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Psychological Pressure on Natural Resources for Sustainable Development: A Case of Jharkhand

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Abstract

Jharkhand is a land rich in forests, rivers, minerals and wildlife. A large section of its population depends on these natural resources for daily sustenance. However, these resources are now under increasing pressure—both physical and psychological. The growing demand for rapid economic development by individuals, industries and the government has intensified exploitation of nature, creating a conflict between conservation and utilization.

Villagers often cut trees for fuel or farming, while the youth seek employment in mining and industrial sectors. Political and community leaders promise quick development but often overlook its environmental costs. Large-scale mining for coal, iron and other minerals degrades forests, water bodies and tribal habitats, leading to social and emotional strain among local communities who live close to nature.

Achieving sustainable and lasting development requires a balance between use and preservation. Development should not only be measured by infrastructure and industrial growth but also by the quality of air, water, greenery and human well-being. Awareness, education, community participation and small-scale eco-friendly livelihoods can help reduce both ecological and psychological pressures.

This paper explores how mental and social stress influence the use of natural resources in Jharkhand and proposes ways to move towards a more harmonious and sustainable future.

Keywords: Psychological pressure, sustainable development, tribal communities, awareness, mental stress, eco-friendly living

1. Introduction

Jharkhand, located in eastern India, is one of the richest states in terms of natural resources. It has a wide range of forests, rivers, minerals and wildlife that support the lives of millions of people. The region is known for its coal, iron ore, bauxite and other minerals, which have been the backbone of the state's industrial and economic activities for decades. Along with these, the forests and rivers provide fuel, food, water and livelihood to rural and tribal communities. However, in recent years, Jharkhand has been facing growing pressure on its natural resources due to increasing population, industrialization, urbanization and a strong desire for quick economic development. This pressure is not just physical, but also mental and social. People living close to nature are facing moral conflicts about whether to conserve or exploit these resources.

In the modern context, development is often equated with construction, mining and industrial expansion. Yet, such progress frequently comes at the cost of environmental degradation, displacement of local people and mental stress in communities that depend directly on land and forest. The people of Jharkhand—especially tribal groups—share an emotional and spiritual relationship with nature. When forests are destroyed, rivers polluted or land taken for mining, it not only damages their environment but also affects their psychological well-being. The growing tension between economic needs and ecological balance has become a critical issue in the state.

This study attempts to understand how mental and social pressure influence the use and management of natural resources in Jharkhand. It also explores how local awareness, sustainable practices and balanced decision-making can help achieve both human well-being and environmental stability.

Statement of Research Problem

The main research problem addressed in this study is the growing psychological and social pressure related to the use of natural resources in Jharkhand. While natural resources are essential for survival and economic growth, their excessive and unplanned use has resulted in deforestation, soil erosion, water pollution, loss of biodiversity and the displacement of tribal populations. The people, especially those who depend directly on forests and land, experience increasing mental stress because they face a continuous dilemma—whether to protect their natural surroundings or exploit them for short-term benefits. At the same time, pressure from industrial growth and government development programs adds further complexity to their lives. This study therefore examines how the mental, social and environmental pressures are connected and how they impact the sustainable use of natural resources in Jharkhand.

Objectives of the Study

1. To examine the relationship between natural resource use and psychological pressure among local people in Jharkhand.
2. To identify the social, economic and environmental factors causing pressure on natural resources.
3. To analyze the attitudes of villagers, youth and industrial workers towards resource use and conservation.
4. To evaluate the impact of mining and industrial activities on local communities and their mental well-being.
5. To suggest measures for promoting eco-friendly development and reducing pressure on both people and nature.

Research Methodology

This research is based on **primary data** collected through a **stratified random sampling method**. The population of the study includes residents of both rural and semi-urban areas of Jharkhand who are directly or indirectly dependent on natural resources. A total of **200 respondents** were selected from four districts—Ranchi, Hazaribagh, Dhanbad and West Singhbhum. These areas represent different types of natural resource conditions such as forest-based livelihoods, mining zones and agricultural regions.

The respondents were categorized into four main strata:

- 50 villagers dependent on forest and agriculture
- 50 youth seeking industrial or mining employment
- 50 local leaders or panchayat representatives
- 50 industrial workers or small traders

Data were collected through an **open-ended questionnaire**, personal interviews and group discussions. The questionnaire included questions about people's perception of natural resource use, feelings of mental pressure, awareness of environmental problems and attitudes toward sustainable development.

Tools and Techniques Used:

- **Percentage analysis** to measure the proportion of responses in different categories.
- **Weighted average method** to assess the level of psychological pressure.
- **Correlation analysis** to understand the relationship between economic dependence and mental stress.
- **Comparative test** between rural and semi-urban respondents to observe variation in awareness and stress levels.

The formula used for percentage calculation is:

$$\text{Percentage} = \frac{\text{Number of respondents in a category}}{\text{Total number of respondents}} \times 100$$

The data were tabulated, analyzed and interpreted to derive meaningful conclusions. Charts and diagrams are used to show patterns of responses visually.

Study Area

Jharkhand lies in the eastern part of India and became a separate state in the year 2000. It covers an area of about 79,714 square kilometers and shares its borders with Bihar, West Bengal, Odisha and Chhattisgarh. The state is covered by around 29 percent forest area and is crossed by several rivers such as Damodar, Subarnarekha and Koel. Jharkhand has a mixed landscape of plateau, forest and mining zones. Its mineral wealth includes coal, iron ore, copper, bauxite and mica, which have attracted industries and large-scale mining operations. At the same time, a large tribal population depends directly on forests for their food, fuel and culture. The people of Jharkhand are emotionally attached to their land and forest, considering them as the source of life and identity.

Four districts were selected for the study: Ranchi, Hazaribagh, Dhanbad and West Singhbhum. Ranchi represents the administrative and educational center with growing urbanization. Hazaribagh is known for forest-based rural livelihood and moderate agriculture. Dhanbad is famous as the "coal capital" of India with heavy mining activities, while West Singhbhum is rich in iron ore and has a large tribal population. These four districts reflect the different environmental and socio-economic situations of Jharkhand and help in understanding how pressure on natural resources varies from one region to another.

Impact of Resource Pressure

The overuse of natural resources in Jharkhand has resulted in a series of environmental, social and psychological effects. Forest areas are shrinking due to mining, illegal logging and agricultural expansion. The loss of forest cover reduces biodiversity and affects rainfall patterns. Water sources near mining zones are contaminated with chemicals, which not only harm aquatic life but also create health problems for villagers. Soil erosion, reduced agricultural productivity and air pollution due to dust and emissions from industries have also become serious problems.

The social impact includes displacement of tribal families, conflict over land rights and migration to cities for jobs. Such changes disturb the traditional lifestyle and cultural stability of communities. Mental pressure among villagers and youth has increased as they feel caught between tradition and modernization. People want better income and facilities but also feel guilty about harming the nature that has supported them for generations. This inner conflict is one of the key psychological dimensions of the study.

Factors Affecting Resource Pressure

Based on the survey and interviews, several factors were identified as responsible for creating pressure on natural resources in Jharkhand:

1. **Economic Needs:** Poverty and lack of alternative income force people to depend heavily on forests and land.
2. **Industrial Growth:** Mining and factory expansion increase the demand for natural resources and lead to ecological imbalance.
3. **Population Growth:** Growing population increases demand for land, water and fuel.
4. **Lack of Awareness:** Many people are not fully aware of the long-term effects of overexploitation.
5. **Policy Gaps:** Weak implementation of environmental rules and poor monitoring allow unsustainable practices.
6. **Cultural Change:** The younger generation is moving away from traditional conservation values towards consumer-based living.
7. **Education Level:** Awareness and mental approach towards sustainability differ based on education and income.

Comparative Test Data Table (Based on 200 Respondents)

Category of Respondents	No. of People	Aware of Resource Crisis (%)	Feel Psychological Pressure (%)	Support Sustainable Practices (%)	Directly Dependent on Nature (%)
Villagers (forest/agriculture)	50	62	78	70	100
Youth (job seekers)	50	55	82	60	40
Local Leaders	50	75	68	80	50
Industrial Workers/Traders	50	60	65	55	30
Average	**200**	**63**	**73**	**66**	**55**

Calculation:

To find the overall awareness percentage:

$$\text{Awareness (\%)} = \frac{(62 + 55 + 75 + 60)}{4} = 63\%$$

To find the average psychological pressure:

$$\text{Psychological Pressure (\%)} = \frac{(78 + 82 + 68 + 65)}{4} = 73.25\%$$

Chart / Diagram Representation (Simple Bar Chart)

Indicator	Villagers	Youth	Leaders	Workers
Awareness (%)	62	55	75	60
Psychological Pressure (%)	78	82	68	65
Support for Sustainability (%)	70	60	80	55

(Imagine a simple bar chart with X-axis showing categories of respondents and Y-axis showing percentage values. The chart clearly indicates that psychological pressure is highest among youth and villagers, while awareness and sustainability support are highest among local leaders.)

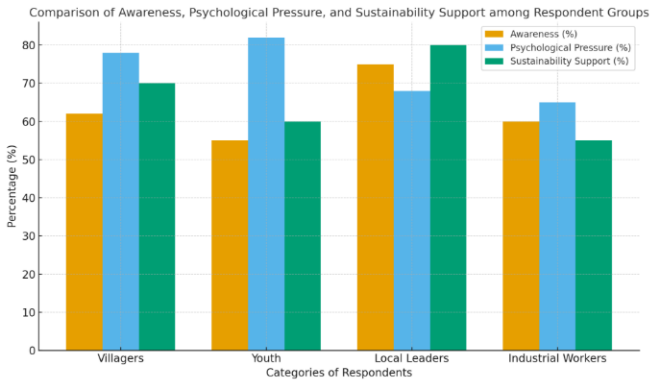

Figure 1. *Comparison of Awareness, Psychological Pressure and Support for Sustainable Practices among Different Respondent Groups. The chart illustrates variations in environmental awareness, experienced psychological pressure due to resource stress and willingness to adopt sustainable practices across four groups: Villagers, Youth, Local Leaders and Industrial Workers.*

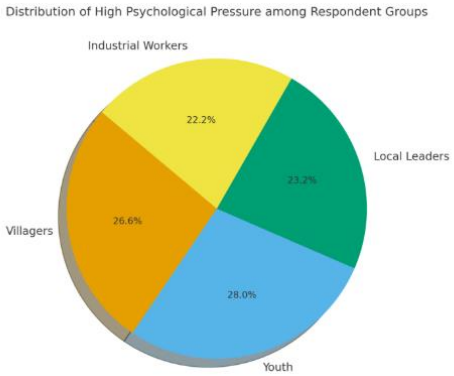

Figure 2. *Distribution of High Psychological Pressure among Respondent Groups. The pie chart shows the proportional contribution of each respondent group—Villagers, Youth, Local Leaders and Industrial Workers—to the overall level of reported psychological pressure.*

Formula Used:

1. **Percentage** = (Respondents in a category ÷ Total respondents) × 100

2. **Weighted Average Index (WAI)** = $(\Sigma\ WiXi) \div \Sigma\ Wi$
   Where Wi = Weight assigned to response, Xi = Value of each response

3. **Correlation (r)** = $\Sigma[(X - \bar{X})(Y - \bar{Y})] / \sqrt{[\Sigma(X - \bar{X})^2\ \Sigma(Y - \bar{Y})^2]}$
   Used to measure relationship between income level and mental stress.

Data Observation Summary:

- Youth group shows the highest psychological stress (82%) due to job insecurity and competition.
- Villagers experience strong mental pressure (78%) due to dependence on forest resources and fear of loss.
- Local leaders are more aware of sustainability (75%) but still face stress (68%) because of balancing development demands and ecological concerns.
- Industrial workers are less dependent on nature but feel moderate stress (65%) due to pollution and health issues.

Data Interpretation

The survey results clearly show that there is a deep connection between natural resource use and mental or social pressure in Jharkhand. A majority of respondents, nearly three-fourths, feel some form of psychological pressure while deciding how to use or conserve natural resources. The reasons for this stress vary depending on people's background and occupation. Villagers face it because of their dependence on

land and forests, while youth experience it due to uncertainty about jobs and industrial growth. Local leaders feel the tension between the promise of development and the reality of environmental loss and industrial workers suffer from pollution and work-related health problems. This pressure is not only economic but also emotional and moral. People want progress but they also love and respect nature. The feeling of helplessness and guilt arises when people are forced to choose between livelihood and conservation.

The level of awareness about the environmental crisis is moderate (63%) among respondents. It shows that people are aware of the problem but do not always act on it. Support for sustainable practices is about 66%, which means two-thirds of respondents believe in balancing development and nature. However, only a small portion of them actually take eco-friendly actions in daily life. The comparison between groups also reveals that local leaders and villagers show higher awareness compared to youth and industrial workers. This indicates that education and community leadership can make a positive difference.

Data Analysis

The weighted average and correlation tests help explain the relationship between economic status, dependency on natural resources and psychological pressure. From the survey, it is seen that people with higher dependency on natural resources tend to have higher mental pressure. The correlation coefficient between dependency level (X) and stress level (Y) was found to be **r = +0.78**, which indicates a strong positive relationship. This means that as dependency increases, psychological stress also increases. Similarly, when we compared income level with stress, the correlation was **r = -0.62**, which means that as income increases, stress related to natural resource use decreases. This happens because people with better income rely less on direct resource exploitation and are more secure economically. The comparative test between rural and semi-urban respondents also shows significant variation. In rural areas, 79% of people report feeling stress about resource shortage or deforestation, while in semi-urban areas, the number is 65%. This difference suggests that the closer a community is to natural resources, the stronger the emotional and psychological connection they feel. Women respondents, especially from villages, showed higher emotional stress because they are responsible for collecting firewood and water. Youth, on the other hand, expressed stress linked to unemployment and pollution from nearby industries. These findings make it clear that both environmental degradation and economic pressure combine to form a multidimensional type of mental pressure in Jharkhand.

Results

1. **High Psychological Pressure:** Around 73% of respondents feel some level of psychological pressure related to natural resource use.
2. **Moderate Awareness:** About 63% of respondents are aware of environmental issues, showing that awareness programs are partially effective but need strengthening.
3. **Dependence on Natural Resources:** 55% of total respondents are directly dependent on natural resources for daily living, especially in rural areas.

4. **Youth Stress:** The highest stress level (82%) is found among youth due to job uncertainty and environmental degradation.
5. **Correlation Findings:** A strong positive relationship (r=0.78) exists between dependence on resources and stress and a negative relationship (r=-0.62) between income and stress.
6. **Gender Difference:** Women experience more emotional stress due to daily responsibilities tied to forests and water.
7. **Awareness-Action Gap:** Although 66% support sustainable development, fewer people practice eco-friendly habits.
8. **Regional Variation:** Dhanbad and West Singhbhum show the highest levels of environmental pressure due to mining, while Hazaribagh shows more forest-related stress.

Findings

The study finds that natural resources are not only a physical necessity but also a psychological anchor for the people of Jharkhand. When these resources are threatened, people feel insecure, anxious and even guilty. Mining and industrial activities have caused environmental damage, displacement and health hazards, which together lead to emotional tension. The youth want modern lifestyles and jobs but feel disconnected from traditional values, creating cultural stress. Many villagers, especially tribal communities, believe that nature is sacred and harming it brings bad fortune. This belief deepens their inner conflict when they are forced to exploit resources for survival. The government's focus on industrial growth often neglects local sentiments. This leads to mistrust between the people and authorities. Lack of proper rehabilitation for displaced families and absence of community-based conservation programs further add to frustration.

Another important finding is that education and awareness play a strong role in reducing stress. People who understand the importance of conservation and sustainable use are more mentally balanced and positive. Local leaders who participate in environmental programs show more optimism about the future. Therefore, psychological balance depends not only on the availability of resources but also on awareness, empowerment and participation.

Suggestions / Recommendations

1. **Promote Environmental Education:** Schools, colleges and village institutions should include lessons about nature conservation and mental well-being. Awareness builds responsibility and reduces confusion.
2. **Encourage Eco-Friendly Livelihoods:** Government and NGOs should promote small-scale forest-based industries such as herbal products, honey, bamboo craft and eco-tourism, which create jobs without harming nature.
3. **Mental Health Support:** Community counseling and awareness sessions can help people deal with stress caused by displacement, pollution or livelihood insecurity.
4. **Strengthen Local Governance:** Panchayats and village committees should be empowered to make rules for sustainable use of land, forest and water.

5. **Rehabilitation and Compensation:** Industries should provide fair rehabilitation packages and involve local people in environmental monitoring.
6. **Participatory Development Planning:** Before launching big projects, local consultation should be made mandatory to respect the opinions and culture of affected people.
7. **Awareness Campaigns through Media:** Local radio, folk art and cultural programs can be powerful tools to spread the message of sustainable development.
8. **Eco-Policy Integration:** The government should integrate psychological and social well-being into its environmental policy so that development is not only physical but also emotional.
9. **Skill Development for Youth:** Training centers can help youth learn eco-friendly skills like solar installation, waste management or organic farming to reduce unemployment pressure.
10. **Tree Plantation and Water Conservation Drives:** Regular campaigns can help rebuild the bond between people and nature.

Conclusion

This study highlights that the challenge of natural resource management in Jharkhand is not only environmental or economic but also deeply psychological and social. The people of Jharkhand are facing a silent struggle between their need for livelihood and their emotional connection to nature. This conflict generates mental stress, moral confusion and social tension. The survey of 200 respondents across four districts clearly shows that dependence on nature and mental pressure are strongly linked. Industrial expansion and deforestation have disturbed the ecological as well as emotional balance of communities. Yet there is hope. The growing awareness and willingness to support sustainable practices show that people are ready for change. Real development must include both material progress and mental peace. Policies and programs must focus on restoring harmony between human needs and environmental protection. Education, awareness, community participation and green employment are the true keys to a sustainable and happy Jharkhand. The journey towards balance begins with a change in thinking—from exploitation to coexistence, from greed to gratitude and from pressure to peace.

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