledge:** Each caste often had specific knowledge and traditions associated with its occupation. This helped preserve and transmit valuable knowledge and skills from generation to generation. For example, Brahmins were responsible for the preservation and teaching of religious and philosophical texts.
- **Order and Social Stability:** The caste system provided a structured and orderly society, which contributed to stability and social cohesion. This stability was conducive to education and human development, as people could focus on their pursuits without constant upheaval.
- **Influence on Education:** The caste system influenced educational opportunities. Brahmins, as the highest caste, had the most access to education, contributing to the development of intellectual and spiritual knowledge. This knowledge was often shared with other castes, furthering education in society.

Challenges and Limitations to Human Development and Education:

- **Social Inequality:** The caste system perpetuated social inequality by restricting access to education and opportunities based on birth. This inequality hindered the potential for human development and limited educational access for lower-caste individuals..
- **Gender Disparities:** Alongside caste, gender played a significant role in access to education. Women, regardless of their caste, often had limited educational opportunities. This gender bias hindered the development of half the population.
- **Rigid Occupational Roles:** The caste system rigidly assigned occupational roles based on birth, leaving little room for individuals to explore other interests or talents. This limited personal development by confining individuals to predetermined roles.
- **Stigmatization and Social Pressure:** Individuals in lower castes often faced stigmatization and social pressure, which could affect their self-esteem and mental well-being, thereby hindering overall development.

The social hierarchy in ancient India had both positive and negative effects on human development and education. While it contributed to specialization, knowledge preservation, and social stability, it also perpetuated inequality, discrimination, and limitations in access to education. The impact of the caste system on human development and education was complex and varied depending on an individual's caste and gender.

4. Knowledge Centers: Ancient India was home to renowned centers of learning, such as Nalanda and Taxila, which attracted scholars and students from various parts of the world. These institutions contributed to the advancement of knowledge and the exchange of ideas, fostering intellectual growth. Knowledge centers in ancient India, such as Nalanda and Taxila, played a pivotal role in human development and education. These centers were renowned for their contributions to learning, and they had a profound impact on individuals and society. Here's how knowledge centers in ancient India helped in human development and education:

- **Dissemination of Knowledge:** Knowledge centers served as hubs for the exchange of ideas and the dissemination of knowledge. Scholars, teachers, and students from various regions and backgrounds came together to share and learn, leading to the enrichment of intellectual and cultural traditions.
- **Diverse Curriculum:** These centers offered a wide range of subjects, including philosophy, mathematics, astronomy, medicine, literature, and the arts. This diverse curriculum allowed students to pursue their interests and talents, fostering well-rounded education and personal development.
- **Access to Expertise:** Students had access to renowned scholars and teachers who were experts in their respective fields. Interacting with these experts facilitated in-depth learning and skill development, contributing to the intellectual growth of individuals.
- **Cultural Exchange:** Knowledge centers attracted students and scholars from different parts of the world, promoting cultural exchange and fostering a cosmopolitan atmosphere. Exposure to diverse cultures and viewpoints enriched students' perspectives and contributed to their personal development.
- **Research and Innovation:** These centers encouraged research and innovation. Scholars engaged in research activities, leading to advancements in various fields. This culture of inquiry and discovery encouraged critical thinking and problem-solving skills among students.

- **Spiritual and Ethical Education:** Many knowledge centers incorporated the study of philosophical and spiritual texts, fostering not only intellectual growth but also moral and ethical development. These institutions recognized the importance of holistic education.
- **Networking and Social Skills:** Students at knowledge centers had the opportunity to network with peers, scholars, and influential individuals. These social interactions helped develop interpersonal skills, broaden their social horizons, and prepare them for leadership roles in society.
- **Preservation of Texts:** Knowledge centers played a crucial role in the preservation of ancient texts and manuscripts. The compilation and preservation of knowledge contributed to the continuity of cultural and educational traditions.
- **Leadership Development:** Many of India's great leaders, thinkers, and scholars emerged from these knowledge centers. The education and values instilled in students at these institutions often led to the development of visionary leaders who made significant contributions to society.
- **Legacy and Inspiration:** The legacy of knowledge centers in ancient India continues to inspire educational institutions worldwide. Their model of holistic education, emphasis on critical thinking, and commitment to excellence has left a lasting impact on the field of education.

So, knowledge centers in ancient India played a crucial role in human development and education by fostering intellectual growth, cultural exchange, research, ethical education, and leadership development. These institutions served as beacons of learning and continue to be celebrated for their contributions to the development of individuals and the advancement of knowledge.

5. Holistic Education: Education in ancient India was not limited to academic subjects. It encompassed physical fitness, arts, music, ethics, and philosophy. The goal was to Holistic education in ancient India was a comprehensive approach to learning that aimed to nurture the complete development of an individual. physically, mentally, emotionally, socially, and spiritually. This holistic approach had a profound impact on human development and education in several ways:

- **Moral and Ethical Values:** Ancient Indian holistic education placed a strong emphasis on moral and ethical values. It sought to cultivate virtues such as compassion, honesty, empathy, and integrity, fostering a sense of responsibility and ethical behavior in individuals. This moral grounding was seen as essential for personal and societal well-being.

- **Spiritual Growth:** Holistic education integrated spiritual development into the learning process. Students were exposed to spiritual teachings, meditation, and practice that encouraged self-reflection and self-realization. This spiritual dimension aimed at helping individuals understand their inner selves, find purpose in life, and attain a deeper level of consciousness.
- **Physical Well-being:** Physical education was an integral part of holistic education in ancient India. Activities like yoga, martial arts, and physical exercises were incorporated into the curriculum. Physical well-being was considered essential for overall health and mental clarity, contributing to personal development.
- **Cultural and Artistic Expression:** The curriculum of holistic education encompassed cultural and artistic pursuits such as music, dance, literature, and the arts. Encouraging creativity and artistic expression contributed to a well-rounded education and allowed individuals to explore and develop their talents.
- **Interpersonal Skills:** Holistic education emphasized the importance of healthy relationships and effective communication. Students learned to interact with peers, teachers, and the community, developing social skills, empathy, and a sense of responsibility towards others.
- **Critical Thinking and Problem Solving:** Holistic education encouraged critical thinking and problem-solving skills. Students were encouraged to question, analyze, and find solutions to complex issues, fostering intellectual development and adaptability.
- **Community and Environmental Awareness:** Students were taught about their connection to the community and the environment. This awareness encouraged a sense of responsibility towards the larger world, promoting social and environmental consciousness.
- **Personal Growth and Self-awareness:** Holistic education provided opportunities for personal growth and self-awareness. Students were encouraged to explore their interests, passions, and potential, leading to greater self-confidence and a sense of purpose.
- **Lifelong Learning:** Holistic education instilled a love for learning and a curiosity about the world. It encouraged a lifelong commitment to intellectual, emotional, and spiritual growth, fostering a mindset of continuous learning and self-improvement.

Over all we can say that, the holistic education in ancient India contributed to human development and education by nurturing the physical, intellectual,

emotional, social, and spiritual dimensions of individuals. It aimed to create well-rounded, morally grounded, and spiritually aware individuals who could make positive contributions to society while leading fulfilling lives. This holistic approach continues to inspire modern educational philosophies that recognize the importance of a multifaceted approach to learning and personal development.

6. Transmission of Knowledge: The oral tradition played a crucial role in the transmission of knowledge. Many ancient texts, including the epics like the Mahabharata and Ramayana, were passed down orally before being documented in written form. This ensured the preservation and dissemination of knowledge. The transmission of knowledge in ancient India played a vital role in human development and education by facilitating the preservation, dissemination, and enrichment of information, culture, and wisdom. Here's how the transmission of knowledge in ancient India helped in human development and education:

- **Preservation of Ancient Wisdom:** India has a rich tradition of oral transmission of knowledge, allowing ancient texts and teachings to be passed down through generations. This preservation of ancient wisdom formed the foundation upon which later knowledge was built, providing continuity and cultural identity.
- **Sanskrit Literature:** The use of Sanskrit as a literary and scholarly language allowed for the preservation of a vast body of knowledge. Sacred texts, epics, and scientific treatises were composed in Sanskrit, enabling scholars to access and study this wealth of information.
- **Scriptural and Philosophical Traditions:** Knowledge transmission in ancient India encompassed scriptural and philosophical traditions. Students learned from authoritative sources such as the Vedas, Upanishads, and other sacred texts, gaining insights into spirituality, ethics, and the nature of reality.
- **Centers of Learning:** Renowned centers of learning like Nalanda and Taxila served as hubs for knowledge transmission. Students from various regions and backgrounds gathered at these institutions, fostering cultural exchange and the sharing of diverse perspectives.
- **Mentorship and Apprenticeship:** Many knowledge-based professions, including medicine, art, and music, relied on mentorship and apprenticeship models. Experienced practitioners passed on their expertise to younger generations, ensuring the continuity of specialized knowledge.
- **Oral Tradition:** The oral transmission of knowledge was a fundamental aspect of ancient Indian culture. Epic poems like the Mahabharata and

Ramayana were recited and memorized, allowing for the preservation of historical, cultural, and moral narratives.

- **Interdisciplinary Learning:** Education in ancient India often involved a multidisciplinary approach, where students learned not only specific subjects but also their interconnectedness. This holistic approach contributed to well-rounded education and personal development.
- **Cultural and Artistic Transmission:** Ancient Indian knowledge transmission encompassed not only scholarly knowledge but also artistic and cultural traditions. Skills like classical music, dance, and crafts were handed down through generations, preserving cultural heritage.
- **Innovation and Adaptation:** Knowledge transmission encouraged innovation and adaptation. Students and scholars built upon existing knowledge, leading to advancements in various fields, including mathematics, astronomy, medicine, and philosophy.
- **Continuity of Cultural Values:** The transmission of knowledge also included the values, rituals, and customs that defined the cultural identity of ancient India. This continuity of cultural values contributed to social cohesion and a sense of belonging.

So, the transmission of knowledge in ancient India served as the cornerstone of human development and education. It preserved cultural heritage, facilitated interdisciplinary learning, nurtured ethical and moral values, and allowed for the enrichment of various fields of knowledge. This legacy continues to influence modern education and emphasizes the importance of preserving, disseminating, and building upon the wisdom of the past.

7. Role of Teachers: Gurus or teachers were highly respected figures in ancient Indian society. They not only imparted knowledge but also served as mentors and guides in the personal and moral development of their students. The role of teachers, often referred to as gurus, in ancient India was pivotal in human development and education. Teachers played a central and revered role in shaping the lives of their students and contributed significantly to their personal and intellectual growth. Here's how the role of teachers in ancient India helped in human development and education:

- **Moral and Ethical Guidance:** Teachers were not just instructors of academic subjects but also moral and ethical guides. They instilled values such as honesty, compassion, integrity, and respect for others in their students, contributing to their character development.

- **Personalized Education:** Teachers in ancient India recognized the individual strengths and weaknesses of their students. They provided personalized guidance and tailored instruction to help students reach their full potential, thereby promoting holistic development.
- **Transmission of Knowledge:** Gurus were responsible for transmitting not only academic knowledge but also cultural, spiritual, and philosophical wisdom. They passed on ancient scriptures, texts, and oral traditions, ensuring the preservation and dissemination of knowledge.
- **Spiritual Mentorship:** Many teachers in ancient India were spiritual guides as well. They guided students on spiritual paths, teaching them meditation, yoga, and philosophy. This spiritual mentorship contributed to students' inner growth and self-realization.
- **Encouragement and Support:** Teachers provided emotional support and encouragement to their students. They nurtured self-confidence and self-esteem, which were essential for students' overall development.
- **Cultural and Artistic Training:** Teachers played a crucial role in training students in various cultural and artistic disciplines, such as music, dance, painting, and sculpture. They passed down artistic traditions and encouraged creative expression.
- **Interdisciplinary Learning:** Teachers encouraged interdisciplinary learning by connecting various subjects and fields of knowledge. This approach fostered a holistic understanding of the world and promoted well-rounded education.
- **Legacy and Inspiration:** Many great leaders, scholars, and thinkers in ancient India were inspired by their teachers. The teachings and mentorship of gurus often led to the development of visionary individuals who made significant contributions to society.
- **Continuity of Traditions:** Teachers played a critical role in maintaining and passing on cultural and educational traditions. They ensured that ancient knowledge and practices were preserved and continued through generations.

So, the role of teachers in ancient India went beyond mere instruction; they were mentors, guides, and role models. Their contributions to the moral, intellectual, and spiritual development of their students were integral to the educational and personal growth of individuals in ancient Indian society. The legacy of teacher-student relationships in ancient India continues to inspire modern educational philosophies and underscores the importance of the teacher's role in shaping future generations.

Conclusion

In conclusion, the relationship between education and human development in ancient India was a deeply interconnected and holistic one. Education served as a catalyst for personal growth, moral and ethical development, and the transmission of cultural and spiritual wisdom. The Gurukul system, knowledge centers, spiritual practices, and the role of teachers all played vital roles in shaping individuals and society. However, this educational landscape was also marked by social hierarchies and gender disparities, which influenced access to education and opportunities for development.

Ancient India's emphasis on holistic education, the integration of spiritual and ethical values, and the nurturing of well-rounded individuals continues to inspire educational philosophies worldwide. The transmission of knowledge, mentorship by gurus, and the preservation of cultural traditions further enriched the educational experience of that era.

In today's context, the symbiotic relationship between education and human development remains relevant. Education continues to be a fundamental tool for fostering personal growth, cognitive development, social and emotional skills, and moral values. Moreover, the lessons learned from ancient India underscore the importance of a holistic approach to education, one that not only imparts knowledge but also nurtures the overall well-being of individuals, fostering a society that thrives intellectually, morally, and spiritually.

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IMPACT OF ENVIRONMENTAL CHANGES ON THE AGRICULTURAL DEVELOPMENT OF THE BODOS

Buddhadev Lahary

Ph.D. Research Scholar

Department of Bodo, Gauhati University

Abstract

This research aims to investigate the profound impact of environmental changes on the agricultural development of the Bodos, an indigenous group predominantly residing in the North-eastern region of India. The Bodos have traditionally practiced agriculture as their primary source of livelihood, and their socio-economic well-being is intricately linked with their agricultural activities. However, ongoing environmental changes, including climate change, deforestation, and land degradation, have begun to exert significant pressure on the agricultural practices of the Bodos. This paper delves into the ecological, socio-economic, and cultural dimensions of these changes and explores their implications for the agricultural development of the Bodos. To provide a comprehensive understanding of the issue, the study employs a combination of qualitative and quantitative research methods.

Keywords: *Agriculture, Climate change, Deforestation, Environmental change, Land degradation.*

Introduction

The Bodos are an ethnic group largely located in the North-eastern region of India, particularly in the states of Assam, and West Bengal, as well as in some parts of Nagaland, Meghalaya, Arunachal Pradesh, and Nepal. The renowned historian Suniti Kumar Chatterji opined that, the Bodos, who spread over the whole of the Brahmaputra valley and North Bengal as well as East Bengal, forming

a solid bloc in North-eastern India, were the most important Indo-Mongoloid people in Eastern India, and they form one of the main bases of the present-day population of these tracts(Chatterji, 1998). They have a rich and vibrant agricultural heritage as the foundation of their livelihood and culture.Indeed, the traditional agricultural life of the Bodos is not only a means of livelihood but also an integral part of their cultural identity.Their agriculture follows the seasonal rhythms of nature.They sow their crops during the monsoon season when the rains are abundant, and they harvest during the dry season. The timing of agricultural activities is closely aligned with the local climate and weather patterns. Furthermore, the Bodos have a deep respect for nature and strive to maintain a harmonious relationship with their surroundings. They typically avoid using chemical fertilizers and pesticides and rely on traditional, eco-friendly farming methods. This approach not only sustains the environment but also preserves the traditional knowledge passed down through generations in their society.

Objectives of the Study

- i) To assess the environmental changes affecting the agricultural practices of the Bodos.
- ii) To examine the socio-economic implications of environmental changes on the Bodos.
- iii) To raise awareness about the importance of environmental sustainability in agricultural practices.

Discussion

Agriculture is the backbone of the Bodo economy, with the majority of the population engaged in agriculture as their primary occupation.They cultivate indigenous varieties of rice and other crops such as maize, pulses, taros, and oilseedswhich are adapted to the specific soil and climate conditions in their habited region.Additionally, livestock rearing plays a vital role in their livelihoods. The Bodos have a rich agricultural heritage, characterized by their deep connection to the land and their traditional knowledge of sustainable farming practices. In the present time, this traditional way of life or agricultural practices has been increasingly threatened by various environmental changes, including shifts in climate patterns, deforestation, and land degradation. These changes have posed significant challenges to their agricultural practices, resulting in adverse impacts on food security, economic well-being, and cultural preservation.It is to be mentioned that, the impact of environmental changes on the agricultural development of the Bodos can be seen as both positive and negative. In this

study, an attempt has been made to analyze only the negative effects of environmental changes.

Climate change

Climate change, caused by factors such as rising temperatures, changing rainfall patterns, and extreme weather events, has the potential to significantly disrupt the traditional agricultural practices and livelihoods of the Bodo people. Warmer temperatures can cause crops to mature earlier or later than usual, disrupting the traditional agricultural calendar. Additionally, warmer temperatures and changing climatic conditions lead to the increase and spread of pests and diseases, affecting crop health and productivity.

The Bodo society heavily depend on paddy cultivation for their livelihood and economic development. Their traditional agriculture practices are closely tied to the climate and water resources of their habited regions. Traditionally, farmers from different regions of the Bodos predominantly practice rain-fed and canal-fed agriculture. The practice of rain-fed agriculture relies on the timely and adequate monsoon rains. As a result, irregular and changing rainfall patterns impact the agricultural practices of the Bodos as water scarcity and floods, affecting the growth of crops. Besides, the irregularity of rainfall disrupts planting and harvesting schedules, causing crop yields to fluctuate.

Flood is another cause of environmental changes that immediately damage the crops and livestock of the Bodos as extreme weather events, which become more frequent and intense due to climate change. One of the most immediate and severe consequences of flooding is the complete or partial submergence of fields. Floodwaters can submerge crops, leading to a lack of oxygen and suffocating plant roots. When plants are underwater for a long period of time, they are unable to access the necessary nutrients, and the lack of oxygen can result in root rot and death. It is worth mentioning that, the Bodos have traditionally given a total of *five names to the floods*, relating to the diversity of flora and fauna species found in their local environment. These are *Dausenbana* (a kind of flood, which is associated with the name of a falcon), *Khasi bana* (the name of a flood that is associated with long grass of reed varieties native to the North-eastern region of India), *Silabana* (a kind of flood in the name of kite), *Khusungbana* (the flood in the name of a kind of tortoise living in the forest), and *Laijamfwjaonaibana* (a type of flood named by the Bodos that is associated with the religious tradition of the Bodos such as to float away the secret plantain leaves on the water body). The first flood (*Dausenbana*) occurs between the end of *Sawan* month (July-August month) and the first week of *Bhadro* month (August-September month).

Then a series of other types of floods begin. All these types of floods are seen to have a positive as well as a negative impact on the rice crop in particular that acts as a barrier to the agricultural development of the Bodos.

Deforestation

Deforestation results in the loss of biodiversity and natural habitats. It is a major factor, posing as a barrier to the agricultural development of the Bodos. Usually, Bodos depend on the diverse flora and fauna of the forest for their agricultural practices, including the cultivation of traditional crops and the gathering of non-timber forest products. Furthermore, they have often relied on forest resources for their agriculture-based tools since immemorial times. For instance, their traditional agricultural practices often involve the use of bamboo and wood tools. These tools include ploughs, rakes, sickles, hoes, winnowing fans, and more which are primarily gathered by the people of Bodo society from the forests. Besides, forests are a source of medicinal plants and herbs that are used not only for healing but also for pest control in traditional agriculture. Bodos often use natural remedies derived from forest resources to protect their crops from pests and diseases. Additionally, the Bodos have a tradition in their society that includes the temporary planting of some specific varieties of wild plants that are full of branches and leaves in the middle of paddy fields if there are too many insects in the crops. This means that the wild birds sit on these plants to eat the pests that damage the crops and prevent it from being damaged. The tradition is gradually disappearing from the agrarian society of the Bodos due to deforestation.

Deforestation is a major cause of soil erosion. Trees and forests play a vital role in stabilizing soil and preventing erosion. Deforestation can lead to soil erosion, which reduces the fertility of the land, making it more challenging for the Bodo people to maintain productive agricultural fields. Continuous soil erosion narrows the arable land available for cultivation. The Bodos find it increasingly difficult to expand their farming areas and may have to abandon previously cultivable land due to its reduced fertility and susceptibility to erosion. As agricultural productivity declines due to soil erosion, many Bodo farmers face economic hardships. This, in turn, may force them to migrate to other new areas in search of alternative livelihoods, leading to a loss of their cultural ties to the land.

Land degradation

Land degradation has a profound impact on the agricultural development of the Bodos. The Bodos have a deep connection with the land, as agriculture is their primary source of livelihood. However, the increasing problem of land degradation

in their region poses numerous challenges to their agricultural practices and overall well-being. Land degradation often manifests as soil erosion. Soil erosion not only reduces the fertility of the land but also leads to the loss of arable soil. As a result, the Bodos face declining crop yields and diminishing agricultural productivity, which hampers their ability to meet their food and economic needs.

It is noteworthy to emphasize that, the Bodo farmers have developed traditional agricultural practices adapted to their local environment over generations. Nevertheless, the occurrence of land degradation has the potential to disrupt these practices and erode indigenous knowledge. The Bodos may have challenges in adapting to shifting soil conditions and weather patterns, which could ultimately compel them to embrace different agricultural methods and techniques. Apart from this, land degradation is frequently accompanied by soil erosion, deforestation, and loss of biodiversity. These variations in the environment have the potential to increase the risk of natural disasters like floods, and threaten local flora and fauna, further impacting the agricultural development of the Bodos.

Key measures to control environmental change include:

- i) **Sustainable Farming Practices:** Promoting sustainable farming techniques, such as organic farming and crop rotation, can help mitigate the negative impacts of deforestation on agriculture.
- ii) **Climate-Resilient Crop Varieties:** Promote the cultivation of crop varieties that are more resilient to changing climate conditions. This may include drought-tolerant crops, flood-resistant varieties, and heat-resistant strains.
- iii) **Conservation and Preservation:** Conservation efforts should focus on protecting critical forest areas, wildlife, and ecosystems, while also providing alternative livelihood opportunities for the Bodos that do not rely on deforestation.
- iv) **Reforestation:** Promoting the planting of native trees and vegetation can help stabilize the soil, prevent erosion, and enhance soil fertility.
- v) **Crop Rotation and Cover Crops:** These practices can help maintain soil health and reduce erosion by diversifying crop types and improving organic matter content.
- vi) **Improved Irrigation Practices:** Efficient irrigation methods, such as drip irrigation, can help conserve water resources and reduce soil erosion.
- vii) **Government Initiatives:** Collaboration with government agencies and local authorities can lead to better infrastructure for soil conservation and disaster management.

Conclusion

Environmental changes, including climate change, deforestation, and land degradation, have profound implications for the agricultural development of the Bodos. Addressing these challenges necessitates a multifaceted approach, involving environmental conservation, socio-economic development, and policy support. Sustainable solutions that incorporate the traditional knowledge and practices of the Bodo people are essential for preserving their cultural heritage and ensuring their food security and economic well-being in the face of environmental changes. The agricultural practices of the Bodos are highly dependent on the natural resources of a certain region, such as fertile soil, abundant water supply, and a favourable climate. However, over the years, these resources have been significantly affected by environmental changes, including irregular rainfall patterns, rising temperatures, and soil degradation. As a result, Bodo farmers have had to adapt to these challenges by altering their crop selection, irrigation methods, and planting schedules. Such adaptations have often required significant investments in technology and infrastructure, which have not been readily available to all the Bodo farmers, resulting in differences in their ability to cope with environmental changes.

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EMPOWERING COMMUNITIES THROUGH SOCIAL ENTREPRENEURSHIP: A PATH TO HUMAN DEVELOPMENT

Dipankar Saha¹

Nripen Baishya²

Research Scholar

Mizoram University, Aizawl

Abstract

India is the most populous country in the world. In 2023, India has overtaken China to become the most populous country. India's population in 2023 stands at 142.86 crore, according to the latest United Nations Population Fund data. India occupies only 2.4% of the world's land area but it supports over 17% of the world's population. The aim of the government has been to create employment opportunities for youth while focusing on rapid economic growth. Entrepreneurship development is one of the mechanisms adopted by the Government of India towards the creation of job opportunities. In the past few decades, spanning the turn of the century, social entrepreneurship has emerged as a key concept for development practitioners and has also received attention from companies, corporations, and academics. Social entrepreneurship, social business and social innovation are interconnected concepts, that combines the understanding of entrepreneurship research with human development and capabilities. This paper outlines the significance of the social entrepreneurship in human development.

Keywords: *United Nations Population Fund Data, Entrepreneur, Social Entrepreneurship, Social Innovation, Social Business, Human Development.*

Introduction

Generally the entrepreneur is seen by economists as an innovator, risk-taker and arbitrageur who contributes to economic growth by introducing new technology, competition and markets (Schumpeter, 1911; Kirzner, 1973). As such entrepreneurship is like a production factor. It is even referred to as 'entrepreneurial capital' (Audretsch and Keilbach, 2004; Audretsch, 2007). As a production factor entrepreneurial capital is said to be able to explain the residual typically found in economic growth regressions in two ways. First, entrepreneurs introduce technical change through acting as 'knowledge filters' in the commercialization of new knowledge (Audretsch et al, 2006). Secondly, they improve the allocation of other production factors (Acs and Storey, 2004:873).

Technological innovation, economic growth, and improvements in productivity do not automatically lead to human development¹. Hence even if entrepreneurship is a determinant of economic growth does not imply that it contributes directly to human development². In recent years, the role of entrepreneurship in economic development and growth has been given totally renewed attention. Entrepreneurship can affect economic development in several ways as it represents a means to ensure innovation capacity and competitiveness of nations. It is characterized mainly by the act of business creation initiated by an individual will of a future entrepreneur with a strong sense of ownership risky.³

In a rapidly changing world, where social challenges like poverty, inequality, inadequate healthcare, and environmental degradation persist, a new concept is emerging— social entrepreneurs. These individuals and organizations are revising the rules of business, pursuing new profit model. Their primary goal is to pilot social change and foster human development, making the world a better place for all. In this article, we explore the dynamic realm of social entrepreneurship and its profound impact on human development.

Defining Social Entrepreneurship

The entrepreneur who is a business leader looks for ideas and puts them into effect in fostering economic growth and development. Entrepreneurs can change the way we live and work.⁴ In short, in addition to creating wealth from their entrepreneurial ventures, they also create jobs and thereby a prosperous society. The social entrepreneur, however, neither anticipates nor organizes creating substantial financial profit for his or her investors. Instead, the social entrepreneur aims for value in the form of large-scale, transformational benefit that accrues either to a significant segment society.⁵

Social entrepreneurship is a powerful concept, defined by a fusion of entrepreneurial spirit and social responsibility. It's about leveraging business principles to address and resolve pressing societal issues. While traditional entrepreneurs focus on profit generation, social entrepreneurs are motivated by a deep sense of purpose, seeking innovative solutions to the world's most pressing challenges.

Social Entrepreneurship and Human Development

The effectiveness of entrepreneurship in providing growth and social welfare depends on the level of economic development, type of entrepreneurs and the strategies of the governments. Social entrepreneurship plays a crucial role in building a prosperous nation by focusing on creating wealth at the village level and developing human capital, social entrepreneurs can help to lift communities out of poverty and create a brighter future for all. The goals of social entrepreneurs are directed towards expanding the capabilities of other people; therefore, social entrepreneurs need to recombine existing human capabilities. The idea of 'human development' can be understood as the expansion of human abilities, the increase in available options, the enhancement of individual autonomy, and the fulfillment of basic human rights. Social entrepreneurs through recombining and improving existing human capabilities such as civic engagement, human rights, nutrition and health, civil laws, use of technologies and education can bring a significant change in society. Social entrepreneurship is often connected to changes in social and public domains, such as democracy, health, education and training; thus, social entrepreneurship and human development are intricately linked. Social entrepreneurs use innovative business models to address critical societal challenges, such as poverty, education, healthcare, and environmental sustainability. By designing solutions that enhance people's well-being, create economic opportunities, and foster sustainable communities, social entrepreneurship plays a pivotal role in advancing human development, ultimately improving the quality of life for individuals, and contributing to the betterment of society as a whole.

Social Entrepreneurship in India: Cases

Being an entrepreneur in any country is challenging, and addressing a social cause through it is undoubtedly going to make the journey more difficult but a fruitful one. As social entrepreneurs in India, one is on a never-ending mission to generate business for a social cause. Some of the prominent case of social entrepreneurs mentioned below to truly understand the transformative power of social entrepreneurship:

AMUL: One of the most popular co-operative organisation in India working towards the eradication of rural poverty is AMUL, founded by Verghese Kurein. An Indian dairy cooperative which aims to improve the socio-economic conditions of rural people through cooperative enterprises so that the marginalised are able to take into their own hands the task of creating productive employment, overcoming poverty and achieving social integration.

Study Hall Education Foundation (SHEF): Urvashi Sahni, social entrepreneur is the founder and CEO of SHEF-Study Hall Education Foundation. SHEF is a social venture that awards students who are underprivileged and interested in studying engineering or business scholarships. The foundation trained many students with various skills that can make them successful. Using her foundation, she has enlightened the world about the power of social entrepreneurship and how social entrepreneurs can help implement positive societal changes.

Redcode Informatics: Karthik Naralasetty is the founder and CEO of Redcode Informatics which has many impacts on the lives of Indians positively. Redcode Informatics is a tech company that uses technological advancement in online platform which aims to enhance access to information and technology solutions that will yield people's lives positively.

Vivekananda Girijana Kalyana Kendra: Hanumappa Sudarshan is one of the good examples of social entrepreneurs in India who founded this kendra in the year 1980 for the integrated development of the tribal population in the state of Karnataka. Due to his tireless efforts in alleviating poverty among the poor people of India, he earned the Padma Shri Award. He also earned the Right Livelihood Award.

Goonj: Anshu Gupta is a renowned social entrepreneur who founded a non-governmental organization, Goonj which is a social organization that facilitates the redistribution of used items such as clothes from urban areas to low-income families and street children in rural areas.

Robin Hood Army: Robin Hood Army volunteer-based organization that renders selfless assistance as well as providing food for vulnerable, poor, and underprivileged households in India. The organization helps source food from weddings, parties, and even restaurants collective goods and repackage them following proper hygiene procedures, then give them to the needy. This organization has been a driving force that bridges the social inequities between urban and rural areas in India.

Association for Democratic Reforms (ADR): Trilochan Shastri is one of the social entrepreneurs in India who founded ADR which is a non-profit organization

established to reinforce and advocate for democracy across India through enhancing accountability, transparency, and good governance in India.

Pipal Tree: Santosh Parulekar is the founder of Pipal Tree is one of the important examples. The company aims to provide formal training and reputable jobs to unemployed youths across India. Pipal Tree has empowered over a thousand people and is still counting in rural regions. Parulekar has shown the power of social entrepreneurship by helping many youths in India.

Akanksha Foundation: Shaheen Mistri is a reputable social entrepreneur who founded the Akanksha Foundation. The foundation helps to cater to children in all spheres by providing essential needs to children, such as healthcare services, education, and others. The Akanksha Foundation, works primarily in education to impact the lives of such children. Over a period of 20 years, Akanksha Foundation, which started with just 15 children in one center, now teaches over 3,500 children in 58 centers and 6 schools.

She for Change: Olivia Deka is an outstanding social entrepreneur who has given social entrepreneurship a new shape in India through her NGO i.e., "She for Change." The non-profit organization aims to provide essential services for disadvantaged girls and women in India, plus adequate enlightenment about family planning. She mainly works grooming the most disadvantaged girls and women across the country.

Mann Deshi Foundation: Chetna Gala Sinha is the Founder and President of Mann Deshi Foundation. The foundation aims to empower women in the rural areas by inculcating entrepreneurial skills. Also helps in coordinating and managing three institutions that together help create alternate livelihoods and incomes for rural women: a women-owned rural cooperative bank that extends a range of financial services; a rural mobile MBA school that offers skill and entrepreneurship training; and a chamber of commerce that facilitates market and policy linkages.

Changemaker: Sushmita Ghosh founded Changemakers in 1992, which is an online platform for open-source problem solving. It now provides instructions in change making for social change organizations and ordinary citizens, ultimately aspiring to form a self-energizing community of changemakers.

The Role of Innovation in Social Entrepreneurship

While we face unprecedented global political, social and environmental unrest, governments tend to lack the political will, expertise and resources to fully address the range of social, community and civic problems, and traditional entrepreneur tend to only act if they see a market opportunity and profits. This creates an

opportunity for social entrepreneurs and purpose-led social enterprises to play a larger, more proactive role in creating sustainable and innovative solutions to some of these problems. Cultivating curiosity, imagination and creativity to invent innovative solutions has the potential to transform some of these possibilities into commercially viable innovations in the markets and communities that need them most.⁶

"Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress. Social innovation is not the prerogative or privilege of any organizational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the nonprofit world." (Sarah A. Soule, Neil Malhotra, Bernadette Clavier).⁷

Innovation is the beating heart of social entrepreneurship. These change-makers are constantly searching for inventive solutions to address complex challenges. Whether it's harnessing technology to deliver healthcare services to remote areas, creating sustainable agricultural practices, or developing affordable educational tools, social entrepreneurs are at the forefront of innovation.

Challenges and Barriers

1. Even though Social and traditional entrepreneurs differ in their ultimate goals but often similar in talents and attributes. social entrepreneurship is the result of unique individualities shared by only a small percentage of the population, traits that go beyond altruistic motivation and which affect positive change in the world. Only a few human beings have the required boldness, accountability, resourcefulness, ambition, persistence, and unreasonableness of an effective social entrepreneurs.
2. Social entrepreneurs in developing countries like India face lot of pressure from political landscape. They have to demonstrate characteristics of perseverance and the ability to overcome adversity such as bureaucracy, corruption and the absence of government support. Social entrepreneurs must fight against these odds.
3. Social entrepreneurs go against the tide, taking risks. They may even be shunned by their families or communities. They work without the incentive of a profit reward replacing that with reward of social value. They make profits, unlike NGOs, but only to sustain the business. The policy framework of the government towards the recognition of the social enterprises as compared to NGOs or commercial enterprises, is also ambiguous, adding to risk.

4. India has seen a boom of start-ups across industries in the last decade. Most of these start-ups are e-commerce companies. Technology continues to be the focus. Tech entrepreneurs are creating a lot of enthusiasm and attracting adequate funding from investors. During this period, the social sector has largely been sidelined. Although healthcare and energy have attracted investors' interest and gathered funding, many other sectors struggle to get attention, support, and a developed ecosystem for success.
5. Social needs are dynamic in nature. They keep changing. Also the macro-business environment around social entrepreneurs are marked with informal market competition and lack of reliable data sets (customer, market and infrastructure).

The path of a social entrepreneur is not without its obstacles. Securing funding, achieving scalability, and navigating complex regulatory landscapes can be daunting. Yet, resilience and determination drive these entrepreneurs to overcome these barriers, as the pursuit of their mission is unwavering.

Ecosystems for Social Entrepreneurship

The ecosystem supporting social entrepreneurship is crucial for its growth and success. One crucial group within the social enterprise ecosystem is the beneficiaries and buyers who use the services that social entrepreneur provides. Buyers are those who pay for a good or service, while beneficiaries are those whom an organisation seeks to help. There is always link between quality service and number of buyers.

Governments are also an important part of the social enterprise ecosystem. Governments play a key role in setting collective priorities for addressing social needs, and they provide funding and other support for innovations and initiatives that meet those needs. Government policies may also expand or limit the available options for social enterprise models - for example, by determining how certain types of organisations are taxed and regulated.

In addition to the government, other funding sources enable social enterprises to start up - and scale up - their innovations. These funders include impact investors who seek both a financial and a social return, as well as foundations and other traditional philanthropic organisations that provide grants to nonprofit social enterprises. The availability, flexibility, and conditions of funding may determine which organisations grow and thrive, and which fail to get past the initial idea phase.⁸

Solution to the Challenges and Barriers

The social entrepreneurship organizations undertake a multi-dimensional approach to address their challenges.

1. Adopt a focussed decentralize approach on the basis of the socio-economic profile and preferred locations. Considering the socio-economic diversity across locations, social enterprises make a choice of locations (rural and semi-urban) based on the demand-supply gap and availability of minimal support infrastructure.
2. To adopt "need-based end-to-end solutions approach". For example, the energy-based social entrepreneurs design the value offering for their social segment comprising access to financing, customized product offering and after-sales support. This helps in cost control and operation efficiencies.
3. Significant investment of time, capital and resources in conducting the outreach camps and demonstrations at public congregation places (schools, religious places and community hospitals, etc.) in the rural and semi-urban areas. They also invest in training and engaging the local individuals as employees. They create physical centres and align with the local individuals and institutions as promotional entities.
4. To form a collaborative ecosystem with diverse stakeholders to leverage their network for effective mobilization of scarce resources. They invest in local capacity building by creating a value network comprising non-traditional partnerships and engaging local individuals.
5. To focus on cost efficiency measures to ensure the positive and sustainable cash flows-based ecosystem. They try to adopt latest technologies during value creation and delivery; offering multiple products and services on the same delivery channels; engaging the local institutions and individuals; asset-light-no-frills setups: and continuing focus on prototyping and process-based innovations.

Social entrepreneurship and Sustainable Development Goals (SDGs)

The adoption of the United Nations' Sustainable Development Goals (SDGs) by India in 2015 provide a global roadmap for a better future. Social entrepreneurs are key actors in achieving these goals, working in alignment with the SDGs to combat poverty, promote quality education, ensure good health and well-being, and thereby to human development.

Social enterprise has emerged as an important mechanism for creating a positive social and environmental impact while also generating revenue. These enterprises are businesses driven by a social or environmental mission, and they use their profits to reinvest in their mission or benefit their communities. It plays a significant role in building sustainable cities and communities by addressing social and environmental challenges through innovative and sustainable business models. Social entrepreneurs create economic and social value by developing sustainable business models that generate revenue while also creating positive social and environmental impact. Social entrepreneurs often promote sustainable practices in their businesses, such as the use of renewable energy, sustainable agriculture, and waste reduction. By doing so, they can contribute to the overall sustainability of their cities and communities and can help to promote greater environmental awareness and responsibility among businesses and individuals.

Conclusion

Social entrepreneurship goes beyond being a small movement; it has become a global phenomenon that aims to do good. By tackling the root causes of challenges in human development and driving lasting change, social entrepreneurs demonstrate that business can be a powerful force for social transformation. As we applaud their achievements and support their endeavors, we actively participate in creating a brighter and more equal future for everyone.

In a world where overcoming challenges appears overwhelming, social entrepreneurship provides hope, inspiration, and a clear route toward a more advanced world. It is essential to acknowledge the potential of these exceptional individuals and organizations as catalysts for human development. Together, they showcase that positive change is not only within reach but also attainable through the combined efforts of entrepreneurship and social responsibility.

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A BRIEF REVIEW ON THE USER PARTICIPATION IN IRRIGATION MANAGEMENT IN INDIA

Himasri Barman

Gokhale Institute of Politics and Economics, Pune

Abstract

Irrigation for agriculturists plays a vital role in the crop production and economy of a country like India. Irrigation activities have been there since the beginning of human cultivation which may not be of the form we used today. The systematic review of the use of irrigation in India is very much necessary to ascertain its effectiveness in terms of user participation for future planning of irrigation systems. This paper attempts to examine various challenges and opportunities of Water user associations in the Operation & management of irrigation in India. The study investigates various problems faced by the irrigation sector, the limitations of Water user associations in irrigation management, and the usefulness of Water user associations in various management activities of irrigation. The study is descriptive. The research study is carried out through secondary data and literature available from 1994 to 2023. The study finds that the participation of farmers in managing irrigation activities does have an impact a positive impact on the irrigation sector in India.

Keywords: *Agriculture, Irrigation, Farmer's Participation, Oppourtunities and Challenges*

"One should take proper managerial actions to use and conserve water from mountains, river, and wells and also rains water for various purposes"

—ATHARVA VEDA. 19.2.1

Introduction

Water is a key natural resource for all sectors & but it is becoming more Stingy with growing environmental degradation. Water is essential for agricultural, industrial, and all other allied activities. Irrigation is one of the core components of agriculture. However, as a whole working of irrigation has not been satisfactory over the years due to a lack of efficient management and poor participation of the farmers. In such a situation it is very important to use it economically and to govern it properly for sustainability. Such a situation demands an appropriate political, social, and administrative system that develops, manages, and distributes water resources (Roger, 2003). It involves both formal and informal institutes which affect the water management. Formal institutes include government institutes, laws, and policies. However informal institutes include shared rules, norms, and customs (Ostrom, 1990). Indian Govt adopted many schemes in favor of irrigation sector development like the Command Area Development program, Accelerate Irrigation development program, national mission on micro irrigation, and Pradhan Mantri Krishi Sinchayee Yojana. However in India, Still agriculture depends on monsoon, due to a lack of proper operation & and management of these schemes. The source of revenue is only a high subsidy for water charges & and poor efficiency water collection. The realized fund is not sufficient which only offsets the cost of operation & and maintenance activities. The irrigation sector fails to generate resources to carry out operation & and maintenance activities (Svendson and Gulati, 1995). Approximately 70% of the operation & and maintenance budget is spent on employee salaries and expenditure costs rather than repair work of infrastructure(Swain, 1998). To enhance the working of the irrigation system government needs to revise irrigation subsidies and water rates. However, the Government has to ensure improved quality of irrigation service to farmers. In recent times transferring responsibilities of management of irrigation from the Public sector to the user become a common step taken in a large number of countries due to the availability of water per person declining and groundwater level has become a serious issue. So, the researchers and policymakers have looked at the PIM as one of the solutions to rationalize the use of water.

Participatory Irrigation Management (PIM) is defined as a group of people who form a formal or an informal user group irrigation association and such association uses water judiciously or with the rationalization principle for irrigation. This concept rationalizes the usage of water for irrigation purposes with the help of local people's participation. The PIM is broadly classified into two types- formal water user group and informal water user group. A formal water user group/ association is a registered user group whereas an informal water user group is

unregistered but it follows its own rules/ principles of common benefits framed by them. The importance of PIM lies in various factors like how participation of farmers (users) are involved in management activities of irrigation and how efficiently they handle operation and maintenance activities including sufficient water supply for farmers etc. In India, PIM has received much attraction after the announcement of the first National Water Policy 1987 after following the modification of National Water Policy 1987 regarding the participatory approach to water resources management:

Operation of water for different users must integrate a participatory approach with involve govt Depts. & Water Users' Association and municipalities and Gram-Panchayats in operation, maintenance of water along with legalized appropriate roles for women to Water Users' Association.

Literature Review

The review of literature plays an important role in ascertaining the outcome of any research problem and this work includes an extensive review of the existing and available literature so that the problem can be addressed scientifically and effectively. There are various trends of literature available on Participatory Irrigation Management(PIM) and Irrigation systems. Some Relevant Literature Review are discussed here-

Bazbaruah (1994) identifies some factors like inadequate planning and lack of coordination among the institutions that are handling the execution process of irrigation programs are the main responsible factors for the underutilization of irrigation potential. However, he also states that without a comparative study of this field, it is difficult to figure out all responsible factors for less utilization of irrigation potential.

After the diagnosis of the failure of govt irrigation schemes in India, it has been realized that regarding financial performance of irrigation projects is not satisfactory. The source of revenue is only the high subsidy for water rates and low collection efficiency. The realized amount of revenue is not sufficient; it hardly covers recurrent operation and maintenance expenses. (Svendson and Gulati, 1995; Swain,1998)

Mitra (1996) observed problems of irrigation arise in the building phase & and operation and maintenance of irrigation. During the building there are many problems arose which are inadequate project finance, improper design, rehabilitation of project-affected people, and environmental degradation. In the operation and maintenance phase, there are some problems like less usage of irrigation capacity,

the iniquity of irrigation, financial loss, water-soaked, and salinity. Mitra suggests institutional reform for the enhancement of the irrigation sector.

Upadhyay (2002) has tried to highlight the priorities of Govt for decentralized, human & and requirement-motivated management of water, but all such efforts of Govt continuously fail in India. For the implementation of such policy initiatives, it is very important to transfer authority of irrigation management from Govt to user associations along with charting the role of Panchayats Raj Institutes in all aspects of water management.

Reddy et al., (2005) studied the status of water User Associations in Andhra Pradesh. It was observed that WUAs are not so far-reaching in their target; it is because of the involvement of politics in the functions of WUAs. WUAs are not able to perform key roles including accumulating water fees, monitoring, and sectioning of works since these rights are vested up to the Department of Irrigation.

There are many positive consequences of participatory irrigation management in India. It is observed significant development of water efficacy after the involvement of cultivators in the management of irrigation (Gandhi and Namboodri 2002). Uphoff (1986) argued that as a result of PIM, many farmers getting irrigation facilities & and utilizing irrigation potential also increase. In Gujarat R Parthasarathy (2000) thinks participatory irrigation management leads to smooth resolutions of water conflicts and also realizes that water user association is more efficient in making allocation of an investment decision rather than reducing state expenditure.

Some research scholars formulate three strategies related to PIM which are modernizing irrigation systems, both technically and institutionally, managing groundwater use, opting for public-private partnerships, and providing incentives to irrigation officials to achieve better irrigation performance. (Mukherji et al., 2009).

S.S. Kalamkar (2012) points out that the condition of the monsoon is an important factor for agriculture development. In Maharashtra due to low irrigation facilities and variation in rainfall, considered a responsible factor for low and varied productivity levels. Therefore, it is an emerging issue for development and management of irrigation facility.

When we talk about the requirement of an efficient water management system Patel(2015) points out that however, the Indian Government has taken many schemes for the development of agriculture like Command Area Development Programme (CADP) during 5th five-year plan to increase utilized irrigation potential, but the program didn't show fruitful results due to lack of

efficiency of water legislation, water conservation, equal distribution of water and recycling and infrastructure development.

Ricks et al. (2016) state that in Indonesia support and management of local people are very important for the management of common pool resources. When the political situation is neutral, local political leaders pressure bureaucrats for better management with farmers. Therefore, local politics determines the success of policy implementation. It has also been observed that rather than farmers training, but frequent contact between farmers and Govt officials can improve the conditions of user groups.

A study by FOA(2007) has shown key defaults of the present PIM model such as poor service delivery, excessive layers and high transaction costs, poor cost recovery, lack of upgrading of the main system, blurred/ skewed management responsibilities, and an acute need to develop capacity at all levels of professionals.

The importance of PIM has been growing rapidly in India in recent years due to the scarcity of water. Availability of water per person is declining and groundwater level has become a serious issue. So, the researchers and policymakers have looked at the PIM as one of the solutions to rationalize the use of water. One of the factors leading to the success of WUA is the stakeholder engagement in the agricultural irrigation management and farm business (Rustinsyah, R., & Prasetyo, R. A. 2019)

The eastern part of India requires a better management system of water institutions, especially in the aspect of more engagement of women in participatory water institutions. It is because of, a lack of representation, assistance, and collaboration of females in most water institutions. All decisions of farm household is mostly taken by male persons solely. Women are only part of the joint settlement for undertaking land under irrigation, crops to grow under irrigation, and spending the additional income. Joint decision-making is more prevalent in Assam. The study point out that the formal involvement of women in water user associations help to identify the strength of women in respect to social and economic field & maintain better gender stability & increase their perception of irrigation management & serve for better decision-making in the water institutions. (Khandker et. al 2020).

Nigam, J. et al. (2023) have tried to highlight the major constraints to irrigation efficiency and water User Associations face in the effective usage of canal irrigation. The study highlights that reducing financial Barriers through adequate government support and timely collection of water fees should be supplemented by holders in participatory irrigation management (PIM) covering Monitoring, Coordination, Leadership, Cooperation, and Dispute/Conflict resolution.

Theoretical background of PIM

There has been a growing crisis in the demand for food while the performance of agriculture shows a negative trend since its contribution to National income decreased (2015).

This is because it is essential to give special emphasis on the development of agriculture. Indian farmers predominantly depend on the monsoon for water supply in cultivation. Then the Indian government introduced Participatory irrigation management in the late 1980s. Unfortunately, the performance of PIM is not satisfactory due to a lack of legal backup and policy changes, uncertainty of water availability, lack of financial viability, lack of technical knowledge, leadership, awareness, and training, and lack of defined roles, responsibilities, and functions of WUAs and Panchayats.

Objectives of PIM

- To create a sense of ownership of water resources and the irrigation system among the users, to promote economy in water use and preservation of the system.
- Achieve optimum utilization of water according needs of crops
- To achieve equity in water distribution.

Increase crop

- Productivity per unit of water & unit of land
- To make the best use of natural precipitation and groundwater in conjunction with flow irrigation for increasing irrigation and cropping intensity.
- To facilitate the users to have a choice of crops, cropping sequence, the timing of water supply, period of supply, and also the frequency of supply, depending on soils, climate, and other infrastructure like roads, markets cold storage to maximize the incomes.
- To encourage farmers to collect water fees and payments to the Irrigation Agency.
- To create a positive environment among Irrigation Agency officials and the farmers.

Legal Framework of PIM

Water is a prime natural resource and availability of it has very limited access. Therefore it is very important to conserve and manage in a proper and organized manner. In India, the First National Policy was adopted in 1987. According to

Provisions of the National Water Policy of 1987, there should be some efforts like legal and institutional reforms which help to involve farmers especially women farmers progressively in various management activities of irrigation systems like-water distribution and collection of water rates. Water user associations and local bodies such as municipalities and gram Panchayats should be particularly involved in the operation, maintenance, and management of water infrastructures/facilities at appropriate levels progressively so that irrigation management activities can transfer to the user groups.

Regarding the construction of a sound legal framework for PIM in India, the Ministry of Water Resources recommended a model act to be adopted by the state legislatures for enacting the latest initiatives in irrigation & and modification of the pre-existent irrigation act to promote & and simplify PIM. By the model act, 15 state governments, namely Andhra Pradesh, Goa, Karnataka, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Kerala, Bihar, Maharashtra, Assam, Chhattisgarh, Gujarat, Sikkim, and Uttar Pradesh have legislated new acts or amended existing acts. Details of the acts and rules enacted by the different states are given in Table 1. Andhra Pradesh was the first state to enact an exclusive law for PIM, which is the Farmers' Management of Irrigation Systems Act, 1999. Madhya Pradesh and Rajasthan have modified laws depending on the Andhra Pradesh PIM model. In Uttar Pradesh, Maharashtra, and Odisha, membership in the WUA is mandatory for water users. In Andhra Pradesh and Odisha, more numbers of WUAs are formed with the help of the political party to cover the entire irrigated command area under PIM. After the enactment of Laws on PIM, various states of India have taken steps to form WUAs. The details of WUAs formed in various states are provided in Table 2, which indicates that Andhra Pradesh has the highest coverage area under the PIM program followed by Madhya Pradesh, Karnataka, and Odisha. (GOI, 2023)

Table-1: State-wise Position of Enactment of New Act / Amendment of existing Irrigation Act

Sl. No.	Name of State	Name of Irrigation Act
1	Andhra Pradesh	Andhra Pradesh Farmers' Management of Irrigation system Act, March 1997
2	Assam	Assam Irrigation Water Users Act 2004
3	Bihar	Bihar Irrigation, Flood Management and Drainage Rules 2003

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4	Chattishghar	Chhattisgarh Sinchai Prabandhan Me Krishkon Ki BhagidariAdhinyam, 2006
5	Goa	Goa Command Area Development Act 1997
6	Gujarat	Gujarat Water Users PIM Act, 2007
7	Karnataka	Karnataka Irrigation and certain other law (amendment) Act, 2000.
8	Kerala	Kerala Irrigation and Water Conservation Act, 2003
9	Madhya Pradesh	Madhya Pradesh Sinchai Prabandhan Me Krishkon Ki BhagidariAdhinyam, 1999
10	Maharashtra	Maharashtra Management of Irrigation System by Farmers Act 2005
11	Nagaland	Nagaland farmers participation in management of irrigation systems Act, 2013
12	Odisha	Odisha Pani Panchayat Act, 2002
13	Rajasthan	Rajasthan Sinchai Pranali Ke Prabandh Me Krishkon ki Sahabhagita Abhinyam, 2000
14	Sikkim	Sikkim irrigation water tax, 2002 and Sikkim irrigation water tax Act, 2000
15	Tamilnadu	Tamil Nadu farmers" management of irrigation system Act, 2007
16	Uttarakhand	Uttarakhand Water Management and Regulatory Act, 2013
17	Uttar Pradesh	Uttar Pradesh Irrigation Management Act, 2009

Source: Ministry of Water Resources, Govt of India, 2023

Table-2: State-wise number of water User associations and area covered

Sl No.	Name of states	Numbers of WUAs formed	Area Covered ('000 hectares)
1	Andhra Pradesh	10884	4179.25
2	Arunachal Pradesh	43	10.97
3	Assam	847	95.02
4	Bihar	80	209.47
5	Chattisgarh	1324	1244.56
6	Goa	84	9.54

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7	Gujarat	8278	662.99
8	Haryana	8490	1616.27
9	Himachal Pradesh	1173	140.56
10	J & K	383	32.794
11	Jharkhand	0	0
12	Karnataka	2787	1418.66
13	Kerala	4398	191.22
14	Madhya Pra.	2062	1999.64
15	Maharashtra	2959	1156.22
16	Manipur	69	29.4
17	Meghalaya	159	20.17
18	Mizoram	390	18.23
19	Nagaland	24	3.44
20	Odisha	20794	1757.71
21	Punjab	4845	610.29
22	Rajasthan	1994	1144.45
23	Sikkim	0	0
24	Tamil Nadu	1910	935.664
25	Tripura	0	0
26	Uttar Pradesh	802	318.69
27	Uttarakhand	0	0
28	West Bengal	10000	37
	Total	84779	17842.208

Source: Ministry of Water Resources, Govt of India, 2023

Discussion:

Literature has discussed the following major issues relating to participatory irrigation management in India.

1. Major responsible factors for the effectiveness of participatory irrigation management and the successfulness of Water User Associations
2. Importance of efficient water management system.
3. Pros of participatory irrigation management in India.
4. Factors liable for the poor performance of major and medium irrigation systems, and constraints of Water User Associations in India.
5. Different approaches to irrigation development

By considering the above factors as important ones, the present study finds that-

1. If farmers' communities do combine work for the common goal of water user associations with proper local leadership then it will help to meet the needs of Water User Associations both in developed and less developed countries.
2. The role of Govt is very crucial for the proper functioning of Water User Associations. When govt officials and bureaucrats maintain good relations and regular contacts with Members of WUAs then it helps to strengthen WUAs.
3. Due to the introduction of PIM, water is supplied on a volumetric basis and farmers are paying water fees which ensure reasonable use of water & and smooth settlement of water conflicts.
4. A sound system of technical, managerial, and institutional arrangements will increase the effectiveness of PIM.
5. The earlier approaches to irrigation development have been found ineffective due to a lack of dissemination & and transfer of rights & and responsibilities to water users. But in recent years, new approaches have been introduced which are target oriented approach (top-down approach), motivational approach (bottom-up approach), and sequential approach. The target-oriented approach introduces PIM extensively and rapidly through enacting legislation. The motivational approach introduced PIM by motivating farmers to form such Water user groups who had grand success in many irrigation projects. The sequential approach introduces PIM initially and once it has better strength it enacts the Irrigation Act.
6. The main reasons for the failures of Govt initiatives for irrigation development are lack of decentralization, inadequate project finance, improper design, rehabilitation of project-affected people, environmental degradation, financial loss, water logging, and salinity, and lack of people participation.
7. In some states of India like Andhra Pradesh WUAs are treated as non-political institutions and political involvement regulates the functions of WUAs. WUAs are not able to perform important functions like the collection of water charges, monitoring, and sectioning of works since these rights are vested in the hand of the Irrigation department, and all the investment is spent on improving the poor irrigation system rather than strengthening formal institutional structures.

8. In some states of India like Maharashtra major part of the water charge is collected from small & marginal farmers hence large farmers become richer and income inequality continuously increases.

Conclusion

This paper aims to better understand of challenges faced by water user associations along with opportunities for water user associations. Application of Participatory irrigation management in water resource management is widespread and continuously expanding all over the world, especially after pressure from donor agencies like the World Bank and others. After evaluating all the relevant problems of the irrigation sector in India, which results in distortion of performance of the irrigation sector, researchers figured out that the low returns, high expenses for operation & maintenance activities, and unrevised irrigation rates from farmers are the main reasons for this (Vidyanathan, 1999). Therefore, the Indian government has a special focus on the implementation of Participatory irrigation management after the modification of the National Water Policy in 2002. The success of Participatory irrigation management depends on the success and sustainability of Water User Associations (WUA). Some fundamental factors greatly influence the activities of WUAs. These fundamental factors are the active participation of farmers, capacity building of irrigation officials and farmers, effective leadership of office bearers and water users, legal backing, economic feasibility of water User Associations, and efficient monitoring and evaluation of activities of WUA. Indeed in India, It is very important to ensure proper legal rights of Water User Associations and devote specific rights to WUA along with reducing political involvement to perform activities of WUAs and increasing the awareness of WUA among the masses of India. By stimulating users' participation in irrigation management, it is required to explore various issues in the Indian context. Most emerging issues are faced by farmers' participation in irrigation management, provision of legal support for PIM in India, and positive outcomes of user participation in irrigation management.

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NAVIGATING THE COMPLEX INTERPLAY: GDP GROWTH AND HUMAN DEVELOPMENT IN EMERGING MARKET AND DEVELOPING ECONOMIES

Hrishikesh Dutta¹

Sushmita Bhattacharjee²

Post Graduate, Gauhati University

Abstract

This comparative analysis delves into the intricate relationship between GDP growth rates and the Human Development Index (HDI) of the 20 Emerging Market and Developing Economies (EMDEs) over the period from 2012 to 2021. EMDEs represent a diverse group of nations at various stages of industrialization and economic growth, grappling with issues like income inequality, political instability, and limited resource access. The study offers a comprehensive evaluation of the economic growth trends and HDI scores for these countries, revealing the complex interplay between economic advancement and social development. The findings of this analysis emphasize that the connection between GDP growth and HDI is multifaceted and not universally consistent across all nations. It underscores that, while economic growth is undeniably important, it is not the sole determinant of a nation's human development. Factors such as education, healthcare, and income distribution are equally pivotal in shaping a country's overall development. This study serves as a valuable resource for policymakers and researchers seeking a deeper understanding of the intricate dynamics between economic progress and social well-being in EMDEs.

Introduction

According to the United Nations Development Programme, the Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean. The HDI can be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities.

What are EMDEs?

EMDEs or **Emerging Market and Developing Economies**, refer to countries that are in the process of industrialization and experiencing economic growth but have not yet reached the level of development seen in advanced or developed economies. These countries often have characteristics such as rapid population growth, urbanization, and increasing industrial and service sectors. EMDEs may also face challenges like income inequality, political instability, and limited access to resources and infrastructure. They are an important focus of economic analysis and policy due to their potential for growth and impact on the global economy. There are twenty countries who fall in this group. They are Argentina, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Iran, Malaysia, Mexico, Philippines, Poland, Russia, Saudi Arabia, South Africa, Thailand, Turkey, United Arab Emirates (UAE) .

Comparative Analysis between the Growth Rates and the Human Development Indexes:

Here we will try to understand the interrelation between the growth rates of EMDEs and their respective Human Development Index (HDI). A comparative analysis between the GDP growth rates and the HDI of the countries provides insights into the relationship between economic growth and human development..

Table 1: GDP Growth Rates of the EMDEs from 2012 to 2021

Countries	Growth Rates									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Argentina	-1	2.4	-2.5	2.7	-2.1	2.8	-2.6	-2	-9.9	10.4
Brazil	1.9	3	0.5	-3.5	-3.3	1.3	1.8	1.2	3.3	5
Chile	6.2	3.3	1.8	2.2	1.8	1.4	4	0.7	-6.1	11.7
China	7.9	7.8	7.4	7	6.8	6.9	6.7	6	2.2	8.4
Colombia	3.9	5.1	4.5	3	2.1	1.4	2.6	3.2	-7.2	11
Egypt	2.2	2.2	2.9	4.4	4.3	4.2	5.3	5.6	3.6	3.3
Hungary	-1.3	1.8	4.2	3.7	2.2	4.3	5.4	4.9	-4.5	7.2
India	5.5	6.4	7.4	8	8.3	6.8	6.5	3.9	-5.8	9.1
Indonesia	6	5.6	5	4.9	5	5.1	5.2	5	-2.1	3.7
Iran	-3.7	-1.5	5	-1.4	8.8	2.8	-2.3	-2.7	3.3	4.7
Malaysia	5.5	4.7	6	5.1	4.4	5.8	4.8	4.4	-5.5	3.1
Mexico	3.6	1.4	2.8	3.3	2.6	2.1	2.2	-0.2	-8	4.7
Philippines	6.9	6.8	6.3	6.3	7.1	6.9	6.3	6.1	-9.5	5.7
Poland	1.5	0.9	3.8	4.4	3	5.1	5.9	4.5	-2	6.8
Russia	4	1.8	0.7	-2	0.2	1.8	2.8	2.2	-2.7	5.6
Saudi Arabia	5.4	2.9	4	4.7	2.4	-0.1	2.8	0.8	-4.3	3.9
South Africa	2.4	2.5	1.4	1.3	0.7	1.2	1.5	0.3	-6.3	4.9
Thailand	7.2	2.7	1	3.1	3.4	4.2	4.2	2.1	-6.1	1.5
Turkey	4.8	8.5	4.9	6.1	3.3	7.5	3	0.8	1.9	11.4
UAE	4.8	5.1	4.2	6.8	5.6	0.7	1.3	1.1	-5	3.9

The GDP Growth Rates of the EMDEs in table 1 are taken from the World Bank Database. Now let us also have a look into the Human Development Indexes of the EMDEs.

Table 2: Human Development Indexes of the EMDEs from 2012 to 2021

Countries	Human Development Index									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Argentina	0.811	0.808	0.836	0.827	0.822	0.825	0.842	0.845	0.84	0.842
Brazil	0.73	0.744	0.755	0.754	0.758	0.759	0.762	0.765	0.758	0.754
Chile	0.819	0.822	0.832	0.847	0.842	0.843	0.849	0.851	0.852	0.855

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China	0.699	0.719	0.727	0.738	0.748	0.752	0.755	0.761	0.764	0.768
Colombia	0.719	0.711	0.72	0.727	0.747	0.747	0.764	0.767	0.756	0.752
Egypt	0.662	0.682	0.69	0.691	0.694	0.696	0.701	0.707	0.734	0.731
Hungary	0.831	0.818	0.828	0.836	0.835	0.838	0.85	0.854	0.849	0.846
India	0.554	0.586	0.609	0.624	0.636	0.64	0.642	0.645	0.642	0.633
Indonesia	0.629	0.684	0.684	0.689	0.691	0.694	0.712	0.718	0.709	0.705
Iran	0.742	0.749	0.766	0.774	0.796	0.798	0.785	0.783	0.777	0.774
Malaysia	0.769	0.773	0.779	0.789	0.799	0.802	0.805	0.81	0.806	0.803
Mexico	0.775	0.756	0.756	0.762	0.772	0.774	0.776	0.779	0.756	0.758
Philippines	0.654	0.66	0.668	0.682	0.696	0.699	0.711	0.718	0.71	0.699
Poland	0.821	0.834	0.843	0.855	0.86	0.865	0.877	0.88	0.876	0.876
Russia	0.788	0.778	0.798	0.804	0.815	0.816	0.823	0.824	0.83	0.822
Saudi Arabia	0.782	0.836	0.837	0.847	0.854	0.853	0.854	0.854	0.87	0.875
South Africa	0.629	0.658	0.666	0.666	0.696	0.699	0.707	0.709	0.727	0.713
Thailand	0.69	0.722	0.726	0.74	0.748	0.755	0.772	0.777	0.802	0.8
Turkey	0.722	0.759	0.761	0.767	0.787	0.791	0.817	0.82	0.833	0.838
UAE	0.818	0.827	0.835	0.84	0.862	0.863	0.889	0.89	0.912	0.911

Till date, the latest HDI dataset are available for 2021 which are available in the Human Development Report 2021-2022. Now here are some observations based on the data from table 1 and table 2.

1. Argentina:

- Argentina experienced fluctuations in GDP growth rates during this period, with both positive and negative growth. However, its HDI remained relatively stable, indicating that the overall development of the country was consistent despite economic fluctuations.

From 2012 to 2018 the growth rates were alternatively positive and negative. But 2018 to 2020 showed consistently negative growth rates which revived in 2021 significantly. However in case of HDI from 2012 to 2015, the HDI decreased when growth rate increased and vice versa although the difference was very minute. From 2016 the HDI has been increasing albeit by a small amount but it remained largely consistent.

2. Brazil:

- Brazil had a mix of positive and negative GDP growth rates, including a significant contraction in 2020. Its HDI showed a slight decline over the years, reflecting challenges in social development.

Brazil's growth rate declined to 0.5% and became negative in the years 2016 and 2017. In 2017 the growth rate grew back and was the highest in 2021 with a growth rate of 5%. In case of HDI, it did not fall from 2014 to 2016 which is a contrary in case of the growth rates

3. Chile:

- Chile demonstrated strong economic growth in 2021, and its HDI consistently improved during the period, indicating that the country experienced both economic and social development.

Chile had a gradual decrease in its growth rate from 2012(6%) to 2017(1.4%) and rose back to 4% in 2018. However it decreased to -6.1 % in 2020 due to the pandemic caused by Covid-19. It recovered back in 2021 with a growth rate of 11.7%. In case the HDI for the years 2014,2015 and 2016 were higher compared to the previous years. Although the growth rates were the lowest in 2019 and 2020, the HDI remained at a higher rate compared to the previous years.

4. China:

- China's economy maintained positive growth throughout the years, and its HDI also saw steady improvement, highlighting its progress in both economic and social development.

Though China had positive growth rates over the years, yet a gradual decreasing trend of the growth rates could be seen. It had a growth rate of 7.9% in 2012 to 6% in 2019. It dropped to 2.2 % in 2020 due to the pandemic. In 2021, China recovered back with the highest growth rate of 8.4% in 2021. Unlike the growth rate, the trend of HDI had a gradual increase 2012 to 2021 with indexes 0.699 to 0.768 respectively.

5. Colombia:

- Colombia had fluctuations in GDP growth rates, including a significant contraction in 2020, but it showed a remarkable recovery in 2021. The HDI remained relatively stable over the years, reflecting the challenges of social development in the country.

6. Egypt:

- Egypt's GDP growth rates were moderate, and its HDI gradually improved, indicating ongoing progress in social development.

Egypt's growth rates continuously increased from 2012 to 2019. It started with 2.2% in 2012 to 5.6% in 2019. The growth rates decreased after that. Egypt's HDI was highest in 2020 with an index of 0.734.

7. Hungary:

- Hungary had fluctuations in GDP growth rates, with a significant economic growth in 2021. Its HDI consistently improved, reflecting progress in social development.

Hungary had negative growth rates in 2012 and 2020 with -1.3% and -4.5% respectively. The HDI of the country were constantly pretty high over the years with indexes above 0.8

8. India:

- India's GDP growth rates showed fluctuations, including a contraction in 2020, but it demonstrated a strong recovery in 2021. The HDI declined slightly over the years, indicating that social development faced challenges.

The growth rate of India was satisfactory in the years 2015, 2016 and 2021 with 8%, 8.3% and 9.1% respectively. It had a negative growth rate of -5.8% in 2020. The HDI was the highest in 2019 with 0.645 and the lowest in 2012 with 0.554

9. Indonesia:

- Indonesia's GDP growth rates were generally positive, and its HDI showed modest improvement, suggesting progress in social development.

Indonesia had moderate growth rates not more than 6%. The highest was 6% in 2012 and the lowest was -2.1% in 2021. The growth rate of Indonesia was highest in 2012 but it was not the same in case of HDI. Though it had the lowest growth rate in 2020, however Indonesia had a HDI of 0.709 .

10. Iran:

- Iran's GDP growth rates had fluctuations, and its HDI remained relatively stable, indicating a mixed picture of social development.

The growth rates of Iran were not that satisfactory over the years. It did not have a growth rate more than 5% except for the year 2016 with a growth rate of 8.8%. It had negative growth rates in the years 2012, 2013, 2015, 2018 and 2019. However the scenario of HDI was pretty different. Iran maintained a steady HDI above 0.7 over the years.

11. Malaysia:

- Malaysia's GDP growth rates fluctuated, with a significant contraction in 2020. Its HDI remained stable, reflecting challenges in social development.

From 2012 to 2015 the growth rates were alternatively increasing and decreasing. In 2016 it decreased consecutively. 2017 and 2018 showed a little

rise but again from 2019 it kept on decreasing and became negative in 2020. The growth rate in 2021 was positive but not as high as the rates of the last 10 years. However the HDI from 2012 to 2019 kept on increasing with a slight dip in 2020 and further dip in 2021.

12. Mexico:

- Mexico's GDP growth rates were positive, with a contraction in 2020. Its HDI remained relatively stable, showing limited progress in social development.

From 2012 to 2014 the growth rates were increasing and decreasing alternatively. In 2015 the growth rate increased consecutively but kept on decreasing in 2016 and 2017 with a very little revival in 2018 it became negative in 2019 and 2020. The growth rate revived in 2021 with the highest growth rate in the past 10 years. On the other hand the HDI has remained highly consistent throughout the period from 2012 to 2021 with very minute variations of 0.01 and 0.02.

13. Philippines:

- The Philippines had positive GDP growth rates, with a significant contraction in 2020. The HDI improved, reflecting ongoing social development.

From 2012 to 2015 the growth rates kept on declining. In 2016 it increased a little but further kept on declining from 2017 and became negative in 2020. The growth rate again became positive in 2021 but it was not as high as the growth rates of the past 9 years. However the HDI kept on increasing from 2012 to 2019. In 2020 it minutely declined by 0.008 and further declined in 2021.

14. Poland:

- Poland demonstrated positive economic growth, and its HDI consistently improved, highlighting progress in social development.

Growth rate declined from 2012 to 2013 and increased from 2014 to 2015 but again declined in 2016. 2017 and 2018 showed increasing and relatively high growth but it again declined in 2019 and became negative in 2020. In 2021 the growth rate became positive with the highest growth rate in the last 9 years. On the other hand from 2012 to 2019 the HDI kept on increasing with a little dip in 2020 and 2021.

15. Russia:

- Russia's GDP growth rates had fluctuations, and its HDI remained relatively stable, indicating mixed progress in social development.

From 2012 to 2015 the growth rates kept declining and became negative in 2015. From 2016 it again became positive and kept on increasing till 2018. In 2019 it declined a little by 0.6 and again became negative in 2020. In 2021 the growth rate revived and attained the highest rate in the past 9 years. However the HDI in the same period showed an increasing trajectory with minute dips.

16. Saudi Arabia:

- Saudi Arabia's GDP growth rates were positive, with a contraction in 2020. Its HDI showed gradual improvement, suggesting progress in social development.

The growth rates were increasing and decreasing alternatively throughout the years. The country had negative growth rates in 2017 and 2020. On the other hand the HDI had an increasing trajectory throughout the period from 2012 to 2021.

17. South Africa:

- South Africa had a mix of positive and negative GDP growth rates. Its HDI remained relatively stable, indicating challenges in social development.

The growth rates increased from 2012 to 2013 and declined from 2014 to 2016. It increased a little from 2017 to 2018 but again declined in 2019 and became negative in 2020.

However the HDI in the period of 2012 to 2021 showed an increasing trajectory.

18. Thailand:

- Thailand demonstrated positive economic growth, with a significant contraction in 2020. Its HDI consistently improved, highlighting progress in social development.

The growth rate of Thailand was relatively higher 2012 with 7.2%. After that growth rate could not rise above 4.2%. The HDI of Thailand had a trend of steady and gradual increase. It started with 0.69 in 2012 till 0.8 in 2021.

19. Turkey:

- Turkey had positive economic growth, and its HDI showed continuous improvement, indicating progress in social development.

Comparing to the rest of the years, Turkey had high growth rates of 7.5%, 8.5% and 11.4% in 2017, 2013 and 2021 respectively. The HDI had a range from 0.72 to 0.79 from the year 2012 to 2017 respectively. From 2018 onwards, the HDI was above 0.81.

20. UAE:

- The UAE's GDP growth rates had fluctuations, and its HDI consistently improved, reflecting progress in both economic and social development.

The highest growth rate was in the year 2015 with 6.8% and the lowest in 2020 with -5%. The growth rates were pretty low in the years 2017, 2018 and 2019 with 0.7%, 1.3% and 1.1% respectively. The trend of HDI is quite good with the lowest of 0.818 in 2012 and the highest of 0.912 in 2020.

Conclusion

This comparative analysis examines the relationship between the economic growth rates and Human Development Index (HDI) of Emerging Market and Developing Economies (EMDEs) over the period from 2012 to 2021. EMDEs encompass a group of countries in various stages of industrialization and economic growth, facing challenges such as income inequality, political instability, and limited access to resources. This study presents a detailed assessment of the GDP growth rates and HDI of the 20 EMDEs, shedding light on the intricate interplay between economic progress and social development. Overall, this analysis underscores the complex and multifaceted relationship between economic growth and social development in EMDEs. The relationship between GDP growth and HDI is complex and varies from country to country. It's important to note that economic growth and HDI are not necessarily directly correlated, as HDI takes into account factors beyond income, such as education and life expectancy. It highlights that while economic growth is essential, it is not the sole determinant of human development. Other factors, such as education, healthcare, and income distribution, play crucial roles in shaping a country's overall development.

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World Bank Open Data

hdr.undp.org

SUSTAINABILITY AND HUMAN DEVELOPMENT

Kasturi Shivam

Abstract

In the present decade contemporary with the fast growing world sustainability is the key concern of the economists and the policy makers. For any development be it in infrastructure, GDP or human sustainability must be there. Development at the cost of future generation would hamper in the long run. It is important to enlarge the choices and capabilities of Human through proper education and basic necessities but it is also equally important that this development must sustain in the long run. It must not be the case of inequality among generations. The 2011 Human Development Report argues that the urgent global challenges of sustainability and equity must addressed together. Policies must be formulated in such a way that could spur mutually reinforcing progress towards these interlinked goals. Bold action is need on both front, if the recent human development progress for most of the world's poor majority is sustained, for the benefit of future generations as well as for those living today.

***Keywords:** Sustainability, Human Development, UNDP.*

Introduction

The UNDP defined Human Development is about the real freedom ordinary people have to decide what to be, what to do and how to live. It was a concept that was developed by prominent economist Mahbub ul Haq and published the first Human Development Report in 1990 which was commissioned by the United Nations Development Programme. This approach focuses on the concept of the capabilities of the people. Analyzing the capabilities assessment was made how people are doing in a particular country. There are various indices to compare the

capabilities. Our capabilities are expanded and constrained by our own efforts and by the institutions and conditions of our society. People with extensive, well developed capabilities can enjoy a better lifestyle, whereas those poor in capabilities are less able to seize opportunities. Without basic capabilities, human potential remains unfulfilled.

But there must be a good balance between attaining Human Development and environmental carrying capacity. Too much human centered development might actually misleading us. Nature cannot be fully replaced by the developmental man made activities. So being cautious must be the utmost preference. Depleting natural resources recklessly for the sake of development will only lead to lopsided development for a short period of time as the development process will not sustain for the future generation. Hence Sustainable Development Goals (SDG) and education on environment is important for long lasting and equitable development through different generations. This paper tries to cover the importance of sustainability in human development frameworks.

Review Literature:

Klugman J., Human Development Report 2011. Sustainability and Equity: A better future for all (2011) employs to understand the need of sustainability in case of human development for the benefit of both the future generation and the present generation.

Neumayer, E., Human Development and Sustainability. New York. (2010) gives an overview of how Human Development Index can be linked with measures of both strong and weak sustainability.

Wang, Y., Sustainable human development means living in harmony with nature. (2020) put forward the concept of human development in re- conceptualized manner.

Objective of the paper:

1. To bring light on the importance of sustainability.
2. To portray the indexes of Human Development.
3. To explore the linkages between sustainability and Human Development.

Sustainability-why is it important for human:

The United Nations defined sustainable development in the Brundtland Report as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. As resources are finite

therefore we must use it conservatively and carefully to ensure that there is enough for future generation without compromising the present quality of life. Broadly there are two types of sustainability- weak sustainability and strong sustainability.

Weak sustainability assumes that natural capital and manufactured capital are essentially substitutable and considers that there are no essential differences between the kinds of well being they generate (Pelenc & Ballet, 2015). The only thing that matters is the total value of the aggregate stock of capital, which should be at least maintained or ideally increased for the sake of future generations (Solow,1993). In such a perspective: 'it does not matter whether the current generation uses up non-renewable resources or dumps Carbon-di-oxide in the atmosphere as long as enough machineries, roads and ports are built in compensation' (Neumayer,2003,para1). Such a position leads to maximizing monetary compensations for environmental degradations.

On contrary strong sustainability demonstrate that natural capital cannot be viewed as a mere stock of resources. There is a qualitative difference between manufactured capital and natural capital. Manufactured capital is reproducible and its destruction is rarely irreversible, whereas consumption of natural capital is usually irreversible. Moreover since manufactured capital requires natural capital for its production, it can never be a complete substitute for the biophysical structures of natural capital (Ekins et al., 2003). Thus an increase of future consumption is not an appropriate substitute for losses of natural capital. This raises the key issue of conserving natural capital for the sake of future generation i.e., intergenerational justice issue. Thus strong sustainability holds that certain elements of natural capital are critical due to their unique contribution to human well being. Critical natural capital highlights the need to maintain the ecological functioning of natural systems above certain thresholds of degradation in order to conserve the capacity of natural capital to provide the services which are critical for human existence and well being. Nevertheless strong sustainability does not state that all ecosystem services everywhere have to be sustained exactly as they are. Some assessments must be made of those services that play a particularly important role in supporting life and generating human well-being. And so policies for sustainability must be geared accordingly (Pelenc & Ballet, 2015).

Human Development and its dimensions:

The UNDP's first annual Human Development Report 1990, tells us that the perception of development has shifted - initially from economic development to socioeconomic development with a new emphasis on poverty and then to human

development. The report finds that a democratic political and social framework is not necessarily an impediment to the attainment of relatively high levels of human development (Hopkins, 1991). Human Development is the process of enlarging people's choices and allowing them to lead a long and healthy life, to be educated, to enjoy a decent standard of living as well as political freedom, other guaranteed human rights and various ingredients of self respect (UNDP, 1990).

The state of nation is often expressed through GDP (Gross Domestic Product), daily stock market results, consumer spending levels and national debt figures. But these numbers provide only a partial picture. The Human Development Index was developed as an alternative to simple money metrics. It is an easy-to-understand numerical measure made up of what most people believe are the very basic ingredients of human well-being health, education, and income. The first Human Development Index was presented in 1990. It has been annual feature of every Human Development Report since, ranking virtually every country in the world from number one (currently Iceland) to number 177 (currently Sierra Leone).

Human Development Index have three core indicators - a long and healthy life, access to knowledge and a decent material standard of living.

- **A long and healthy life-** Being alive is the most valuable capability people possessed. People must live in a healthy environment and healthy lifestyles to avoid premature death by disease or injury. In the HD Index, life expectancy at birth is the average number of years a baby born today is expected to live if current mortality patterns continue throughout his or her lifetime. This index represents one-third of the overall HD index.
- **Access to knowledge-** Access to knowledge is a crucial determinant of long term well being of a person. Education is a critical to people's freedom to decide what to do and who to be. Education builds confidence, self sufficiency and broadens the area of possibilities. Access to knowledge is measured using two indicators: school enrollment for the population age 3 and older, and educational degree attainment for the population 25 years and older. A one-third weight is applied to the enrollment indicator and a two-third weight is applied to the degree attainment indicator.
- **A decent standard of living-** Income is essential to meeting basic needs like food and shelter and also to move beyond these necessities. Income enables valuable options and alternatives and its absence can limit life chances and restrict access to many opportunities. Income is a means to attain a decent education, a safe clean living environment, security in

illness and old age. A decent standard of living is measured using median personal earnings of all full and part time workers.

Linkage between Human Development and Sustainability-

Human Development and sustainability are the two sides of the same of coin. Human development is essentially what sustainability advocates wants to sustain and without sustainability, human development is not true human development (Neumayer, Eric. 2010). An important aspects of rearticulating human development is to emphasize the need for fairness to nature and other living beings. A good balance between indigenous knowledge and modern science and technology can take us a long way towards sustainable human development, says Yanfen Wang.

The general process of human development are socioeconomic development, cultural change and the democratization and extension of civil rights. This can lead to human activities focusing only on what we need, regardless of the environmental carrying capacity and resulting in unsustainable human development. Such human-centred development is a common deficiency in human development nowadays. One of the major reasons is the lack of consideration of the environmental carrying capacity for long term development. Many essential resources are non-renewable resources but they are being unreasonably exploited. Unrestricted human activity has also caused increasing pollution, which significantly threaten the health and safety of human beings. Therefore, we must abandon the human centred development concept, advocate for the harmonious coexistence of humans and nature, rationally develop and utilize resources, pay attention to environmental issues and build the future of human development based on sustainable development.

Human-centred development might actually be misleading to us. Science and technology has greatly improved social productivity and liberated the labour force. For example, agricultural production can be maximized through reasonable and scientific cultivation. Scientific research can provide better seeds for planting, mechanized agriculture can reduce the burden on farmers' income. Furthermore, the advancement of science and technology has improved the efficiency of human labour and saved time can create additional value which can also boost farmers' income. Moreover progress in science and technology can effectively track climate change and predict natural disasters, helping us to face those challenges. All these advancements have greatly improve social resilience. However, such advancements also bring problems, in terms of contributing to global warming, climate extremes and pollution, which bring about more uncertainties in natural

laws. Therefore human development in the future should consider the effects of human activities on the natural laws (Yang. nd).

Conclusion

Education as well as science and technology is the foundation of human development. The significance of education for human development is reflected in two aspects- one is to increase social productivity from the perspective of production and the other is to promote the concept of sustainable development through environmental education. Education can help people use natural resources more efficiently. Environmental education may improve human awareness and participation in environmental protection, popularize environmental protection knowledge and skills and thus achieve sustainable development. Through education the inheritance and innovation of science and technology can be realized, continuously developed and strengthen and eventually effectively promote human development at no cost to the environment. Complementing indigenous knowledge with modern science and technology will hugely improve local livelihoods while keeping them balance with the local environment.

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HUMAN DEVELOPMENT AND EDUCATION

Kripali Kakati

M.A in Economics, M.ED
Graduate Teacher (Arts), Puranigudam Girls' High School

Abstract

The purpose of this paper is to explain the important relationship between education and development, Education in every sense is one of the fundamental factors of development. No country can achieve economic development without investment in human capital. Education enriches people's understanding of themselves and world. It improves the quality of their lives and leads to broad social benefits to individuals and society. It is essential for boosting people's productivity and creativity, as well as stimulating entrepreneurship and technical development .Human development is a complex interplay between biology, psychology and society. Education helps peoples in understanding themselves and their quality of life. In addition it plays a very important role in promoting economic and social progress and improving standard of living.

***Keywords:** Education, Human Development, Human Capital*

Introduction

Education is essential in economic development because it plays a crucial role in developing human capital, knowledge, skills, and abilities that contribute to economic growth and development. In addition, a well -educated man is more likely to be productive and innovative, which can drive economic development. Education can be viewed as a key aspect in development as well as a prerequisite for the broader nation of improved human capacities that is at the heart of development's meaning. Education is manifest perfection already in Man. It is comprehensive training one receive throughout one's life so as to have "life -

building, man- making, character making. On the other hand human development is about providing more freedom and opportunities to the people for living their lives as they wish. Therefore human development is a measure of the welfare of humans in a society and education is a prime leading piece for the development in a region.

Objectives

In the present study, the following are the objectives framed to achieve the research goals and fulfillment.

- To know the literacy rate through education in the progress of human development.
- To know the positive relationship between education and GDP to improve the life standard.

Methodology

The paper is descriptive in nature and secondary data and information have been used. The required secondary data and information have been collected from different books, journals, articles and sources like Economic Development, Competition Success review etc.

Review of Literature

A number of research work has been done from time to time on human development and education in India. Prior to 19th century, systematic human capital investment was not regarded as particularly significant in any country.

Education Commission (1966) recommended for effective programme on adult education in India which should provide for the rapid elimination of illiteracy by means of mass education and attention towards women, industrial workers, and other special groups, programs of correspondence studies.

J Bhuller (1976) made a study of the university student towards physical activity in relation to academic performance, intelligence, socio-economic status and personality characteristics. In his study he found that subjects with higher intelligence tends to have more favourable attitude towards physical activity.

E.V. Rathnaiah (1977) had emphasized on education, extent of its spread among the Tribal communities and the nature of structural constraints in a part of Adilabad district of Andhra Pradesh. In his study he presents the living condition of various tribes and low literacy rate prevailing among them and he also examined the various constraints responsible for low literacy rate.

P. Michael Penn (1997) explained the inter-relation between education and development of the society. He also discussed the role of World Bank in developing countries such as assist to school, equity of schooling, quality of schools and delays in educational policy and practices for effective and efficient school to meet the challenges of education.

UNESCO (1995) had stated that in the poorest regions of the world, women and girls are locked into vicious circles. Illiterate mothers produces illiterate daughters who are married off too early and thus enters into another vicious circle of poverty, illiterate rate, high fertility rate and early mortality rate etc.

Analysis of Literacy Rate Through Education in the Progress of Human Development :

Literacy is a powerful tool to improve the lives of people. It helps them to overcome the struggles of poverty. And empowers them to prosper independently. In India, we are still struggling to make our population 100%. Education plays a vital role in human capital, knowledge, skills and abilities that contributed to human development .

Some figures about literacy:

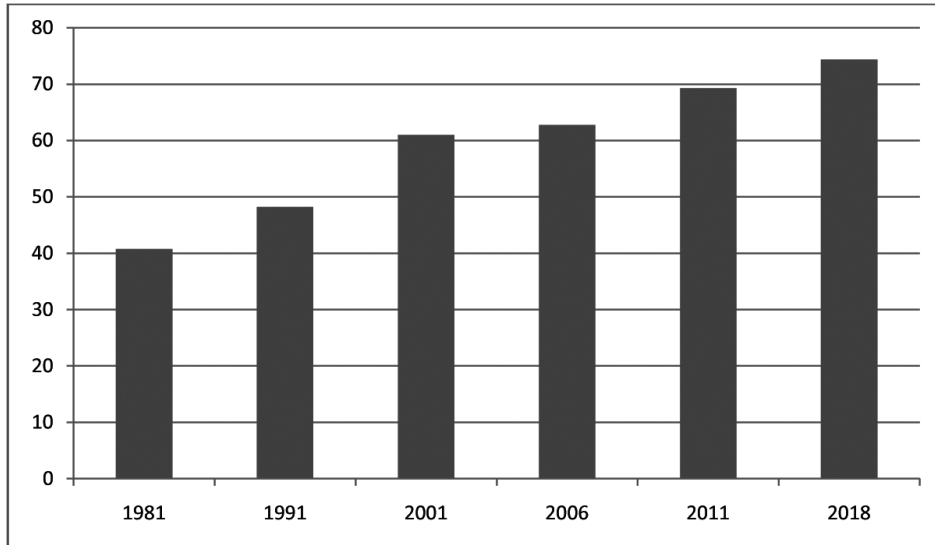
India's total literacy rate is 77.70% (2021 and 2022). And this weightage is achieved after a very long period of reform and policies.

In the year 1947 when India got its independence, the literacy rate was dismal. Only 18% of the overall population was literate. And the same weightage was even worse for females (only 8.86). From this percentage to the current literacy rate, India has covered a huge gap with a network of traditional .India's literacy rate state wise has increased considerably.

The table below shows the literacy rate India through education :

Year	Literacy Rate (percentage)
1981	40.76
1991	48.22
2001	61.01
2006	62.75
2011	69.30
2018	74.37

In Quest of Human Development



The figure shows that education is one of the major factor in economic development as it gradually increases the literacy rate from the year 1981 to 2018. This indicates that large percentage of the population can read and write, which suggests that there is widespread communication and complex problem-solving taking place. This, in turn, indicates a higher level of social and economic development in India.

Source: World Development Report, 2023

Analysis on positive relation between education and GDP in Human development:

Education is an investment in human capital formation and hence, plays a crucial role in the economic growth and development. The influence of human power resources is shown in the value of HDI which is able to influence the level of economic growth in the value of its GDP. Additionally, GDP is important because it gives information about the size of the economy and how the economy is performing. A higher GDP indicates the nation's economy is strong and growing steadily. According to the World Bank, increasing the average years of schooling by one year can increase a country's GDP growth and development by 0.37%. Similarly, increasing the literacy rate by 1% can increase a country's GDP growth by 0.3%

GDP growth estimated at 6.3% for 2023-24: FICCI Economic Outlook Survey. The govt should put all in efforts to provide primary education to every

In Quest of Human Development

one of age and then it can need off to the path of economic development. According to the World GDP Ranking 2023, India is the fifth- largest global economy.

The Indian government has taken several steps to improve the education sector in the country. The first major policy reform was the implementation of the Right to Education Act (RTE) in 2010. This led to a significant increase in the number of children attending school and an improvement in literacy rates across the country.

More recently, 2020, the government introduced the National Education Policy (NPE) 2020 seek to achieve a GER of 50% in higher education and 100% in preschool to secondary level education by 2030. The NPE will not only benefit the individual but will also contribute to the country's overall economic growth and development, leading to India's GDP growth rates.

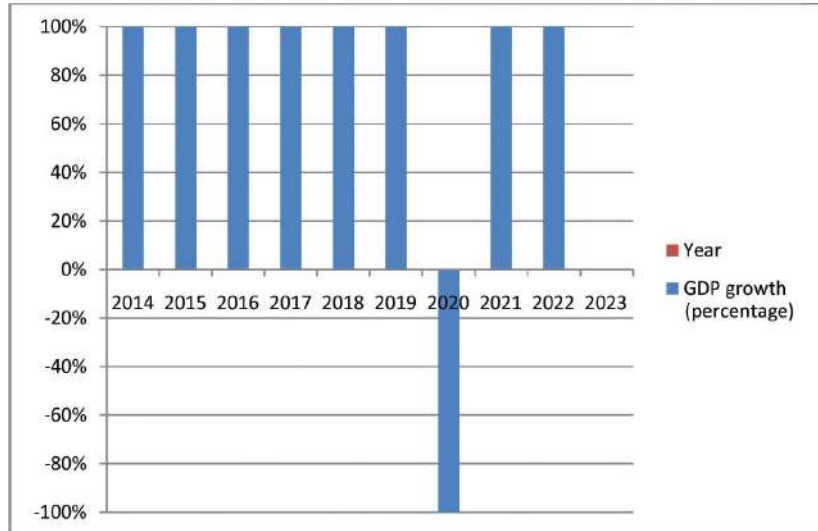
The table below show the past decade of GDP to monitor its economic progress closely:

Year	GDP growth (percentage)
2014	7.41%
2015	8.00%
2016	8.26%
2017	6.80%
2018	6.45%
2019	3.74%
2020	-6.60%
2021	8.68%
2022	7%
2023	6 to 6.8%

Looking at India's GDP growth rate over the last ten years, it is clear that the economy has shown resilience and improvement. After experiencing negative growth during the pandemic in 2020, the country's GDP growth rate has rebounded impressively, reaching 6.8% in 2023. India's HDI value of 0.633 places the country in the medium human development category, lower than its value of 0.645 in the 2020 report.

In accordance with the Human Development Report 2021-22, the rank of India is 132nd, among 191 countries.

In Quest of Human Development



Results

The paper presents evidence that education has direct and indirect effects on GDP and economic development. Educated workers immediately increase in national output and their marginal productivity rises as a result of their education. Moreover the more literate citizens a country has, the greater is its economic development. People who are literate can more easily develop skills that will help them in the workplace and its tends to increase in GDP and more GDP indicates economic development especially in India. Its means that increase in GDP indicates standard of living in human development.

Policy Measures and Suggestion

The findings and discussion of the study refer to some policy measures and suggestions as:

- i) Increase in Public Expenditure: Govt. should increase the expenditure for the expansion of education for greater social and economic welfare.
- ii) Awareness for Education: A growing awareness towards education will lead to an overall human development a country too.
- iii) Primary Education as Compulsory : Compulsory primary education for all should be taken as an important goal for the overall growth and development especially in under developed and developing countries like India.

- iv) Improving quality of Education: Samagra Siksha to improve school infrastructure and quality of education
- v) Incentive for Education: Government should take incentive measures like free primary education, free book, and providing nutritious food to attract the poor section of the society towards education.

Conclusion

The current situation of India clearly shows that although quite a lot of development has been made in improving the Human Development Index in India, the government of India aims for poverty reduction, no discrimination and better education for their people. However, still we need to focus on certain more important and pressing issues such as reducing hunger, improving maternal mortality rates, attaining gender equality and enabling access to fresh water and sanitation facilities for all. Here, education has a crucial role in the development of human resources. Educated and qualified people drive social and economic changes. Moreover the education system in India has seen many ups and downs, but at the same time it has produced some brilliant gems, who are raising the flags of India across globe. Hence education is very important in human development

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PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN) SCHEME'S SUCCESS STORIES AND AGRICULTURAL REVIVAL IN EIGHT STATES OF NORTH-EASTERN INDIA: AN OVERVIEW

Maikel Swargiary

Guest Faculty

Department of Economics

BHB College, Sarupeta

Abstract

The PM-KISAN scheme aims to provide financial supports to farmers for easing their credit and liquidity needs to facilitate timely access to agricultural inputs. The cash transfer under this scheme strengthens the financial capability of the beneficiaries to spend more money on the purchase of the agricultural inputs and useful in adoption of modern techniques in agriculture. The scheme has significantly helped those families and households who are relatively more dependent on agriculture and have poor access to credits. The objective of the PM-KISAN scheme is to supplement the financial needs of the small and marginal in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle. The objective of the PM-KISAN scheme is also to protect them from falling in the clutches of moneylenders for meeting such expenses and ensure their continuance in the farming activities. The scheme aims to strengthen the financial capability of the farmers in procuring agricultural inputs and encourage adoption of modern techniques in the crops to obtain optimum yield. The scheme is totally funded by the Government of India.

In this study we explore, how far the scheme has spread across the states. This work provides a comprehensive overview of the implementation of the PM-KISAN scheme in the eight states of north-

east India. The study will also shed light on the comparative study on the number of people availing the benefits of this scheme in different states. Moreover a gender wise analysis is also made in this direction. Through this publication, we also aim to create awareness about the PM-KISAN scheme among the farmers of north-east India. It is evident from the study that farmers of Assam have benefited more from the scheme as compared to other north eastern states. The percentage of male beneficiaries from the scheme is highest in Meghalaya with 96 % and the state with the lowest percentage of male beneficiaries from the scheme is Manipur with 45.8%.

Keywords: *North-east India, PM-KISAN, Agriculture, Farmers, Finance, Government*

Introduction

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme has emerged as a transformative initiative by the Government of India to reduce the financial burdens faced by small farmers across the country. This scheme aims to provide direct income support to farmers by granting them a fixed amount of financial assistance. The PM-KISAN scheme was launched on 24th February 2019 in Uttar Pradesh's Gorakhpur by the prime minister of India Narendra Modi by transferring the first installments of Rs. 2000 each to over one crore farmers. The PM-KISAN scheme seeks to provide income support to eligible farmers through direct bank transfers. Under this scheme, eligible farmers receive a financial assistance of Rs. 6000 per year in three installments. The scheme ensures that the funds reach the intended beneficiaries through Aadhaar based identification system which eliminates intermediaries and minimizes chances of corruption or leakage.

The north-eastern region states have traditionally faced various challenges in agriculture including limited access to credit, irrigation facilities, fragmented land holdings and inadequate market linkages. The PM-KISAN scheme aims to address these challenges by providing farmers with a stable and predictable source of income and enabling them to invest in farm infrastructure, agricultural inputs and improved farming practices. The eight states of north-east India namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura has witnessed the positive impact of this scheme on the lives of its farmers. Moreover, PM-KISAN scheme plays a crucial role in uplifting the socio-

economic conditions of farmers in the region. By augmenting the income of farmers it helps to reduce poverty and rural distress of the region. The increased financial stability empowers farmers to improve their livelihoods, children's education and healthcare and to the overall development of their communities.

Review of Literature:

1. Kumar P. and et al. study the awareness level of farmers towards the PM-KISAN scheme. The study result indicates that the PM-KISAN scheme had reached 30% farmers within three months of its implementation.
2. Akhilesh K. S. analyzed the impact of PM-KISAN scheme in India. The findings indicated that the PM-KISAN scheme has a substantial positive incremental impact on farmer's income and other macroeconomic indicators like output, government revenue, saving and trade.
3. Varshney D. et al. in their study "Pradhan Mantri Kisan Samman Nidhi Scheme and the adoption of modern agricultural technologies in Uttar Pradesh", explained the scheme targeting accuracy and correlated of farmers spending patterns.
4. Thegaleesan T. in his study made an attempt to seek the justification of the objectives of the PM-KISAN scheme.
5. Kavitha H. N. and et al. analyzed the performance of the state with respect to the implementation of a universal basic income program for farmers.

Objective:

1. To compare the beneficiaries of registered farmers from PM-KISAN scheme in the eight states of North-east India.
2. To compare the gender-wise beneficiaries of PM-KISAN scheme in the eight states of North-east India.

Methodology:

As per methodology is concerned basically secondary data and information is used. For this purpose journal, statistical handbooks are taken as assistance. Data for state-wise beneficiaries of North-East Indian farmers from PM-KISAN Scheme as on 30-11-2022 has been collected from the report of Ministry of Agriculture and Farmers Welfare (2023). The data for gender-wise total beneficiaries of North-East Indian farmers from PM-KISAN scheme has been

collected from the Ministry of Agriculture and Farmers Welfare. The paper therefore, follows the descriptive method. To analyze the objective mostly table and histogram is used.

Discussion on Findings:

Table-1: State-wise beneficiaries of North-East Indian farmers from PM-KISAN Scheme as on 30-11-2022

State	2018-19		2019-20				2020-21				2021-22				2022-23	
	1 st Period (Dec 18-March 19)	2 nd Period (April 9-July 19)	3 rd Period (Aug 19-Nov 19)	4 th Period (Dec 19-March 20)	5 th Period (April 20-July 20)	6 th Period (Aug 20-Nov 20)	7 th Period (Dec 20-March 21)	8 th Period (April 21-July 21)	9 th Period (Aug 21-Nov 21)	10 th Period (Dec 21-March 22)	11 th Period (April 22-July 22)	12 th Period (Aug 22-Nov 22)				
Arunachal Pradesh	1,815	6,988	42,724	62,898	89,275	90,141	91,854	91,856	92,706	92,968	94,565	-				
Assam	11,55,390	24,53,735	21,12,058	20,08,024	18,91,762	12,20,266	13,89,701	12,81,363	9,27,499	10,82,149	6,90,096	4,61,430				
Manipur	31,350	29,244	90,286	2,71,283	4,54,120	3,50,654	3,56,366	2,87,213	2,77,909	2,79,983	3,64,817	3,66,207				
Meghalaya	9,307	26,725	61,412	98,732	1,62,523	1,77,153	1,81,428	1,80,836	1,91,115	1,86,041	33,087	19,912				
Mizoram	27,075	52,684	65,532	62,766	1,24,447	1,31,984	1,45,309	1,00,906	1,04,170	96,172	86,498	87,146				
Nagaland	32,301	86,447	1,58,367	1,85,312	1,90,781	1,95,904	1,96,710	1,74,683	1,96,902	1,99,081	1,82,479	1,95,433				
Sikkim	-	1,980	4,007	1,633	5,645	6,090	7,914	9,452	9,754	9,686	9,486	955				
Tripura	1,51,863	1,80,865	1,89,194	1,83,202	1,99,345	2,10,166	2,19,008	2,12,331	2,14,747	2,19,098	2,33,191	2,31,169				

Source: Department of Agriculture and Farmers Welfare

From Table-1 it is observed that, in the first period of implementation of the scheme farmers from Assam were benefited most from the PM-KISAN scheme as compared to the other states of the region. The scheme was not implemented in Sikkim in first period. Also in second period the farmers of Assam were mostly benefited by the scheme. In the entire period of the scheme the farmers of Assam are mostly benefited from the scheme. It's main reason is because the number of population in Assam is higher than the other states of the region and the system of land in Assam is more suitable for agriculture than other states. This is because except Assam most of the states in North-east India are hilly area which is not suitable for crops but suitable for other cultivation. And as the Assam has the highest number of population many family depends on agriculture as their means of livelihoods. So, the number of beneficiaries from the scheme is also highest in Assam. While the number of farmers benefited from the scheme is lowest in Sikkim throughout the entire period of the scheme as on 30-11-2022. This is because of the reason that the Sikkim is the smallest state in terms of area than the other states of North-east India and the Sikkim is the state with the lowest number of population in the region. Also the most of the area in Sikkim are under hilly areas which are not suitable for agriculture. Therefore, most of the people of the state do not depend on agriculture as they will not gain more profit from the agriculture. So the number of beneficiaries of from the scheme is relatively low in the state. The number of farmers benefited from the scheme is also not too much larger in number for the state of Arunachal Pradesh. Arunachal Pradesh is the second lowest number of farmers benefited from the scheme while Manipur is the second highest number of farmers benefited from the scheme. The number of beneficiaries in other states such as Tripura, Nagaland, Meghalaya and Mizoram are in moderate numbers but lower than the beneficiaries of Assam and Manipur.

Table-2: State-wise total beneficiaries of North-East Indian farmers from PM-KISAN Scheme as on 30-11-2022

State	Total number of beneficiaries (in Lakh)
Arunachal Pradesh	7.58
Assam	166.73
Manipur	31.59
Meghalaya	13.28
Mizoram	10.85
Nagaland	19.94
Sikkim	0.66
Tripura	24.44

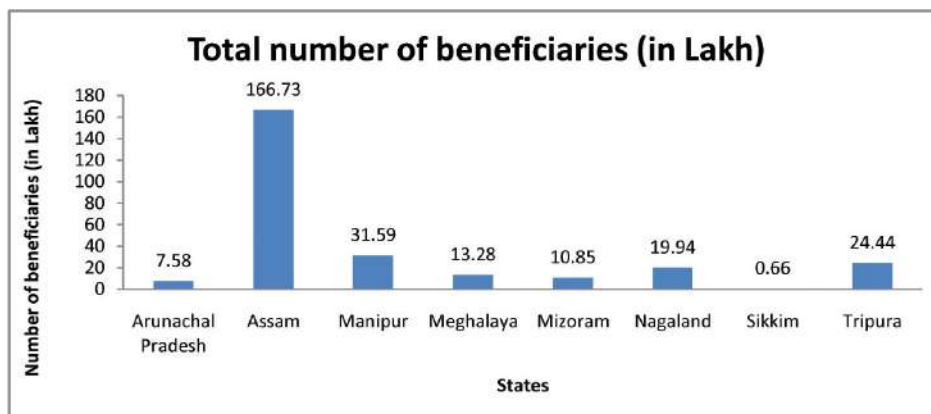


Fig. 1: State-wise total beneficiaries of North-East Indian farmers from PM-KISAN Scheme as on 30-11-2022

From Table-2 and Figure-3 it is observed that the Assam rank in 1st position in terms of farmers benefited from the scheme with total of 166.73 lakh beneficiaries in the North-east region of India. While Sikkim rank in the last position with lowest number of beneficiaries only 0.66 lakh benefited farmers from the scheme. Manipur lies in the 2nd position with the beneficiaries of 31.59 lakh farmers and Tripura placed in the third position with 24.44 lakh benefited farmers. Nagaland lie in 4th position with 19.94 lakh benefited farmers. Meghalaya and Mizoram lie in 5th and 6th position with 13.28 lakh and 10.85 lakh benefited farmers respectively. While Arunachal Pradesh placed 2nd position from bottom with the benefited farmers of only 7.58 lakh. But as compared to the earlier period of scheme the number of benefited farmers from the scheme is declining in the every eight states of the North-east India. If all the farmers of the region are benefited from the scheme then declining in number of beneficiaries is natural but if some farmers are still not benefited from the scheme than government must take necessary steps to benefits the remaining farmers from the scheme. Government should take a measures to collect the number of left out farmers from the scheme in the region so that they can also benefited from the scheme.

Table-3: Gender-wise total beneficiaries of North-East Indian farmers from PM-KISAN Scheme

State	Percentage of male beneficiaries under PM-KISAN scheme	Percentage of female beneficiaries under PM-KISAN scheme
Arunachal Pradesh	48.1	51.9
Assam	68.9	31.1
Manipur	45.8	54.2
Meghalaya	96	4
Mizoram	56.7	43.3
Nagaland	47.3	52.7
Sikkim	83.2	16.8
Tripura	78.2	21.8

Source: Ministry of Agriculture and Farmers Welfare

Table-3 and Figure-2 represents the percentage of male and female farmers benefited from the PM-KISAN scheme in the north eastern region of India. The percentage of male beneficiaries from the scheme is highest in Meghalaya with 96 % and the state with the lowest percentage of male beneficiaries from the scheme is Manipur with 45.8 %. The percentage of female beneficiaries from the scheme is highest in Manipur with 54.2 % and percentage of female beneficiaries from the scheme is lowest in Meghalaya with only 4 %. In Assam the percentage of male beneficiaries from the scheme is 68.9 % and percentage of male beneficiaries from the scheme is 31.1 %. The country or state where both females and males engage in the productive works developed rapidly. Especially female participation in different productive works develops faster. So, participation of the female in productive works is very important for the development of the country or region. Equal participation or contribution of both males and females is necessary for the growth and development of the economy. The state or central government are required to take necessary steps to make people aware about the PM-KISAN scheme so that it will encouraged the people to participate in the agricultural activities only then the country will be in a right position of development. The states where percentage of both male and female beneficiaries from the scheme is lower must take necessary steps to make people aware about the scheme. The states where participation percentage of both male and female in the agricultural activities is quite lower in number should increase

the participation percentage. As people of India is mainly dependent on agriculture the support of government to farmers are very important. If government gives importance and supports to farmers then the participation percentage of people in agricultural activities will definitely increase in a larger portion in the different states as well as the north eastern region of India.

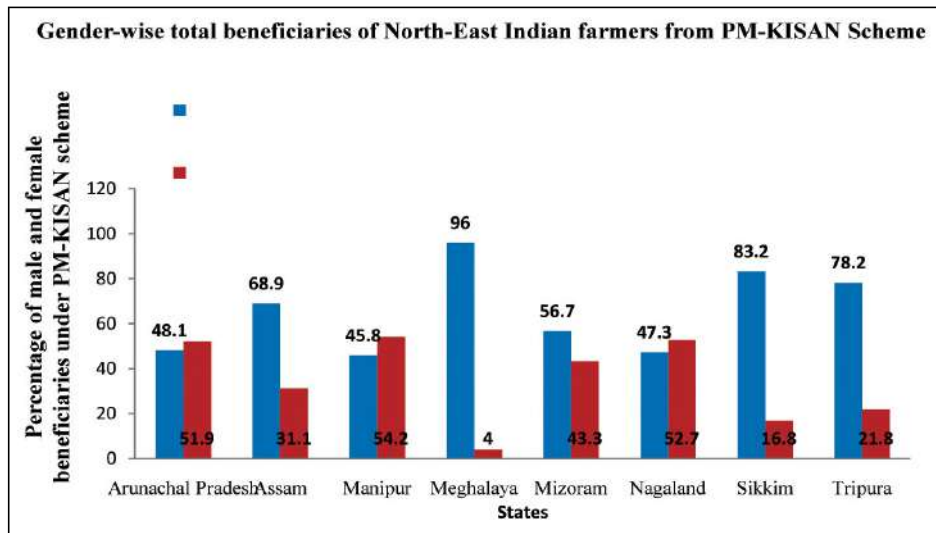


Fig. 2: Gender-wise total beneficiaries of North-East Indian farmers from PM-KISAN Scheme

Conclusions:

With the two objectives this paper tries to examine the coverage of PM-KISAN scheme in the north eastern states. It compares the number of beneficiaries across these states. Moreover, a gender wise comparison in this aspect has been made. We find that Assam is the only state in the north east region of India that benefited most from the scheme while Sikkim holds the bottom position in terms of number of beneficiaries. Our study also shows that the percentage of male beneficiaries from the scheme is highest in Meghalaya with 96 % and the state with the lowest percentage of male beneficiaries from the scheme is Manipur with 45.8%. In terms of female beneficiaries it is highest in Manipur with 54.2% and lowest in the state of Meghalaya with only 4%. It is expected that by investing the PM-KISAN financial assistance in productive investments farmers can be able to increase their income in the long term. This study shows evidence on the important role played by the scheme in enhancing

the financial positions of the farmers. However in some states women beneficiaries are very low therefore awareness should be spread across the region regarding the efficiency of the scheme.

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ASSOCIATION BETWEEN HUNGER AND CHILDREN HEALTH OUTCOME IN SOUTH ASIAN REGION: AN EMPIRICAL ANALYSIS

Mr. Manna Nath¹

Research Scholar

Department of Economics, Assam University, Silchar

Dr. Manash Roy²

Assistant Professor (Sr),

Department of Economics, Assam University, Silchar

Abstract

South Asian region is extremely vulnerable to hunger as evidenced by Global Hunger Index values during the last two decades. Nations in these regions are experiencing serious level of hunger over the years in relation to their other regional counterparts. However, assessing hunger through the lens of Global Hunger Index (2021) may not be a good practical strategy as the pioneers of this index have conceptualised hunger in terms of calorie undernourishment, child undernutrition, child chronic undernutrition and under five child mortality rate. The present paper tries to assess hunger in South Asia in terms of calorie undernourishment. It makes a departure from the conventional methodology on the ground that the other three indicators apart from calorie undernourishment are the outcome indicators, not reflecting hunger but could be the staple evils caused by hunger. The paper makes an attempt to compare the status of hunger in South Asia over different time periods. It also endeavours to explore whether there is any causal relationship between hunger defined in terms of calorie undernourishment and children health outcomes.

Keywords: *Hunger, Global Hunger Index, South Asian Region*

Background and Objectives of the Study:

South Asian Region is associated with serious level of hunger as reflected by higher global hunger index scores over the years. Her performance is slightly better than Africa South Sahara with a GHI score of 26.1 in contrast to Africa South Sahara's 27.1 (Global Hunger Index Report, 2021). Child undernutrition and child wasting are considered as the main culprits behind this in South Asia (UNICEF, WHO and World bank, 2021). The pioneers of global hunger index also support this as it is constructed in terms of calorie undernourishment, child undernutrition, child chronic undernutrition and under five child mortality rate. This is where the present study makes a severe criticism of global hunger index. It tries to assess hunger in South Asia in terms of calorie undernourishment. It makes a departure from the conventional methodology on the ground that the other three indicators apart from calorie undernourishment are the outcome indicators, not reflecting hunger but could be the staple evils caused by hunger. The paper makes an attempt to compare the status of hunger in South Asia over different time periods. It also endeavours to explore whether there is any causal relationship between hunger defined in terms of calorie undernourishment and children health outcomes.

Data Source and Methodology:

The present study is based on secondary data gathered from Global Hunger Index Report (2021). It tries to assess the level of hunger among South Asian countries over time by following Roy's methodology (2017) according to which hunger should be examined in terms of calorie undernourishment only. Roy (2017) developed this methodology for examining the incidence of hunger across major states of India.

We have also made an attempt to develop a Children Health Outcome Index (CHOI) with the help three indicators viz. child undernutrition, child chronic undernutrition and under five child mortality rate. These three indicators are included in Global Hunger Index but left by us with the argument already put forward in section 1.1. Children Health Outcome Index (CHOI) is developed in line with UNDP's Max-Min criteria of constructing HDI. HDR (1990) which involves following two steps.

Step I: Calculating variable index by using the following formula

$$\text{Variable Index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}} \dots; 0 \leq \text{Variable Index} \leq 1$$

Step II: Calculating CHOI as a simple average of variable indices as follows

$$\text{CHOI} = \frac{\text{Child Undernutrition} + \text{Child Chronic Undernutrition} + \text{Under Five Child Mortality Rate}}{3}$$

$$0 \leq \text{CHOI} \leq 1$$

In order to investigate whether hunger is the cause of deterioration in children health outcome, we make use of simple regression analysis where Children Health Outcome Index is taken as a dependent variable and calorie-undernourishment is considered as an explanatory variable.

Results and Discussions:

This section portrays the results regarding hunger levels faced by South Asian nations and their children health outcomes for four time periods viz. 2000, 2006, 2012 and 2021. It also incorporates four separate regression results related to the effect of hunger on children health outcomes for the said time periods.

Table 1: Calorie Under-nourishment in South Asian Nations in percentage

Nations	Year 2000	Rank	Year 2006	Rank	Year 2012	Rank	Year 2021	Rank
Afghanistan	47.8	6	33.3	6	28.2	6	25.6	6
Bangladesh	15.9	2	13.8	2	15.5	4	9.7	3
India	18.4	3	19.6	5	15	3	13.5	5
Nepal	23.5	5	15.9	3	8.1	1	4.8	1
Pakistan	21.1	4	16.4	4	15.9	5	12.9	4
Sri Lanka	16.9	1	14.1	1	10.3	2	6.8	2
Mean	22.12		17.92		14.34		10.59	
Standard Deviation	21.84		13.57		12.65		13.19	

Source: Global Hunger Index Report, 2021; Mean and Standard Deviation values are calculated by the Authors

South Asian region as a whole shows a noteworthy improvement as percentage of calorie under-nourishment persons have declined from 22.12 per cent in 2000 to 10.59 per cent in 2021 as depicted from Table 1. In the year 2000, calorie-undernourishment in Nepal and Afghanistan are found as higher than regional average while it is greater than regional average for India and Afghanistan

in 2006. The situation is rather disappointing in the year 2012 as except Nepal and Sri Lanka, the rest four South Asian nations are embraced with higher than regional average figure of under-nourishment. So far as the latest year 2021 is concerned, three nations viz. India, Afghanistan and Pakistan have achieved figures of calorie-undernourishment greater than South Asia average. Values of standard deviation in Table 1 reveals that inter-nation disparities in South Asia with regard to prevalence of hunger is declining over the years though in relation to the year 2012, the region has witnessed a negligible rise in 2021. However, the pace of decline is not same for all the countries. For instance, India, which is considered to be the super-giant of South Asia has showcased a dismal performance in this regard. Her ranking is very poor in current time just better than that of Afghanistan. Sri Lanka is cutting edge over under-nourishment from the very beginning although in last two referred years i.e., in 2012 and 2021, she lost her first rank to Nepal by a mere figure of 2.2 and 2 per cent respectively. Afghanistan has secured last position in all the years, although one can't overlook her brilliant effort in lowering the level of hunger in terms of calorie under-nourishment from 47.8 per cent in the year 2000 to 25.6 in 2021.

Table 2: Children Health Outcome in terms of CHOI Values in South Asian Nations

Nations	Children Health Outcome Index (CHOI) Values							
	Year 2000	Rank	Year 2006	Rank	Year 2012	Rank	Year 2021	Rank
Afghanistan	0.25	4	0.26	6	0.19	2	0.16	3
Bangladesh	0.24	3	0.21	2	0.20	3	0.14	2
India	0.27	6	0.25	5	0.20	3	0.18	5
Nepal	0.26	5	0.23	4	0.19	2	0.16	3
Pakistan	0.22	2	0.22	3	0.22	4	0.17	4
Sri Lanka	0.12	1	0.12	1	0.12	1	0.11	1

Source: Calculated by the Authors

Table 2 indicates that Sri Lanka is doing well in terms of children health outcome for all the referred years. Here again the big giant India displays horrible performance. Apart from the year 2012, her ranking is not up to the mark. She has secured last position among the South Asian nations in the years 2000, 2006 and 2021. This is really a case of lopsided development in India as she is growing

on the one hand but on the other hand, not being able to cut short her socio-economic obstacles at a great pace.

Table 3: Regression Result for the Year 2000

Dependent Variable: Children Health Outcome Index (CHOI)				
Explanatory Variable	Coefficient	Standard Error	t	P > t
Percentage of Undernourished Persons	0.0013	0.00219	0.61	0.575
Constant term	0.1947	0.05763	3.38*	0.028
$r^2 = 0.0851$				

Source: Calculated by the Authors, * represents significant at 1 per cent level of significance

Table 3 shows that calorie undernourishment has a positive impact upon children health outcome though it is not statistically significant. The constant term is however statistically significant meaning that children health outcomes is influenced by other factors which are not included in the model. A low r^2 value indicates a bad fit of the model.

Table 4: Regression Result for the Year 2006

Dependent Variable: Children Health Outcome Index (CHOI)				
Explanatory Variable	Coefficient	Standard Error	t	P > t
Percentage of Undernourished Persons	0.0040	0.0027	1.47	0.214
Constant term	0.1390	0.0547	2.54**	0.064
$r^2 = 0.352$				

Source: Calculated by the Authors, ** represent significant at 5 per cent level of significance

Table 4 repeats the same story as prevailed in Table 3. It reveals that in the year 2006 also hunger defined in terms of calorie under-nourishment does not have any statistically significant impact upon health outcomes of the children but the constant term comes out to be statistically significant at 5 per cent level of significance. However, there is some improvement in the value of r^2 as visible from Table 4. This value is not a bad one keeping in mind the cross-section nature of the study.

Table 5: Regression Result for the Year 2012

Dependent Variable: Children Health Outcome Index (CHOI)				
Explanatory Variable	Coefficient	Standard Error	t	P > t
Percentage of Undernourished Persons	0.0015236	0.0023476	0.65	0.552
Constant term	0.1630507	0.0393418	4.14*	0.014
r ² = 0.0953				

Source: Calculated by the Authors, * represents significant at 1 per cent level of significance

Table 5 shows that although the association between calorie-undernourishment and children health outcome is having expected sign but this association is not statistically significant. Like previous two years, constant term in this model for the year 2012 is also statistically significant. A very low r² value gives the indication of a reasonably bad fit of the model.

Table 6: Regression Result for the Year 2021

Dependent Variable: Children Health Outcome Index (CHOI)				
Explanatory Variable	Coefficient	Standard Error	t	P > t
Percentage of Undernourished Persons	0.0013	0.001568	0.83	0.453
Constant term	0.1374	0.021868	6.29*	0.003
r ² = 0.1468				

Source: Calculated by the Authors, * represents significant at 1 per cent level of significance

Table 6 shows statistically insignificant association between calorie-undernourishment and children health outcome in the year 2021. Like previous two years, constant term in this model for the year 2012 is also statistically significant. A very low r² value gives the indication of a reasonably bad fit of the model.

Summary of the Findings and Concluding Remarks:

The present paper attempts to assess the status of hunger across South Asian nations in terms of calorie-undernourishment. The study finds that South Asian region as a whole shows a noteworthy improvement as percentage of

calorie under-nourishment persons have been declining over time. Inter-nation disparities in South Asia with regard to prevalence of hunger is declining over the years though in relation to the year 2012, the region has witnessed a negligible rise in 2021. Among the South Asian nations, Sri Lanka and Nepal are performing better so far as reduction of hunger is concerned. Afghanistan though sits at the bottom during the study period but decline in her starvation level over the years is quite remarkable. Nations like Bangladesh and Pakistan are moving steadily towards cutting short of hunger as revealed from the results of the study. The most shocking picture of hunger in South Asia Region is faced by India, which is considered to be the super-giant of the region. She has showcased a dismal performance in this regard as her ranking is very poor in current time just better than that of Afghanistan. Moreover, the rate of decline of hunger is also very slow in India. Sri Lanka is doing well in terms of children health outcome for all the referred years. Here again the big giant India displays horrible performance. Apart from the year 2012, her ranking is not up to the mark. This is really a case of lopsided development in India as she is growing on the one hand but on the other hand, not being able to cut short her socio-economic obstacles at a great pace. Regression results indicate that children health outcomes are not significantly affected by calorie-undernourishment in South Asia. Thus, to conclude, the status of hunger in South Asia is serious but it has signs of improvement over the years.

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EMPOWERING CHANGE: THE VITAL ROLE OF CIVIL SOCIETY AND GRASSROOTS MOVEMENTS IN PROMOTING SUSTAINABLE DEVELOPMENT AND HUMAN WELL-BEING

Pori Borah

Ex PG Student of Gauhati University

Abstract

Civil society and grassroots movements have a crucial role to play in promoting sustainable development. With the emergence of environmental issues and socio-economic disparities, the impact of NGOs and passionate social activists cannot be overlooked. This study uses a mixed-method approach to comprehensively investigate the techniques used by these organizations in their pursuit of sustainable development objectives, based on official data concerning the distribution and activities of NGOs across various districts in Assam. This research goes beyond the quantitative data, as it includes qualitative insights gained through interviews with active social workers who are dedicated to protecting natural resources and promoting sustainable development for overall human well-being. These interviews provide a human perspective that complements statistical analysis by shedding light on the motivations, challenges, and accomplishments of people on the ground. The findings of this research reveal that civil society and grassroots movements make a significant contribution to sustainable development by driving change at local level.

Keywords: *Civil society, Grassroots movement, Sustainability, Human well-being, Nature*

Introduction

Assam, a northeastern state in India is known for its rich biodiversity, diverse art forms, and socio-economic challenges. In recent times, sustainable development has emerged as critical aspect aimed at striking a balance between economic

growth and environmental conservation. This research paper delves into the multifaceted role of civil society organization and grassroots movements in promoting sustainable development across different districts in Assam. . Drawing from a combination of official data collected from registered NGOs operating in the region and in-depth interviews conducted with key stakeholders, this study seeks to shed light on the significant contributions and impact of grassroots movements in pursuing sustainable development aspirations. By examining the symbiotic relationship between civil society, grassroots initiatives, and sustainable development issues, this research aims to provide a comprehensive understanding of the dynamics at play for the overall well-being of the people in Assam.

Objectives

- a. To identify and assay the strategies taken by civil society associations to promote sustainable development.
- b. To pierce the impact of grassroots movements on community commission in the environment of sustainability.
- c. To examine the crucial challenges faced by grassroots movements in championing for sustainable programs.

Materials and Methods

This research comprises a descriptive study that leverages secondary data sourced from official websites and qualitative insights acquired through interviews with social activists, which are subsequently analyzed in a descriptive manner. By employing straightforward average calculations, this paper endeavors to elucidate the distribution of registered non-governmental organizations (NGOs) across various sectors and present this analysis in a descriptive format.

Analysis and Discussion

1. Civil Society:

Civil society plays a critical role in promoting sustainable development by acting as a driving force for positive change and holding governments and other entities accountable for their actions. Non-governmental organizations (NGOs), community groups, and individuals are at the heart of civil society, working together to address a wide range of social, environmental, and economic issues. These organizations often possess technical expertise, resource, and a strong sense of purpose, enabling them to advocate for sustainable programs, engage in grassroots initiatives, and provide essential services that governments may not offer. Civil

society also fosters transparency, participation, and inclusivity, ensuring that diverse stakeholders have a voice in decision-making processes. By raising awareness, mobilizing resources, and providing support, civil society can push for environmentally responsible practices, equitable economic growth, and social justice, all of which are essential components of sustainable development. This active engagement helps bridge the gap between policy expression and implementation, resulting in more holistic and effective strategies to address global challenges like climate change, poverty and inequality. This research paper conducts an in-depth analysis of registered non-governmental organizations (NGOs) operating across different sectors, with the primary objective of understanding the strategies they employ in advancing sustainable development, including economic growth, environmental stewardship, and educational improvement. The core focus of this analysis is to shed light on the extent to which these NGOs prioritize their efforts in the domains of economics, education, environment, and health. Through a meticulous examination, this research paper aim to discern which sectors these organizations generally emphasize and, conversely, which sectors remain inadequately attended to, highlighting potential areas for improvement.

NGOs have historically emphasized a multifaceted approach, addressing various aspects such as profitable development and environmental sustainability. They have implemented a range of strategies and enterprises aimed at enhancing these sectors. To analyze the strategies employed by the 2800 registered NGOs in Assam, we categorized them based on sectors, including terrain, education, poverty relief, microfinance, animal husbandry, health and family welfare, and women's empowerment. We also determined the number of NGOs engaged in each sector using a simple average computation. Of the registered NGOs, 36.1% are engaged in the environmental sector, 66.25% are engaged in education sector, 44.7% are engaged in poverty relief, 13% are engaged in microfinance, 26.39% are engaged in animal husbandry sector, 39.57% are engaged in agricultural sector, 53.60% are engaged in health and family welfare sector, and only 2% are engaged in women's empowerment.

In the figure1, the chart shows that the largest percentage of NGOs, 66.25%, are engaged in the education sector. The health and family welfare sector and the environmental sector also have a significant number of NGOs engaged in them, at 53.60% and 36.1%, respectively. The poverty relief and agricultural sectors also have a considerable number of NGOs, with 44.7% and 39.57% of NGOs engaged in these sectors, respectively. The remaining sectors, including microfinance, animal husbandry, and women's empowerment, have a much lower

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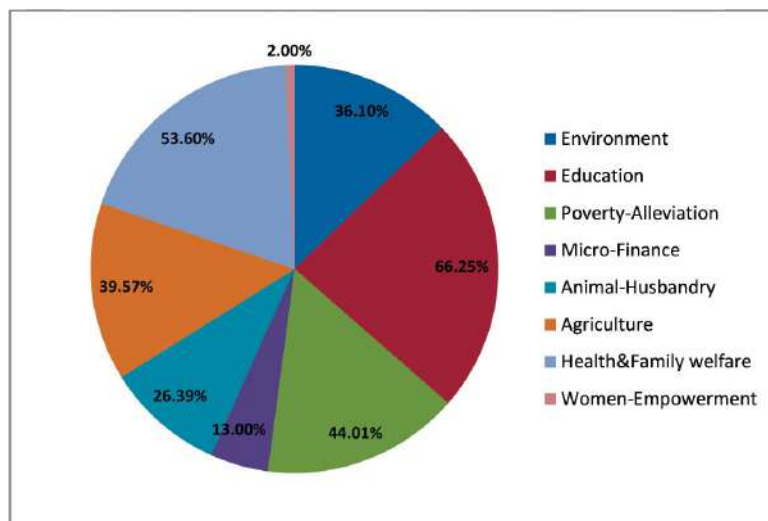


Figure 1: Sector wise distribution of NGOs

Calculated by the author from the secondary data collected from official website

Source: <https://ngodarpan.gov.in/>

percentage of NGOs engaged in them, at 13%, 26.39%, and 2%, respectively. Overall, the pie chart highlights the sectors where NGOs are most active in Assam and provides a clear visual representation of the data.

2. Grassroots Movements:

Grassroots movements are often the catalysts for social change, originating at the community level and driven by the collective power of ordinary individuals. These movements are characterized by their bottom-up approach, where local citizens come together to address pressing issues or advocate for change in their immediate surroundings. Unlike top-down initiatives, grassroots movements rely on the passion, dedication, and community engagement of their participants, who work collaboratively to effect positive change. Grassroots movements can encompass a wide range of causes, from environmental conservation to civil rights, and they are known for their capacity to ignite societal transformation by mobilizing the collective voices and actions of those who share a common vision for a better, more equitable world. An example of a successful grassroots movement promoting sustainable development is the Chipko Movement in India. In the 1970s, local villagers, primarily women, in the state of Uttarakhand, then a part of Uttar Pradesh rallied to protect their forests from deforestation by hugging trees to

prevent them from being cut down. This movement not only conserved the region's forests but also raised awareness about the importance of sustainable forestry and environmental conservation. It led to policy changes and a shift towards more sustainable land-use practices in the area. Another example is the anti-nuclear movement in Germany in the 1970s and 1980s. Grassroots activists and concerned citizens came together to protest the use of nuclear energy, leading to the formation of the Green Party and influencing government policies. This movement played a pivotal role in Germany's decision to phase out nuclear power and invest in renewable energy sources, contributing to the country's commitment to sustainable development.

In our state, numerous grassroots organizations have been successful in raising awareness and actively working towards environmental conservation in Assam. Thanks to their efforts, many trees have been saved from unnecessary felling. These organizations are highly dedicated to preserving nature and are often informed about unauthorized gas pipelines. More success stories will come our way, inspiring others to take action and contribute to sustainable development efforts.

Grassroots movements play a crucial role in promoting sustainable development. The impact of these movements is multifaceted and can be evaluated as follows:

1. **Community Empowerment:** Grassroots movements empower local communities to take initiatives to protect local resources. By involving local people, these movements foster a sense of responsibility, leading to more effective and lasting change.
2. **Local Knowledge and Contextual Solutions:** Grassroots movements recognize the importance of local knowledge and tailor solutions to the specific needs and contexts of communities. This results in more practical and relevant strategies for achieving sustainability.
3. **Promote awareness:** Grassroots initiatives also focus on raising awareness about environmental and social issues. They educate communities about the importance of sustainable practices, creating a foundation for informed decision-making.
4. **Influence government policy:** Grassroots movements can influence policies at various levels of government. By encouraging people and presenting a unified voice, they can push for legislative changes that support sustainable development goals.
5. **Utilization of Resources:** These movements promote responsible resource allocation, including sustainable agriculture, water conservation, and

renewable energy adoption. By doing so, they contribute to environmental preservation and reduce carbon footprints.

6. **Social Justice:** Grassroots movements often focus on social inclusivity and equality. They aim to remove social injustices and gender disparities, ensuring that sustainable development benefits all members of the community.
7. **Resilience Building:** Grassroots movements help communities become more resilient in the face of environmental challenges, such as climate change and natural disasters. They encourage them to take initiatives to protect nature and reduce vulnerability.
8. **Economic Development:** Grassroots movements employ sustainable practices that can lead to economic opportunities, such as eco-tourism, small-scale agriculture, and artisanal crafts, which support local livelihoods and reduce poverty.
9. **Long-Lasting Impact:** Grassroots movements tend to focus on long-term sustainability rather than short-term gains, creating a lasting impact that extends beyond immediate needs.
10. **Bottom-Up Accountability:** By involving local communities in decision-making processes, grassroots movements hold stakeholders accountable for their actions, ensuring that development projects are transparent and aligned with community interests.

In summary, grassroots movements are integral tools for promoting sustainable development due to their localized, inclusive, and community-driven approach.

Grassroots movements have achieved notable successes, yet they confront a myriad of challenges, many of which interviewers have expressed deep dissatisfaction with, particularly in their ability to shield against harmful activities perpetrated by unscrupulous individuals. These challenges often stem from the constraints posed by narrow-minded thinking.

Grassroots movements play a crucial role in empowering communities by advocating for social, political, or environmental change from the ground up. However, they often face a variety of challenges that can impede their progress. Here's an elaborate description of some of these challenges:

1. **Lack of Resources:** Grassroots movements typically operate on limited budgets and rely on volunteers. They are unable to organize, raise awareness, and effectively compete with well-funded opposition because of having limited resources.

2. **Limited Information:** Grassroots organizers may struggle to access essential information and data to support their cause. These can hinder their ability to make informed decisions, engage the public, and communicate their message effectively.
3. **Resistance from Established Entities:** Grassroots movements often face opposition from established entities, such as corporations, government bodies, or interest group, that have a vested interest in maintaining the status quo. These entities may employ various techniques to undermine the grassroots movement.
4. **Legal Obstacles:** Grassroots movements may encounter legal barriers or government regulations that limit their ability to reveal, advocate, or organize. These obstacles can stifle their efforts to empower communities through legal means.
5. **Public Apathy:** Mobilizing public support can be challenging, as many people may be apathetic or uninformed about the issues the movement is addressing. Building awareness and generating interest is an ongoing struggle.
6. **Internal Conflict:** Grassroots movements can sometimes suffer from internal conflicts and divisions, which weaken their collective impact. Differences in goals, strategies, or leadership can undermine the unity of the movement.
7. **Repression and Persecution:** In some cases, grassroots activists face repression, harassment, or even violence from authorities or opposing groups. Such threats can deter individuals from participating and create a climate of fear.
8. **Sustainability and Burnout:** Maintaining the momentum of a grassroots movement over the long term can be challenging. Burnout among volunteers and organizers is a common issue, and sustaining interest and commitment can be difficult.
9. **Communication Barriers:** Effective communication is essential, but grassroots movements may struggle to reach a broader audience due to language barriers, media bias, or social media algorithm limitations.
10. **Measuring Impact:** It can be challenging to quantify and demonstrate the impact of grassroots efforts, making it more difficult to garner support and resources for the cause.

Despite facing numerous challenges, grassroots movements remain a powerful catalyst for positive change in communities across the globe. Through their unwavering dedication, perseverance, and innovative approaches, they have

proven to be effective in overcoming obstacles and empowering communities towards progress and development

Conclusion

This research paper highlights the crucial role played by civil society and grassroots movements in advancing sustainable development in the unique context of Assam. The study offers a comprehensive analysis of the benefits and challenge associated with the strategies utilized by these entities and concludes that they are indispensable agents of change in a region marked by diverse challenges. The decentralized, community-driven approaches of civil society and grassroots movements empower local populations and foster environmental conservation. However, there are concerns related to the need for effective coordination and potential limitations in scale. Nevertheless, this study underscores the importance of leveraging the creativity, resilience, and determination of civil society and grassroots movements in promoting sustainable development in Assam. As the region continues to navigate the complex interplay of economic growth, environmental preservation, and social equity, these entities stand as beacons of hope and catalysts for positive change. Their strategies, when employed judiciously, offer a path forward towards a more sustainable and prosperous future for Assam.

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WOMEN LITERACY: AN INDICATOR OF SOCIO-ECONOMIC STATUS IN RURAL AREAS OF ASSAM

Pubali Goswami

Ex Student, Department of Education
Cotton University, Guwahati

Abstract

The present study reveals that in rural areas of Assam, women literacy can be regarded as a major influential indicator of socio-economic status for a sound and healthy society. As we know that in many areas of rural Assam, till now the literacy level of women are very low in comparison to male counterparts. Majority of the people from rural areas accept that females are born to get married and confined within household activities. Such kind of low mentalities do not allow girls/women to acquire formal education. Unknowingly the socio-economic status of women as well as society diminishes. This study mainly focuses on the different sources of secondary data while analyzing informations on concerned topic. Before starting the study, objectives are also determined accordingly to develop a fruitful study on this very presently relevant topic.

Keywords: *Women literacy, Socio-economic status, Rural Assam, Formal education, Secondary data.*

Introduction

"If you educate a man you educate an individual, however, if you educate a woman you educate a whole family."

– **Pandit Jawaharlal Nehru**

In a developing country like India, women must be educated for the upliftment of the society as well as the nation. According to the present status, India's sex ratio is confined within 1020 females against per 1000 males. It clearly signifies

population of female are greater than the male personals in India. A society can not accelerate proper development without the balanced and equal participation from both males and females. Thus in India, sound and healthy participation from women should be greatly emphasized.

Literacy and educational attainment is considered to be the hallmark of modern society(Kar and Sharma, 1994). The term 'literate' simply refers those people who can read and write. An educated person may not be considered as a literate, but a literate person can be regarded as an educated person. The concept 'Women literacy' is now become very important topic to discuss. From the ancient period, women have been suffering from lots of ignorance and dominance by the other members of the society. In that time, females were not permitted to take formal education along with the male counterparts. It was considered that women are born to get married and do only household activities. At that time when a girl was born, after attaining puberty they were forced to get married according to the rules and restrictions of the society. Marriage at the early age leads to higher fertility which increases high rate of maternal as well as child mortalities. At present, though literacy rate of women are gradually increasing, in rural areas majority of the women are still lagging behind to grasp it. Without literacy, they are depriving from getting a better socio-economic position in the society. Therefore, women must be literate to get equal value, freedom from legal and political restrictions, remove superstitious beliefs, respect from the society, financial independence to fulfill self-desires along with establish own identity in the society.

Dynamics of Women Literacy (Scenario of pre-independence and post-independence era)

Table No. 1: Progress of Literacy in Assam (1901-2011)

Year	Literacy Rate (In Percent)			Gender Differentials in Literacy
	Person	Male	Female	
1901	4.71	7.45	0.59	6.86
1911	5.59	9.97	0.77	9.27
1921	7.11	12.22	1.40	10.82
1931	8.57	14.40	1.87	12.53
1941	13.14	20.76	4.38	16.38
1951	21.73	32.25	9.48	22.77
1961	32.98	44.28	19.63	24.65

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1971	34.60	44.31	23.52	20.79
1991	52.89	61.87	43.03	18.84
2001	63.30	71.93	56.03	15.90
2011	72.19	77.85	66.27	11.58

Source: Calculated on the basis of data from 'Census of India'.

Literacy and educational attainment of population specially of women are considered to be the basic ingredients of socio-economic development of any society. In comparison to other parts of the country, Assam is lagging much behind in respect of literacy and education. The progress of literacy in Assam was slow in pre-independence period. In 1901, about 96 percent of the state's population was illiterate. So far 1901-1911 census report of Assam are concerned, there was hardly a literate woman per 100 women in the state. The women illiteracy rate came down to only 96 percent in comparison to general illiteracy rate of 87 percent in 1941. In the pre-independence period, there was no positive cum productive effort for spread of education in Assam.

The traditional society of rural Assam was dominated by religious dogmas, prejudices and social rules in every aspect i.e. medical sector, drinking water etc in pre-independence era and it has been gradually decreasing in post-independence period due to rising levels of literacy and education, more particularly among the women. After independence, during the period of six decades i.e. 60 years(1951-2011), the women literacy rate increased from 9.48 percent to 66.27 percent as opposed to general literacy rate from 21.73 percent to 72.19 percent respectively (table no 1). The progress of literacy and educational development of Assam is essentially a post-independence event or phenomenon. But unfortunately, even after 63 years of independence i.e. to 2011, about more than 30 percent of women population is illiterate. There are so many variations of literacy pattern in respect of rural-urban, male-female and different social components in Assam.

The urbanization process in agro-based Assam has been extremely slow. According to 2011 census, 86 percent population live in rural Assam. There is a negative correlation between p.c. of rural population and p.c. of literate women population.

Table No. 2 District-wise p.c. of Literacy, Assam, 2011

Sl No	Name of the Districts	Percentage of Literacy
1.	Nagaon	72.37
2.	Dhubri	58.34
3.	Sonitpur	67.34
4.	Cachar	79.34
5.	Barpeta	63.81
6.	Kamrup (Rural)	75.55
7.	Tinsukia	69.66
8.	Dibrugarh	76.05
9.	Kamrup (Metro)	88.71
10.	Karimganj	78.22
11.	Sibsagar	80.41
12.	Jorhat	82.15
13.	Golaghat	77.43
14.	Lakhimpur	77.20
15.	Goalpara	67.37
16.	Morigaon	68.03
17.	Karbi-Anglong	69.25
18.	Baksa	69.25
19.	Darrang	63.08
20.	Kokrajhar	65.22
21.	Udalguri	65.41
22.	Nalbari	78.63
23.	Bongaigaon	69.74
24.	Dhemaji	72.70
25.	Hailakandi	74.33
26.	Chirang	63.55
27.	Dima Hasao	77.54

Source: Population Census 2011
(<https://www.census2011.co.in>)

According to 2011 census, the literacy rate in the state vary from 58.34 percent in Dhubri to 88.71 percent in Kamrup Metro (table no 2). General literacy as well as women literacy rate is found to be significantly high in the urbanized

and socio-economically advanced district like kamrup metro, Jorhat, Sivsagar and Cachar. The socio-economically backward districts like Dhubri, Barpeta, Darrang, Chirang, Kokrajhar and Karbi-anglong, where either non-indigenous muslims or tribal people constitute a considerable proportion of total population shows the significantly low literacy rate. The p.c. of literacy is also high in Dima-Hasao district due to dominance of Christianity.

Assam along with NE India is lagging far behind in respect of socio-economic development in pre-independence period due to different factors. Her isolated location, lack of capital, very low level of transport and communication system, lack of industrialization, very low level of trade and commerce, lack of educational institutions, very low level of urbanization etc are some of the causes of lower p.c. of general as well as women literacy in Assam. At the time of independence there was no any university in NE India including Assam. Therefore the women literacy as well as general literacy was very low in that period.

On the other hand, the educational scenario in NE India including Assam is gradually increasing. The number of primary, secondary, higher secondary and higher educational institutions are gradually increasing. The different types of technical institutions like Guwahati IIT, Engineering colleges, medical colleges, Polytechniques, Ayurvedic colleges, Veterinary colleges, Sericulture colleges, Horticulture colleges, different universities are established in post-independence period. The Sarva Siksha Abhiyan and Anganabadi kendras are established in urban as well as rural areas of Assam. As a result the social status of a woman is gradually increases in comparison to pre-independence period.

Literature Review

A literature review is a comprehensive summary of previous research on a topic. It should give a theoretical base for the research and help the author to determine the nature of the research.

Arumugam R. & Dimitrov G. (2023) carried out a study on "Socio-Economic Status of Tribal Women in Tiruvannamalai District of Tamil Nadu" depicting two major problems faced by the tribal women i.e. 'caste discrimination' and 'gender discrimination' and attempt has been made to study the socio-economic status of tribal women in Tiruvannamalai district of Tamil Nadu.

Bala K. (2021) made a study on "Socio-Economic Status of Working Women: A Sociological Study". The study has highlighted the dual role of women i.e. in workplace and domestic tasks along with problems faced by the women concerning gender discrimination and patriarchal thinking in the society.

Das K. & Das M. (2022) carried a study on "A Study on Educational Level to Ensure Empowerment and Gender Equality Among the Women of Hindu, Muslim and Christian Religious Groups in Assam, India." The study has tried to find out the level of educational attainment among the females of three mentioned religious groups in Assam.

Goswami D. (2009) made a research study on "Population Dynamics and Pattern of Socio-economic Wellbeing in Nalbari District, Assam" for the fulfillment of PhD degree from Gauhati University. The study revealed that to examine the linkages between population dynamics and socio-economic well-being in both spatial and social context in the district .

Joshi S. (2022) carried a study on "A Theoretical Analysis: Issues Confronted by the Bodo Women in Assam and the Role of Education in Empowering Them." The study has demonstrated how different social, political, economic issues hinders females of Bodo community in attaining education.

Objectives

The main objectives of this study are -

- i. To know the socio-economic status of women in rural areas of Assam.
- ii. To study the factors affecting low literacy rate of women in rural Assam.
- iii. To examine the outcomes of women literacy to improve socio-economic status of women in rural Assam.

Methodology

Methodology defines the techniques or procedures that are used to identify and analyse information regarding a specific topic. The methodology for this study is totally based on the secondary sources of data. It has used qualitative data for analysis through books, academic articles, government publications, surveys, journals, various websites, relevant research papers and other existing literatures related to the particular topic. Secondary data analysis is completely cost-effective, time-efficient as well as needs limited hardwork on the part of the writer. The data has also enabled to take valuable insights into the socio-economic positions of women in rural areas of Assam.

Discussions:

Demographic Variables Affecting Socio-Economic Status of Women

Demography simply implies the composition of a particular human population. In the rural areas of Assam, we can identify certain demographic variables which

affects the socio-economic status of women. Among them, some important variables are explained below briefly-

- i) Education:** Education is the most effective variable affecting socio-economic status of women. Through education, women can access opportunities and choices, equality, respect, freedom, identity and many more. Most importantly women can obtain financial stability and it leads to growth in GDP. Anyone after completing formal education, without financial independence is like wastage of human resources for the nation. Women should make sure to contribute in the productivity of their nation. Educating women leads to a number of social benefits including women empowerment.
- ii) Caste:** In this modern era, many areas of rural Assam still effected by the caste problem which deal with socio-economic status of women. It becomes a tradition that the girls of lower caste can not go to school along with so called upper caste people. Again in many social functions, lower caste women are restricted from participation. This exclusively affect the socio-economic status of women of rural areas of Assam.
- iii) Family Type:** In the rural areas, majority of the families are still confined within joint family system. It relies that many people live in one house sharing all the needs and essentials. It is generally seen that in a joint family, numbers of women are more than men. But the earning source for the whole family becomes hardly only one or two male members of the family. It is very difficult to feed a large family only by the income of one or two male members of that family. It is happening in the rural areas of Assam as a tradition of that particular society. If women will also become the earning source for their family, that will raise their social as well as economic position in the society.
- iv) Occupation:** In most of the rural areas of Assam, it is believed that women are born to get married and take household responsibilities. In today's scenario also, maximum girls are permitted to obtain minimum formal education. But, on the part of engaging in any occupation, many restrictions come before taking the occupation. As they have to manage household works, their family members choose their occupation. They do not even get the liberty to choose their career as well as occupation. It ultimately decreases socio-economic status of women in the society.

Factors Affecting Low Literacy Rate Of Women In Rural Assam

There are many remarkable factors that hinders literacy rate of women in rural areas of Assam. Some of them are-

- i) **Gender Discrimination:** In today's science and technologically developed era, many rural areas of Assam are still effected by gender discrimination on the part of women's literacy. In those places, girls are prohibited from taking formal education. They are allowed to confined only within the household activities.
- ii) **Poor Financial Condition:** Sometimes it is observed that in many areas, the size of a family is very large as opposed to their income pattern. In that scenario, their first priority becomes to manage their daily food by daily wages rather than education. Children are even engaged in work from very early ages for livelihood.
- iii) **Lack of Travelling Facilities:** Sometimes due to lack of communication facilities, parents hesitate to send their girl child to school or college. From the parent's opinion, girls may feel unsafe or they may unable to go without proper travelling facilities.
- iv) **Social Superstitions Regarding Menstruation:** The most age-old belief regarding menstruation in rural areas is, 'A menstruating girl/woman shouldn't be touched. It is believed that after attaining puberty, women in their period are totally impure as well as dirty along with provided many restrictions. Such kind of social superstitions hinders in women education.
- v) **Concept of Early Marriage:** In this modern world, the concept of early marriage or child marriage is still prevalent in the rural areas of Assam. Immediately after attaining puberty, girls are instructed to get married according to the societal rules and regulations. Marriage at early age leads to higher fertility which increases rate of maternal mortalities and child mortalities. It ultimately decreases socio-economic status of women.

Women Literacy: An Indicator to Improve Social Status of Rural Women

Literacy is the best solution to improve the social status of rural women. To improve the social position of women, some points on outcomes of women literacy are written below-

- i. 'Gender Disparity' implies the extent of differentiation between male and female. Literacy is the best way to remove that gender disparity and improve social status of women.
- ii. Women literacy decreases the differentiation between rural and urban places. It can help to remove the ignorance towards rural areas.
- iii. Some minority communities in Assam are generally considered as subservient to other existed communities such as SCs, STs, tea garden labourers etc.

Women literacy is the best way to remove that inter-community variation from the society.

- iv. Women literacy changes different socio-cultural outlooks, superstitious beliefs and practices from the society. In such way social status of women can be improved in the society.

Women Literacy: An Indicator to Improve Economic Status of Rural Women

Similar to the social status, economic status of rural women can also be improved by women literacy. Some outcomes of improving economic status are as follows-

- i. Increasing literacy level always influences one in work participation for the proper utilization of knowledge and qualifications. Women literacy also influences women in work participation ,as a result economic status of women improved.
- ii. In rural areas, due concentration is given on agricultural activities and household industries. In rural areas, increasing women literacy can motivate women to participate in those activities. In such way, women literacy remove rural-urban differentiation in work participation.
- iii. In rural areas, prejudices are still prevalent regarding work participation of women. Literacy is the only weapon to decrease gender disparity faced by women in work participation.
- iv. By having literacy, women can analyse the income and expenditure pattern of own family. Literacy level helps women to know all these financial things and improve economic status amongst the society.

Conclusion

The study on the topic "Women literacy: an indicator to improve socio-economic status in rural areas of Assam" identifies a great significance in today's scenario. Though the whole universe is developing day by day with the help of science and technology, many people have still not able to modify and update their mentality in different areas. In majority of rural areas of Assam, education is confined only for male counterparts. Females are considered to engage in household activities. These kind of thoughts ultimately decreases the socio-economic status of those rural areas of Assam. Therefore, initiating awareness programs in these areas become paramount importance. People(both males and females) of those areas must understand that women literacy can improve socio-

economic status of women as well as develop a healthy and stable society for well-being of the rural areas of Assam.

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UNVEILING STRATA IN WORK: GENDER GAPS IN HUMAN DEVELOPMENT WITH SPECIAL REFERENCE TO UPPER ASSAM

Sagarika Khakhlary
Gauhati University

Abstract

The paper is an attempt to analyze by the uses secondary data gathered from multiple sources to examine women's status in relation to men and their empowerment in terms of different socioeconomic and political indicators, such as access to employment, in the state of Assam, with a focus on the Upper Assam region. According to the study, the state's development process is not gender neutral; women's status is significantly lower than that of typical Indian women. The proportion of women employed in the service sector is still very low and does not appear to be getting much better. The sex ratio is improving over time, despite not being favorable to women. Although Government has undertaken a number of steps the situation has remained gloomy mainly because the educated women are not forward looking and cherish the baseless age-old customs. There is a need to create awareness towards achieving the desired goal of women empowerment in the state.

Keywords: Women Empowerment, Status, Upper Assam, Workforce, Employment.

Introduction

Assam, a diverse and culturally rich state in northeastern India, grapples with gender disparities that significantly impact the overall trajectory of human development. While Assam has made strides in various sectors, gender-based inequalities persist in areas of education, healthcare and employment, posing challenges to the state's holistic progress. Addressing these disparities, the goal

of human development is to increase people's productivity as capital and resources. Human development is, in this context, clearly described by HDR (1990) as the process of expanding people's choices, living a long and healthy life, getting educated and enjoying a respectable level of living. Numerous indices, including the Gender progress Index, the Human Development Index and the Gender Inequality Index, have been devised with the purpose of estimating and ranking human progress. The Gender Inequality Index calculates the difference in success between men and women based on three factors mainly, the reproductive health, as measured by the maternal mortality ratio, their share of seats in the national parliament and higher education and women's participation in the labour market. In order to accelerate development and prosperity, everyone should have equal access to rights. However, when we look at gender empowerment measures in practise, we get a bad picture of the same thing. When discussing women's status, it has been discovered that over 90% of them work in the unorganized sector, that they are paid less than men for doing the same work, that their health is generally worse than men's, that they have less education, less skill, and so on.

This chapter aims to investigate the following issues: (1) The role of gender inequality in human development in the context of Upper Assam, (2) Women's accomplishments in the context of Assamese gender empowerment measures, (3) Strategies for accelerating women's capacity building, especially in Assam. The chapter will employ a purely descriptive methodology that will also be analytical in nature, drawing on data extracted from multiple secondary sources.

While still not favorable to women, the sex ratio is getting better over time. When it comes to decision-making authority within the home, women in the state are more respected than women in India; however, when it comes to financial independence and sexual assault, the roles are reversed. The state is rife with inter-district disparities. Despite having high per capita DDP, districts like Tinsukia etc have not been able to change the development effort to close the gender gap. At the disaggregate level, we have employed secondary data from various sources to investigate the state of women's empowerment. The following category have been used for analysis: Employment as classified according to geography.

In terms of location, Dhemaji, Dibrugarh, Golaghat, Jorhat, Lakhimpur, Sibsagar and Tinsukia are in Upper Assam.

Status of Women Employment

Employment Status:

In this section, the percentage distribution of workers (main, marginal and non-workers) will be examined, the workforce participation rate and the

establishment of Self-Help Groups, (SHGs) among various district groups in the state in order to analyze the status of women based on their employment status. Examining the percentage of main, marginal and non-workers belonging to both sexes in Assam in 2001 based on geography will be helpful. (Table 1). The distribution of the workforce in the economy is partially clarified by these data. Across all the districts, the percentage of women employed as primary labourers is significantly lower than that of men, while a greater population of women are employed as secondary and non-workers than men. This illustrates how women are comparatively disadvantaged in the state of women with regard to jobs. The table below also makes it evident that there are less female main and marginal workers in every Upper Assam District than Non workers.

Districts with high literacy rates have the largest percentage of female main and marginal workers and the lowest percentage of female non-workers. It is significant to note that, in contrast to the female population, the proportion of main workers in the male population is relatively high, while that of non-workers and marginal workers is low. The male primary workers exhibit nearly the same pattern. But in case of female marginal and non-workers, the same relationship is not seen. The table shows that the lowest percentage of female marginal workers is found in High DDP districts, while the lowest percentage of female non-workers is found in Moderate DDP districts. The percentage of males who are primary workers is typically higher than the percentage of females in the same profession. The marginal and non-working proportion of women is higher than that of men.

Let us now examine Assam's labour force participation rate. Based on geographic analysis, it is discovered that the majority of Upper Assam districts exhibit less rates of both overall and female labour force participation, suggesting that the region is relatively still partially underdeveloped. (Table 2)

The percentage of men who work does not significantly change in relation to the literacy rate. The percentage of women in the workforce, however, varies greatly and has a positive correlation with the literacy rate. From 1999 to 2006, the highest percentage of women's Self-Help groups (SHG's) to all SHG's was found in Upper Assam. (Table 3) In comparison to Upper Assam performed poorly in this criterion. The average number of women SHG's engaging in economic activity during the 2006-07 fiscal year was significantly lower in Upper Assam. The highest point was in Central Assam.

Concluding Thoughts

The aforementioned analysis makes it abundantly evident that the state's development process is not gender neutral and that women in the state have a

lower status woman in India as a whole. Women make up a small portion of all state employees working in government services. Over the past ten years, there hasn't been much of an improvement in this area. Assam women also have much less access to and control over resources compared to other states. However, during the same period, Upper Assam had the highest percentage of women SHG's relative to all SHG's in comparative reports of all parts of Assam. The situation has remained dire despite the government's many efforts, primarily because educated women value outdated, unjustified customs over progress. As a result, raising awareness is necessary in order to accomplish the state's goal of empowering women. The workforce participation of Upper Assam is comparatively low in terms of female workers, but there is still a scope for more development and progression among the societal mindset and make the base strong for women in the working sector.

Table 1. Workers in Upper Assam, 2001

Main Worker	Marginal Worker	Non-Worker
Male	Male	Male
41.68	11.47	47.63
Female	Female	Female
15.62	39.55	66.90

Table 2. Workforce Participation Rate in Assam, 2001

Person	Male	Female
42.98	52.36	32.90

Table 3. Physical Achievement under SCSY in Assam.

Districts	No. of Shgs Formed During 1999 To 2006	No. of Shgs Formed During 2006	No. of Women Shgs Formed During 1999 to 2006	No. of Women Shgs Formed During 2006	No. of Women Shg Taken up Economic Activities During 2006
Total	35887	10904	24437 (68.09%)	555 (5.09%)	188
Average	5127	1558	3491	79	27

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HUMAN INTELLIGENCE AND HUMAN DEVELOPMENT

Tapan Das

Learner, KKHSOU
M.N.C. Open College

Abstract

Human Intelligence and Human Development are two separate study but they are inter related with each other. Human intelligence is an important aspect from which to examine the development in human. However, human intelligence and human development remain separate study and not being systematically reviewed. Human intelligence and human development are two different dimensions in the academic research. Human development is a branch of psychology with the goal of understanding people. It studies how they develop, grow and change through their lives. While Human intelligence is cognitive aspect of psychology. It is inborn and general mental capacity of human being. The present study is related intelligence level among male and female students of similar age group, with the help of Non-Verbal Intelligence test i.e. Differential Aptitude Test (Abstract reasoning).

***Keywords:** Human intelligence, Non-verbal intelligence Test, Differential Aptitude Test, Abstract reasoning.*

Introduction

Intelligence: Intelligence in a single word simply called as 'Smart'. A person has higher intelligence capacity means a person is highly smart. Conversely, a person has less intelligence capacity means the person is less smart.

The term 'Intelligence' is one of the most complicated as well as controversial concept of Educational psychology. Prior to 19th century, French psychologist

Alfred Binet, (1857-1903) had studied and experimented issues related to intelligence. Alfred Binet had developed various works on intelligence test which are still relevant in 21st Century. He had worked on the concept of difference in age and the existence of general mental ability. The reason why Alfred Binet is considered as father of intelligence test.

In general, Intelligence is general mental ability or general mental capacity or cognitive abilities of human being. It is the capacity of adoption to handle any situation of their environment. It is the ability to think, ability to solve problems, ability to analyse situation. It is a mental ability or mental capacity that helps an individual to plan think and reason as well as learning.

Human Development:

Human development is a branch of Psychology with the goal of understanding People. It Studies how they develop, grow and change through their lives. This helps individual better understanding themselves and their relationship.

Human development indicates advancement, more unfoldment, a progressive change in human. It indicates the changes in quality or character rather than quantitative aspects. It is a comprehensive terms. It indicates overall changes in them.

Human development is a continuous process. It grows from womb to tomb. It doesn't end with attainment of maturity. The changes, however small they may be, Continue throughout the life span of an individual.

Human development brings qualitative changes, which are difficult to measure directly. They are assessed through them observation in behavioral situations. Human development can be measured in physical, social, emotional or psychological aspects.

Human development is a gradual process. It is quantitative change in organism which is not subject to direct observation. It is progressive acquisition of various skills and functions.

Thus, intelligence is general mental ability of human being that helps in reasoning, problem solving and learning. Because of its general nature, intelligence integrates cognitive functions such as attention, memory, language or planning. On the basis of this definition, Intelligence can be reliably measured by standardized test with obtained scenes predicting several board social outcomes such as educational achievement, job performance, health and longevity. A detailed understanding of the brain mechanism underlying this general mental ability could provide significant individual and social benefits.

Non-Verbal intelligence Test:

Non-verbal intelligence test is those, which doesn't require any languages to test intelligence level. This is also known as non-verbal language. Some include in Non-verbal intelligence test are figures, analogies, classification following sections, diagrams, form of pictures, geometric figures etc. In these types of test, illiterate Individuals may also be tested with the help of non-verbal tests. Here, the subject may use Paper and pencil but doesn't need to know words or numerical figures.

Differential Aptitude Test (DAT):

An aptitude test is an instrument used to determine and measure an individual's ability to acquire through future training, some specific set of skills. There are several aptitude test. In this study, the author chooses Differential Aptitude Test. This set of test covers several areas including verbal reasoning, Numerical ability, Abstract reasoning, perceptual speed and accuracy, Mechanical reasoning, space relations, Spelling and language use. The test are performed under exam conditions and are strictly timed. All questions have a definite right or wrong answer. Very few candidates usually complete the entire test and the questions usually become progressively more difficult. The test is also age related.

Abstract Reasoning:

This test is a non-verbal measure of reasoning ability. It assesses how well individuals can reason geometric shapes and design. Each test item is geometric series in which the elements of change according to given rule. The student is asked to infer the rules. For example

Problem figure				Answer figure Select the next figure			
i	ii	iii	iv	iiii	iiiii	iii	i
				A	B	C	D

This type of abstract reasoning is a measure of an individual's logical, analytical and conceptual skills. This skill is important in careers or occupations that require the ability to use relationships among objects in terms of their size, shape, position and quantities where the ability to analyse dynamic changes and project them forward in time. Individuals with good abstract reasoning will usually work out problems for themselves and will often challenge ideas that fail to be convincingly explained.

Objectives of the Study

The objective of the present study is to examine following:

1. To study the differences between Intelligence level among male and female students of Secondary level.
2. To study the differences between mean scores of male and female students.
3. To study the differences in deviation on variation of scores from mean scores of male and female students.

Statement of the Study

The present study is to examine the Intelligence level among male and female Students of similar age group students, considering the secondary level students at Howly Higher Secondary School. This work is based on case study report examine through mental ability test, at micro level.

The title of the work is "Gender difference and level of intelligence, a micro level case study among secondary students at Howly Higher Secondary School."

Hypothesis of the Study

Hypothesis:

Ho: There is no significant differences between level of intelligence among male and female students of secondary level at Howly Higher Secondary school.

Significance of the Study

Measuring aptitude test of secondary level is very essential from society as well as teachers perspective. Using these aptitude test, A teacher can distinguish his/her students on the basis of score obtained in test and accordingly, he/she can put effort to the secondary level students (i.e. class IX-XII) which is very important phase for a student. Basically, class 10th is the middle stage for the secondary students and they had appear for matriculation exam. After that they had to choose specific subjects and streams. These aptitude test will help them to choose right subjects and stream. Present research has made an effort in measuring intelligence among male and female students at Secondary level of students.

Area of the Study

About Howly Higher Secondary School:

Howly Higher Secondary school was established in the year 1939. It is managed by the Department of Secondary Education, Assam. It is located in the

heart of Howly town, ward No.3 opposite to the Bhawanipur (Education) Block of Barpeta district of Assam.

Earlier, this school was consists of grades from 6 to 10 in the year 2013, government of Assam had provincialized its higher secondary classes with single stream, that is Arts. Again, in the year 2017-18, it was attached to pre primary section. Presently this school is consists of class 1 to 12.

The medium of instructions in this school is Assamese. This school is approachable by all-weather road. The academic calendar of this school starts from April. This school has a library and has near about 2000 books in the library of all, the school, the school is having a computer aided learning laboratory.

At present there are 820 students at Howly Higher Secondary School from class 1 to class 12, with 29 regular teachers and 8 contractual teachers. The Head of the Institution is the principal.

The economic background of the maximum students are either poor i.e. Below Poverty line or lower middle class. More than half of the students are from Bengali community (either Hindu Bengali or Muslim Bengali). Most of their parents are illiterate and they are engaged in skilled or semi-Skilled activities.

The Howly Higher Secondary school plays significant role in matriculation exam result constantly. In every year, students are performing some outstanding results in HSLC exam as well as in other exams. In the year 2022-23, the school had secured grade A+ in Gunotsav held by Govt. of Assam.

Review of Related Literature

L. LaMay Marry and Halpern F Dione (2000) had Studied on "The Smarter sex : A Critical Reviews of sex differences in intelligence". From this research, it was concluded that there are no differences among male and female in general intelligence but reliable differences are found on some tests of cognitive abilities.

Naderi H, Abdulla R, Aizam H. Tengku (2008) had conducted a research on the study to investigate about the difference between intelligence of students, their role, identity. He had conducted his study on students of Malaysian University. They further studied environment impact on the development of female and male intelligence. Their result found that there is no significance difference between male and female students in relation to intelligence.

Szymanowicz and Furnhum (2013) Conducted a research on "gender and gender role differences in self and other estimates of multiple intelligences?" Their research examined participant of gender and gender role differences in estimates of multiple intelligences for self, Partner and various hypothetical,

stereotypical and counter stereotypical target persons. This study was conducted with a normal population with sample of 261 British Participants with the help of questionnaire. This research found that male have higher mathematical and spatial ability than female while emotional intelligence lower than females.

Naderi H, Abdullah R. and Aizan H. Tengku (2008) made a study on "Male female intelligence among undergraduate students: Does Gender matter?" The study investigated the difference between Gender role identify and intelligence of students at universities. The result formed that no significance between female and male students in relation to intelligence.

Chandra, Ritu (Nov, 2013) made a study on " Influence of Intelligence and Gender on Academic Achievement of Secondary school students of Lucknow city" and examined the influence of intelligence and Gender on Academic achievement of secondary School students of Lucknow city. The findings of the study revealed that there is a significant influence of intelligence on academic achievement whereas gender has not significantly influenced the academic achievement.

Prakash S, Rani M Usha (2015) had studied intelligence level of high school students in terms of area of study, gender, medium of instruction and board of school in Madurai and Virudhunagar district of Tamil Nadu. Their study found that there is little significance as difference in intelligence test scores of high School students in terms of area of study, gender medium of instruction and board of School.

Wai Jonathan, Halpern Diane (Dec, 2019) studied "sex differences in intelligence" Published in Cambridge University Press conducted research and found that, there are some average differences in specific cognitive abilities, there is considerable are overlap in male and female distributions.

Allen and Giofri (2022) conducted a research to examined the level of construct of intelligence through Wechsler Intelligence Scales for Children (WISC) batteries, evaluating eventual gender differences in indices and subtests. They used cross battery approach to locate cognitive abilities into different levels. This research found that, the differences is negligible i.e. this research concluded that, there is no evidence that was found for gender differences in the average level on male and female.

Methods and Methodology

Methods of the Study

In this chapter, the researcher devoted in studying the procedure of data collection through sampling selection design and description of the tools required

for collection of data and statistical technique to be used to analyse the data. The selection of techniques and device of investigation is determined by the research problem. The selection of adequate methods, tools and techniques is very difficult problem. It must be handle with every caution care and consideration to respect of time, cost and procedure.

Research Design

The present study is based on case study method. A case study method is based on real life situation. It deals with real information as methodology tools.

A case study research involves analysis of small data sets, such as one or two groups, that may lead the researcher to gain serve insights about trends, tabular- groups. The method case study method is a extensive study of a specific research subject such as a person, a group, a place, on event, an organisation on phenomenon. Case Studies are used in social, educational, clinical and business research.

In a case study research design usually involves qualitative methods but in some cases, quantitative methods are also used. This method is good for describing, comparing, evaluating and understanding a research problem.

A case study is an appropriate research design if we want to gain concrete, contextual in depth knowledge about a specific real world subject. It allows us to explore, the key characteristics, meanings and implications of the case.

The present study is social science research and it is based on small unit i.e. Secondary level students of Howly Higher Secondary School of Howly town under Barpeta administrative district of Assam. This study is basically focused on class Xth level Students. The total number of observation is 96 in the class, while 83 students were present during the case study. Sample of 30% is considered from the 83 population which is 24.6. Again, this case study research has taken research hypothesis in order to get suitable conclusion from research work.

Thus, from the above information, it is appropriate as well as useful for us to apply case study method for obtaining fruitful conclusion.

Case study method results faithful when we use research hypothesis in the project work. This method is very helpful in testing the data. It enables the generalized knowledge.

Population:

A population can be defined as the complete set of groups of individual. The population is a comprise of groups of a nation or group of common characteristics.

In statistical term, population is the total or whole series of items or individuals or set of items from which we can draw data for a statistical study. It can be a group of individuals, a set of items etc. In general, population refers as total number of population living in a particular area at a specific time.

In research work, Population refers as the data of our research study of interest. It can be a group of individuals, objects, events, organizations etc.

The Present research has been done with class Xth student of Howly Higher Secondary School. The population of this research is the number of total students studying in class Xth of 2023-24 Batch.

The number of total students of class Xth is 96. Among them total number of boys are 43 and total number of girls are 53. An examination i.e. Mental Ability Test was conducted on 06/06/2023. The examination venue was Howly H.S. School itself.

The total number of students appeared in the test were 83. Among them 35 were male students and 48 were female students.

Sampling Technique

In this study, the work has done with the help of purposive sample technique. It is a type of non-random sample, where every unit of Population doesn't have equal chances of being selected in sample.

In this study, a mental ability test was conducted among class Xth students of Howly Higher Secondary School. The total number of students in the class Xth is 96, while during this test 83 students were present and appeared in that test.

Now, considering the 30% sample from the total population from class Xth is 24.6. Accordingly, we are considering 24 students as Sample. These 24 students are divided into two groups as male and female. These 12 students are selected from male category and 12 students are selected from female category.

Again, 12 male students are categories into two groups. First 6 male students are selected from top scorer and second 6 male students selected from bottom scorer. The process is done in the case of female students, i.e. 12 female students are categories into two groups. First 6 female students are selected from top scorer and Second 6 female Students are selected from bottom scorer.

In Quest of Human Development

The list of selected sample of total 24 students are as follows.

Table 1 : Top 6 male students (on the basis of highest scores)

Roll No.	Marks obtained
42	30
42	30
17	28.5
20	28.5
10	28.5
36	2.85

Table 2 : Bottom 6 male students (on the basis of lowest scores)

Roll No.	Marks obtained
06	19.5
34	19.5
86	18
55	13.5
42	10.5
35	5

Table 3 : Top 6 female students (on the basis of highest scores)

Roll No.	Marks obtained
44	30
03	30
40	29
38	29
04	28.5
46	28.5

Table 4 : Bottom 6 female students (on the basis of lowest scores)

Roll No.	Marks obtained
69	18
69	18
81	18
88	17.5
48	17
10	14

Thus, Judgmental sampling or purposive sampling is most suitable for this research to collect sample units. It is suitable for small sample unit. Our selected sample unit is also small i.e. 24.

Non-verbal reasoning method is useful for all students as it tests the ability to analyse information as well as solution to the problem with visual reasoning and analysis.

Procedure of Data Collection

The data used in this study is collected for the first time by the researcher directly from the institution. The data used in this study is primary data.

The procedures of data collection had done by conducting an examination is Mental Ability Test. Mental ability test is a non-verbal test consisting of questions based on figures and diagrams to assess the general mental functioning of the candidates.

Validation of Questionnaire on Question Paper

The data collection was done with the help of non-verbal ability test. Non-verbal ability test is a type of intelligence test which doesn't require any languages to answer. Instead of languages non-verbal ability are prepared with images and pictorial representation. Through these images and pictorial representation questions are presented in such a way that, it requires analysing capacity of students.

Howly Higher Secondary School, though it an Assamese medium school, here both Assamese and Bengali community students are found studying in various classes.

Therefore, non-verbal ability is a best procedure to measure intelligence level of secondary students at Howly Higher Secondary School.

Tools for Data Collection

Questionnaire:

In this study, instead of questionnaire, question paper is used. This question paper is designed with Multiple Choice Questions (MCQs) with total 30 questions. These 30 questions are divided into 6 sections. Each section has 5 questions.

The first section, i.e. questions from 1 to 5, are easy questions. Students were asked to find dis-similar figure from other three figures.

The next section, i.e. questions from 6 to 10, students were asked to find out one similar figures from the four figures. This section was easy but little difficult than previous section.

The next section, i.e. 11 to 15, students were asked to find out missing figures from the parent figure. This section was average in terms of difficulty level.

The next section, i.e. questions from 16 to 20, students were asked to fill in the blanks by comparing other three figures. This section was average in terms of difficulty level.

The next section, i.e. questions from 21 to 25, students were asked to make relationship fourth figure with third figure as like as first figure with second figure. This section was little difficult than the previous section.

The last section, i.e. questions from 26 to 30, students were asked to complete some uncompleted geometrical shapes from the option. This section was difficult than all other previous Section.

Tools Used in Data Collection

Tools, that are used in this study, are

- (i) Mean
- (ii) Standard Deviation
- (iii) Standard Error
- (iv) t-test

Analysis and Interpretation

Analysis of the Study

Present chapter is developed to analysis and interpretation of the collected data for a Particular study. It is important in order to prepare conclusion of the research. The data as such has no meaning unless it is analysed and interpreted by suitable method. Analysis of data means, studying the research data in order to bring innate facts or meanings. It involves breaking up of the complex facts into simpler parts and putting them into new arrangement for the purpose of interpretation.

The focus of the present study is to evaluate gender difference and the level of intelligence among secondary students at Howly Higher Secondary School. The data was collected by conducting an MCQ (i.e. Multiple Choice Question) test among class Xth Students. The pattern of questions are pictorial, i.e. Non-verbal group test. Each question has four option. The students had to find connect answer and mark (✓) sign against it. The rules and guidelines are mention in the front page of the test booklet. The medium of instruction of test booklet is Assamese and English. Total number of questions were 30 and full

marks was also 30. Each question had 1 mark. Each correct answer will give 1 marks while on attempt of incorrect answer, there will be a penalty of 0.5 marks. The standard of question paper is based on class 6-7 level. During the examination, students were strictly warned to abstain from any unethical and illegal activities. The test was conducted for a maximum of 1 hour time limit.

The question paper is prepared with Non-Verbal Group Test of Differential Aptitude Test (Abstract Reasoning). This type of test doesn't require any languages in question, except instruction.

The objective of the present study is to examine following:

1. To study the differences between Intelligence level among male and female students of Secondary level.
2. To study the differences between mean scores of male and female students.
3. To study the differences in deviation on variation of scores from mean scores of male and female students.

Hypothesis of the study:

Ho: There is no significant differences between level of intelligence among male and female students of secondary level at Howly Higher Secondary school.

Table 5 : Male scores

X	M ₁	X ₁	X ₁ ²
30	21.66	8.34	69.55
30	21.66	8.34	69.55
28.5	21.66	6.84	46.95
28.5	21.66	6.84	46.78
28.5	21.6	6.84	46.78
28.5	21.66	6.84	46.78
19.5	21.66	-2.16	4.66
19.5	21.66	-2.16	4.66
18	21.66	-3.66	13.39
13.5	21.66	-8.16	66.58
10.5	21.66	-11.66	135.95
5	21.66	-16.66	277.55
			ΣX ₁ ² = 829.01

$\sum x = 260$
 $M_1 = \sum X / N$
 $M_1 = 260 / 12$

In Quest of Human Development

$$\Sigma X = 260$$

$$M_1 = \frac{\Sigma X}{N}$$

$$M_1 = \frac{260}{12} = 21.66$$

Mean scores of male candidate is 21.66.

Table 5.2 Female scores

Y	M ₂	Y ₁	Y ₁ ²
30	23.12	6.88	47.33
30	23.12	6.88	47.33
29	23.12	5.88	34.57
29	23.12	5.88	34.57
28.5	23.12	5.38	28.94
28.5	23.12	5.38	28.94
18	23.12	-5.12	26.21
18	23.12	-5.12	26.21
18	23.12	-5.12	26.21
17.5	23.12	-5.62	31.58
17	23.12	-6.12	37.45
14	23.12	-9.12	83.17
			$\Sigma Y_1^2 = 452.51$

$$\Sigma Y = 277.5$$

$$M_2 = \frac{\Sigma Y}{N}$$

$$M_2 = \frac{277.5}{12} = 23.125$$

Mean scores of Female candidate is 23.12.

It has been established that when two samples are small we can get a better estimate of time standard Deviation (S.D) in the population by pooling the sum of squares if deviations taken around the means of the groups and compute pooled S.D. using following formula.

Now, for pooled standard Deviation, we can use following-

$$\begin{aligned}
 \text{S.D. or } \sigma &= \sqrt{\frac{\Sigma X_1^2 + \Sigma Y_1^2}{(N_1 - 1) + (N_2 - 1)}} \\
 &= \sqrt{\frac{829.01 + 452.51}{(12 - 1) + (12 - 1)}} \\
 &= \sqrt{\frac{1281.52}{11 + 11}} \\
 &= \sqrt{\frac{1281.52}{22}} \\
 &= \sqrt{58.25} \\
 &= 7.63
 \end{aligned}$$

For standard Error of Deviation, we can use following formula

$$\begin{aligned}
 \text{SE}_D \text{ or } \sigma_D &= \sigma \sqrt{\frac{1}{N_1} + \frac{1}{N_2}} \\
 &= 7.63 \sqrt{\frac{1}{12}} \\
 &= 7.63 \sqrt{\frac{1}{6}} \\
 &= \frac{7.63}{3.12} \\
 &= \frac{7.63}{3.12} \\
 &= 3.12
 \end{aligned}$$

Now, computation of t value for the difference in sample means. The sampling distribution of the difference between means in small samples is 't' distribution-

$$\begin{aligned}
 t &= \frac{\text{Differenc between means}}{\text{Stan dard error of difference between means}} \\
 &= \frac{M_1 - M_2}{6_D}
 \end{aligned}$$

$$= \frac{21.66 - 23.12}{3.12}$$

$$= \frac{-1.46}{3.12} = -0.46 \text{ or, } 0.46$$

Number of degrees of freedom

$$= N_1 + N_2 - 2$$

$$= 12 + 12 - 2 = 22$$

Interpretation

The interpretation of the above analysis are as follows:

The mean score of male students is found as 21.66. The mean score of female students is found as 23.12. This implies that the mean score of female students are greater than male students.

Now, if we consider individual standard deviation of male and female students instead of pooled standard deviation than, individual standard deviation score of male students are higher which is 8.68 than individual standard deviation score of female students as 6.41.

Again, if we consider individual standard error of male and female students instead of pooled standard error, than standard error of male students is 2.50 which is higher than female students that is 1.77.

Now, from the t-test analysis we found that critical value of t with degree of freedom 22 at 5% level of significance is 2.07 and our computed value of t is 0.46 which is quite smaller than the table value. Hence, it is not significant. Therefore, null hypothesis cannot be rejected.

't' value of male and female students of class 10th at Howly Higher Secondary School, Howly.

Variable	Howly Higher Secondary School					
	Gender	Total Observation N	Mean	S.D.	SEM	t-value
Intelligence	Male	12	21.66	8.68	2.50	0.46*
	Female	12	23.12	6.41	1.77	

* Indicates significance at 0.05 or 5% level.

S.D. and SEM are individual score

Findings and Conclusion

Findings of the Study

The present chapter deals with important findings of the study, suggestions for further research and conclusion. The findings of this research work have been presented on the basis of the mental ability test conducted on 6th June, 2023.

Major findings of the study are as follows:

- (i) In the first section of MCQ test i.e. questions from 1 to 5 were easy type questions. These questions were attempted correctly by almost all the students, while a few students were unable to attempt questions 4 and 5.
- (ii) In the second section of MCQ test, i.e. questions from 6 to 10 were easy type questions. These questions were attempted by all the students. A few students were unable to attempt questions 6 and 8.
- (iii) In the third section of MCQ test, i.e. questions from 11 to 15 were easy type questions. These questions were attempted by more than half of the students appeared in the exam. A few students were unable to attempt questions 12 and 14.
- (iv) In the fourth section of MCQ test, i.e. questions from 16 to 20 were above average level questions. These questions were attempted by more than half of the students appeared in the exam. A few students were unable to attempt question 18.
- (v) In the fifth section of MCQ test, i.e. questions from 21 to 25 were difficult questions. These questions were attempted by genius students. Some students were found questions 26, 27, 29 and 30 as difficult.
- (vi) In the last section of MCQ test, i.e. questions from 26 to 30, were difficult questions. These questions were attempted by genius Students. Some students were found questions 20, 27, 24 and 30 as difficult.

CONCLUSION:

In previous chapter, we analyzed and interpreted the data collected on a questionnaire, so after analysis and interpretation, the next step is to draw not conclusion of the study. In the light of interpretation of data, the researcher has to use all care and cautions in formulating conclusions and generalization. The final step of research demands critical and logical thinking in summering the findings of the study and compares them with objectives formulated in the beginning. The researcher should not draw conclusions which are inconsistent among them or with external realities. Conclusions are essential investigation. They provide

finishing touch and review to the whole of critical work. The present study has evaluate the impact of intelligence difference among gender among secondary level students at Howly Higher Secondary school.

Following conclusion can be drawn:

- (1) The mean score of the male student and female students are found different. The mean score of female students are higher than male students. This means on average students more intelligent then male students.
- (2) The individual Standard Deviation of male students and female students are found different. The S.D. deviation of male students is higher than female students. This means, Variability or variation of individual male score is higher than female students.
- (3) From t-test score of date, it can be claimed that there is significances difference between scores of male students and female Students of secondary level students at Howly Higher Secondary school.?

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