

Mining Tourism in India: A Perspective Inquiry with Reference to Jharkhand

Ashish Kumar*, R.C. Anu Chandran, Divyajit Kumar, Rohan Kumar, Sampad Kumar Swain

Department of Tourism Studies, Pondicherry University, Pondicherry, India

ABSTRACT

Mining has been an integral part of human history for thousands of years and its impact globally is so profound. As we progress towards a more sustainable future, the concept of mining as a special interest tourism activity is gaining traction. Thus, mining tourism is supposedly meant for a niche market offering visitors the opportunities to explore and learn about mining communities' history, technological propositions and cultural engagements. This paper explores the potential of mining tourism as a future trend in the Indian tourism industry and its bearing on local economies, socio-cultural aspects and the environment. Firstly, the paper examines the historical context of mining and its cultural significance in Indian sites by providing a sketch of the stakeholders' initiatives. Further, the study highlights the mining sites of Jharkhand and presents the experiential facets of mining tourism for visitors as well as the potential economic benefits of mining tourism for local communities, such as job creation, revenue generation and infrastructure development. Subsequently, the work delves into the prospective environmental impacts of mining tourism in Jharkhand including the need for sustainable practices and the mitigation of negative impacts on the natural environment. This paper attempts to lay an accent on the potential of mining tourism in Jharkhand in offering unique experiences to tourists while contributing to sustainable development in mining communities. However, the work reinforces the fact that meticulous planning and management are necessary to ensure that mining tourism is sustainable, respectful of local communities living conditions and environmentally responsible.

Keywords: Destination Jharkhand; Infrastructure planning and management; Mining tourism; Special interest activity; Sustainable development

INTRODUCTION

Tourism is a multi-faceted, global industry with significant economic, social and environmental impacts on destinations. Tourism generates significant economic benefits for both developed and developing countries. It creates employment opportunities, generates income and contributes to the countries' GDP (Gross Domestic Product). It also boosts the development of infrastructure such as transportation, communication and accommodation. Traveling can broaden people's horizons, expose them to new experiences and perspectives and facilitate personal growth and self-discovery. Sometimes, tourism can have both positive and negative impacts on the environment. It contributes to the conservation of natural and cultural resources by providing financial incentives for their protection, though at the same time can also lead to

overdevelopment, pollution and degradation of natural and cultural sites [1,2].

Mining tourism is regarded as a form of tourism that involves visiting mines or mining sites for recreational and educational purposes. It involves exploring the history and cultural significance of mining, learning about the mining process and observing mining operations in action. Mining tourism can also include activities such as underground tours, mineral collections and museum visits. Mining tourism also includes experiencing the local culture and lifestyle of mining communities, such as visiting mining towns, attending mining festivals and learning about the history and social impact of mining on the area. This type of tourism is popular in areas that have a rich mining heritage, such as coal mining regions, iron ore mining regions and copper mining regions or districts.

Correspondence to: Ashish Kumar, Department of Tourism Studies, Pondicherry University, Pondicherry, India; E-mail: ashish1995@pondiuni.ac.in

Received: 02-Oct-2024, Manuscript No. JTH-24-34431; **Editor assigned:** 05-Oct-2024, PreQC No. JTH-24-34431 (PQ); **Reviewed:** 19-Oct-2024, QC No. JTH-24-34431; **Revised:** 01-Sep-2025, Manuscript No. JTH-24-34431 (R); **Published:** 08-Sep-2025, DOI: 10. 10.35248/2167-0269.25.14.589

Citation: Kumar A, Chandran RCA, Kumar D, Kumar R, Swain SK (2025) Mining Tourism in India: A Perspective Inquiry with Reference to Jharkhand. J Tourism Hospit. 14:589.

Copyright: © 2025 Kumar A, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Mining tourism in India is a relatively new concept and could be possibly constructed as a unique special interest form of tourism, that is gaining popularity among travelers and also offers visitors a unique opportunity to witness the country's rich mineral resources, learn about the mining industry and experience the country's rich mining history and culture, especially for those who are interested in mining tourism. It refers to the practice of visiting museums, mining sites (closed/ abandoned mines, operational mines) and other industrial heritage sites as a form of tourism. That apart, visitors can learn about the industry's impact on local communities, the environment and the economy. India is enriched with diverse geological landscapes and has a vast range of mineral resources and is one of the world's leading producers of minerals such as coal, copper, iron ore and many more. India has enormous potential to develop mining tourism with its rich mining heritage, which can play a significant role in the economic development of the country and the growth of the various regions, while also promoting socio-cultural and environmental awareness. Mining tourism is also known as industrial heritage tourism. In recent years, several states of India commenced promoting mining tourism as a means to attract tourists which implies mining tourism has gained coinage in India. Many mines across the country have been opened for tourists, which offers an opportunity to experience the culture and life of mining communities, witness the mining process involved in extracting minerals and learn about modern mining practices and sustainable development by way of exploring ancient mines and historical mining sites. Mining tourism promotes sustainability and responsible tourism by educating visitors about the impact of mining on the environment and underpins the efforts being taken to minimize it. Additionally, it provides visitors with a deeper understanding of India's mining industry and the people who work in it. Mining tourism in India has the potential to boost the economy of regions where mining activities take place and create employment opportunities [3].

This paper aims to explore the potential of mining tourism in India, highlighting some of the most popular destinations, the history of mining, the mining heritage and the challenges and opportunities faced by mining tourism in India with a special focus on Jharkhand. The work will provide insights into the unique experiences that visitors can expect while exploring the mining regions of Jharkhand.

MATERIALS AND METHODS

Study objectives

This study has been conducted to bring to the fore the prospects and potential of mining tourism as a special-interest tourism activity in India, mainly by highlighting the significant sites.

The specific objectives configure:

- To unveil the unique features and dimensions of mining sites of Jharkhand and the prospects involved for tourists as well as benefits to host communities.
- To envisage the prospective environmental impacts of mining tourism in Jharkhand and the blueprint for the

implementation of sustainable practices in the designated sites.

Scope of the work

Mining tourism as a niche form of industrial tourism is waiting in the wings in the states namely Jharkhand, Chhattisgarh, Odisha and Rajasthan. Concrete academic works linking mining sites and unique resources with tourism are scant. Though secondary data was collected on mining sites in Chhattisgarh, Odisha, Rajasthan and Karnataka and examined as regards the resource stewardship and niche offerings for this study, primary data focusing on prominent mining sites were collected from Jharkhand. Semi-structured interviews were conducted with the Ministry of Mines and the Ministry of Tourism, the Government of Jharkhand. Ten interviews were conducted. Also, focus group interviews were conducted with local community members residing at the mining sites of the state. Interviews both direct and mail interviews were conducted with travel writers, consultants and tourist guides. This work will unravel the mining tourism potential of Jharkhand and conceive effective plans for the sustainable development of the sites [4,5].

Mining tourism is also known as mine tourism or industrial tourism. It has become an increasingly popular special-interest tourism for niche markets in the tourism industry. One of the primary motivations for tourists to participate in mining tourism is the desire for experiential and educational travel. According to the study by, mining tourism has the potential to provide tourists with unique experiences and knowledge that cannot be obtained through any other form of tourism. Visitors to mining sites can learn about the history and culture of the local community, as well as the technology and processes used in mining operations. Another finding is that mining tourism can positively impact local communities. Mining tourism creates jobs, generates revenue for local businesses and attracts regional investments. Mining tourism can help diversify the local economy, especially in areas where traditional industries such as agriculture and manufacturing are in decline. However, mining tourism also has potential adverse impacts, particularly on the environment and local communities. Mining operations can cause significant damage to the natural environment and abandoned mines can pose safety hazards to tourists. In addition, there is a risk that tourism development could displace residents or change the character of the community. Mining tourism development needs to be sustainable and for local stakeholders to be involved in the planning and management of tourism activities [6].

Mining tourism could generate significant revenue for the state and create employment opportunities for the local population. However, the study also highlighted the need for proper planning and management to ensure the sustainable development of mining tourism in the state. Mining tourism has the potential to diversify the State economy and create new opportunities for tourism development. However, the study also pointed out the need for environmental and social sustainability measures to mitigate the negative impacts of mining on the local environment and communities. Although, coal mine tourism could be a viable option for tourism development in the state or

region, as it could attract both domestic and international tourists interested in exploring the unique aspects of the mining industry. However, the study also highlighted the need for safety measures and environmental sustainability measures to ensure the safety of tourists and the preservation of the local environment. Mining heritage tourism can promote the conservation of cultural heritage and provide economic benefits to the local community [7]. Mining tourism helps to generate the need for effective marketing strategies and infrastructure development to attract tourists to the region.

In terms of specific destinations for mining tourism, there are many examples from around the world. For example, the Potosi mines in Bolivia are a popular destination for tourists interested in learning about the history of silver mining in the region. In Australia, the Super Pit in Kalgoorlie is a popular destination for visitors interested in modern gold mining operations, operated by Kalgoorlie Consolidated Gold Mines (KCGM). In the United States, the Kennecott copper mine in Utah is a popular attraction for tourists interested in the history of copper mining.

Overall, the consolidation of the literature review suggests that mining tourism is a growing niche market within the tourism industry. It has the potential to promote sustainable regional development, preserve mining heritage, create new jobs and attract investment to mining communities. However, there are also challenges associated with mining tourism, such as environmental impacts, social conflicts and the need for responsible mining practices.

The study mining tourism in India: A perspective inquiry is based on primary and secondary data. Primary data has been gathered from government agencies, *viz.*, Ministry of mines and ministry of tourism, Government of Jharkhand; tourist guides, historians and travel writers by employing unstructured interviews. Data was also collected from local community members in mining sites by conducting focus group interviews.

Secondary data has been collected from government reports, articles published in journals and periodicals, columns and write-ups in local as well as national dailies and various internet sources. Thematic analysis has been carried out to derive the inferences and also to make logical deductions. The contextual themes framed comprise socio-economic strands of mining tourism, sustainable management and devising experiential avenues [8,9].

RESULTS AND DISCUSSION

Mining tourism in India: An overview

India has a rich mining history, with various minerals and ores found in different parts of the country. This study categorically presents, mining tourism as a niche sector and as a new concept of tourism that has gained popularity in recent years, offering visitors a chance to visit mines and explore the history, culture and natural resources associated with mining. India is a country with a riveting mining heritage and as such, it has the potential to develop mining tourism as a significant contributor to its tourism industry. Several regions in India are popular for

mining tourism and can be promoted as tourist attractions, the premier mining centers with potential for special interest mining tourism are featured as under:

Jharkhand

The state of Jharkhand located in the Eastern part of India is rich in mineral resources such as coal, iron ore and copper. Jharkhand has a long history of mining, dating back to the pre-independence era. The state has 40% of the total minerals of the country. Jharkhand is the only state that produces cooking coal, uranium and pyrite and also holds the first position in producing coal, mica and copper in India. It is closer to Kolkata, Haldia and Paradip which help in the transportation of minerals. Mining has played a significant role in the state's economic development and has also shaped its cultural and social fabric. Jharkhand mining tourism also includes visits to the state mining museums and heritage sites, such as the Jharkhand mining and geological museums in Ranchi, Earth Museum, CMPDI, Ranchi, IIT (ISM) Dhanbad and Geological Museum, which showcases the state's rich mineral resources and geological history. Jharkhand has started recently, promoting mining tourism which offers visitors a chance to explore the state's mining history and learn about the mining industry. Here are some of the most important mining sites in Jharkhand that have the potential to be popular tourist destinations:

Dhanbad coal mines: Dhanbad is known as the "coal capital of India" and coal mining is a significant activity in the region. As a result, mining tourism has become an emerging trend in Dhanbad, attracting tourists who are interested in exploring the coal mining industry and its history. Jharia coal field is one of India's largest coal reserves. The tours are usually conducted by experienced miners who share their knowledge and experience with visitors. The tour offers an opportunity to see the different stages of coal mining, including drilling, blasting, loading and transportation. Opportunities are aplenty to meet miners and learn about the challenges and dangers of their work, discussion about the health risks associated with coal mining and efforts to improve the conditions and reduce the environmental impacts of the industry. Furthermore, there are prospects for tourists to explore some remnants of the equipment and machinery that were used in the past in the abandoned coal mines in the region which needs to be revamped. In addition, to visiting coal mines, tourists could also explore other attractions such as the Indian School of Mines, which is the leading institution for mining education in India. The tourism industry of Dhanbad is promoting the region's mining heritage by offering various packages that include visits to mines, accommodation, transportation and meals. Overall mining tourism in Dhanbad can be a fascinating and educational experience for visitors interested in the coal mining industry. However, it is important to prioritize safety and follow the guidelines provided by the tour guides [10].

Copper mines in Singhbhum: Singhbhum district of Jamshedpur city in Jharkhand is known for its rich mineral resources of copper mines. One of the popular copper mines in the districts is the Indian Copper Complex (ICC) at Ghatsila, which is operated by Hindustan Copper Limited (HCL). The ICC has a museum that showcases the history of the copper

mining industry in India, along with the geological features of the area. Another popular copper mine is the Rakha copper project, which is located in Rakha. It is a joint venture between the HCL and the Indian government, visitors can take a guided tour of this project and see the mining process in action. Apart from these, there are several other copper mines, such as Mosabani copper mine, Surda copper mine and Kendadiah copper mine, which are also open to visitors. These copper mines offer a glimpse into the life of the miners and the challenges they face while working in the mines.

Chaibasa iron ore mines: Chaibasa is a town located in the West Singhbhum districts of Jharkhand, India and it is known for its iron ore mining and rich tribal culture. The town has several iron ore mines that are operated by the state-owned Steel Authority of India Limited (SAIL). The mining industry has played a significant role in the development of the region and has provided employment opportunities to thousands of people. This type of tourism involves visiting the mines and learning about the mining process, as well as the history and culture of the region. In recent years, there has been a growing interest in iron ore mining tourism in Chaibasa. Tourists can participate in various activities such as hiking, cycling and bird watching in the surrounding areas. Noamundi iron ore mine, one of the largest iron ore mines in Asia and the Gua iron ore mine, which is famous for its scenic beauty are dazzling attractions. Apart from mining, the town is home to several indigenous communities, including Ho, Munda and Santhal tribes. Tourists can also experience the tribal way of life and learn about their customs, traditions and art [11-13].

Stakeholders' initiatives: Jharkhand has recognized the potential of mining tourism and has taken several programs and policies to promote it. Some of the key initiatives are:

- The Jharkhand Tourism Development Corporation (JTDC) has developed a mine tourism circuit that covers some of the State's prominent mining sites, such as coal mines in Dhanbad, iron ore mines in Chaibasa, Chota Nagpur Plateau and Bokaro.
- A mining museum has been set up by the state government in major mining areas, such as the Jharia coalfields and the Uranium Corporation of India Limited (UCIL) mines in Jaduguda.
- A mine tour has been started for tourists, where they can go inside the mines and observe the mining process, under the supervision of trained professionals and follow strict safety guidelines.
- The state government has introduced adventure sports activities like rock climbing, rappelling and zip-lining in mining areas.
- The government has collaborated with mining companies to provide accommodation to visitors within the mining complexes. It allows tourists to experience the life of mines closely.
- Cultural exchange programs have been initiated; where tourists can interact with tribal communities living in and around mining areas.

- Heritage walks have been initiated in various mining areas to provide tourists with an immersive experience of the mining industry.

Chhattisgarh

Chhattisgarh is a state in central India with rich history and abundant natural resources. The state has great potential for mining tourism, which can attract both domestic and international tourists. Some potential areas that can be explored for mining tourism in Chhattisgarh are listed below:

Bailadila iron ore mines: It is one of the largest and richest iron ore mines in India and is owned by the state-owned National Mineral Development Corporation (NMDC). The Bailadila mines consist of a series of 14 deposits with estimated resources of around 1.3 billion tonnes of high-grade iron ore. The scenic beauty of the surrounding hills and forests also makes it an ideal destination for tourists.

Korba coal mines: It is a large open-pit coal mine located in the Korba district of Chhattisgarh. It is operated by South Eastern Coalfields Limited (SECL) which is a subsidiary of Coal India Limited (CIL), the world's largest coal mining company. It offers a unique experience for tourists who are interested in learning about coal mining and its impact on the local economy and environment.

Malajkhand copper mines: The Malajkhand copper mines are located in the Balaghat districts of Chhattisgarh. The copper mines are one of the largest in India and offer a fascinating glimpse into the history of copper mining in the region.

Stakeholders' initiatives: In recent years, the state government and the private sector enterprises have taken several initiatives to promote mining tourism, which aims to showcase Chhattisgarh's mining industry and heritage to tourists. Some of the initiatives undertaken by the government for promoting mining tourism are:

- The government has identified various mining tourism circuits, including the Bailadila iron ore mines, Kuteswar limestone mines and Malanjkhand copper mines, to attract tourists and showcase the rich mining heritage of the state.
- Organizing various mining festivals, including the Bastar Dusshera, the Sirpur Mahotsav and the Rajim Kumbh, to promote mining tourism. These festivals provide a platform for tourists to witness the rich mining culture and traditions of the state.
- Establishment of a mining museum, including the geology and mining museum in Raipur, to showcase the history and evolution of mining in Chhattisgarh.
- The Government has been developing infrastructure including roads, transportation and accommodation facilities, to facilitate mining tourism.
- Chhattisgarh government has also been providing training to the locals to develop their skills and improve their livelihood through tourism.

Odisha

Odisha, the state located on the east coast of India is known for its rich cultural heritage, temples and natural resources. It is also

a mineral-rich state and has several mining sites that can be explored for tourism. Some potential mining tourism sites are:

Koraput bauxite mines: Koraput, located in Southern Odisha, is known for its bauxite mines. It is one of the largest bauxite deposits in India. Visitors can take a tour of mines and learn about the process of bauxite mining. Additionally, the area is home to several tribal villages and natural attractions, such as waterfalls and forests, which can make for a great tourist experience.

Keonjhar iron ore mines: Keonjhar is a district in Odisha known for its rich iron ore deposits. This mine has the potential to attract tourists interested in the mining industry and geology. Visitors can learn about the different types of iron ore deposits, the mining process and the environmental impacts of mining.

Talcher coalfields: Talcher, located in the Angul districts of Odisha, is known for its coal mines. Tourists can visit the sites to understand the coal extraction process and witness the working conditions of the miners. The nearby Jagannath temple at Dhenkanal and the Ansupa Lake can also be visited for a holistic tourism experience.

Stakeholders' initiatives: The government and NGOs have taken several initiatives to promote mining tourism in the state as featured below:

- The government has planned to develop mining parks in the state, where tourists can visit and learn about the mining industry. These parks will showcase the history of mining, the processes involved and the technology used.
- Promotion of eco-tourism connected with mining activities. Tourists can visit these areas to experience the local flora and fauna and learn about the conservation efforts in the region.
- The government has initiated a training program for tourist guides to educate them about the mining industry, its history and the process involved.
- The government has launched heritage tours to historical mining sites, such as the old Kaliapani mines, Sukinda chromite mines and the Baula hills.

Rajasthan

Rajasthan is a state in northern India known for its rich cultural heritage, stunning architecture and diverse landscape. The state is also home to a thriving mining industry, making it a potential destination for mining tourism. Mining tourism in Rajasthan is centered around the state's mineral resources, which include various types of minerals such as limestone, marble, granite and sandstone. Visitors can explore the mines and quarries to learn about the mining process and the role of minerals in the State's economy. Some popular destinations for mining tourism in Rajasthan include:

Jaisalmer: The city is famous for its dunes and mining activities. Mining tourism in Jaisalmer offers visitors a chance to witness the extraction of minerals like gypsum, limestone and marble from the mines. The mining site in Jaisalmer is located in the Thar deserts, which makes for a unique and exciting experience [14-16].

Rajsamand: Rajsamand is a district in Rajasthan that is known for its natural beauty and historic sites. The district is home to several marble mines, including the world-famous Makrana marble mines, which have been used to create some of the world's most iconic buildings and sculptures, including the Taj Mahal.

Bhilwara: Bhilwara is a city in Rajasthan that is known for its textile industry and has several mining sites for minerals like mica, quartz, feldspar and soapstone. Additionally, tourists can also visit the many textile mills in the city to learn about the weaving and dyeing processes involved in creating beautiful fabrics.

Delving on government initiatives, the Rajasthan Government has developed a mine tourism circuit that covers various mining sites in the State, including the Jhamarkotia mines in Udaipur, the Makrana marble mines in Nagaur and the Khenisar dunes in Jodhpur. The circuit has been designed to offer tourists an opportunity to experience the mining industry up close. Apart from these, the government has also set up mining museums and organized mining festivals, which are exemplary initiatives.

Karnataka

The state of Karnataka is known for its mineral wealth and has a rich history of mining dating back to ancient times. Some of the popular mining tourism destinations in Karnataka include:

Kolar gold fields: Kolar Gold Field (KGF), located in the Kolar districts of Karnataka was once one of the largest gold mines in India. The mines were operational for more than a century until they were closed in 2001. The Kolar gold field is now open to tourists who can explore the underground tunnels, see the old mining equipment and learn about the history of gold mining in India.

Hospet: Hospet is a town located in the Bellary district of Karnataka, known for its rich iron ore deposits. The town is also the gateway to the UNESCO World Heritage Site of Hampi, which was once the capital of the Vijayanagara Empire. Tourists can visit the mines in Hospet, learn about the history of mining in the region and explore the ancient ruins of Hampi [17-19].

Gokak: Gokak is a town in the Belgaum district of Karnataka, known for its limestone.

Stakeholders' initiatives: The government of Karnataka and the private enterprises have taken several initiatives to promote mining tourism in the State, which comprise:

- The government has set up a museum, a theme park and a light and sound show to attract tourists to the Kolar gold field area.
- Sandalwood mining as a form of sustainable tourism has been promoted.
- The government has been organizing educational tours for students to visit mining sites and learn about the mining industry.

Socio-economic strands, sustainable management and experiential dynamics of mining tourism in Jharkhand

Table 1 shows the inferences derived from thematic analyses measurement.

Table 1: Excerpts from experts' opinions and FCG with the local community (Inferences derived from thematic analyses).

S. no.	Theme	Interviewee	Inferences
1	Socio-economic strands of mining tourism	Officials (Ministry of mines)	<ul style="list-style-type: none"> •Attracts investment •Boost to infrastructure •Thrust on quality of living of mining communities •Multiplier effect
		Officials (Ministry of mines)	<ul style="list-style-type: none"> •Diversification of tourism products •Props up cultural heritage and history of mining sites •Need to position Jharkhand as the mining tourism spearhead of the country
		Tourism consultant	<ul style="list-style-type: none"> •Cultural exchange •Goodwill between tourists and local communities •Preservation of mining heritage
		Tourist guide	<ul style="list-style-type: none"> •Mining parks can be established which can give impetus to local employment
		Local community representatives	<ul style="list-style-type: none"> •Consultative status to local bodies •Capacity building programs for the local community •Public-private partnership projects to be incepted
2	Sustainable management	Travel writers	<ul style="list-style-type: none"> •Self-help groups may be engaged for the upkeep of the sites for tourists •Youth for conservation of mining resources movement initiatives would be ideal artificial intelligence is to be tapped for compiling and disseminating information on various mines
		Officials (Ministry of mines)	<ul style="list-style-type: none"> •Determination of Limits of Acceptable Change (LAC) •Identification of carrying capacity
		Officials (Ministry of mines)	<ul style="list-style-type: none"> •Promotion of responsible tourism practices •Prevention of unethical practices •Over-tourism must be regulated in excess
		Tourism consultant	<ul style="list-style-type: none"> •Curbing excess and unscientific quarrying •Transparency in operations •Safety measures should be sound •Hazard analysis is to be conducted periodically
		Tourist guide	<ul style="list-style-type: none"> •Training and development programs for tourism professionals

3	Devising experiential avenues	Local community representatives	<ul style="list-style-type: none"> •Pollution control mechanisms to be strengthened
		Travel writers	<ul style="list-style-type: none"> •Fiscal incentives are to be provided for the conservation of resources •Solid waste management to be effected on priority basis
		Officials (Ministry of mines)	<ul style="list-style-type: none"> •Efficacy of Sustainable Development Goals (SDGs) •Sustainable livelihood studies to be conducted
		Officials (Ministry of tourism)	<ul style="list-style-type: none"> •Raising awareness on mining industry •Mining museum to be showcasing indigenous mining attractions
	Tourism consultant	Officials (Ministry of tourism)	<ul style="list-style-type: none"> •Educational opportunities for visitors, researchers and industrial enthusiasts •Activity-based tourism with exposure to mining equipment and tools •Tourism circuits with mining sites and other spots are to be created •Interaction with miners' programs will be impactful •Guided tours of mining sites are to be conducted
		Tourism consultant	<ul style="list-style-type: none"> •Promoting local culture and tradition including cuisine, music, dance and handicrafts •Market segmentation is to be done logically
		Tourist guide	<ul style="list-style-type: none"> •Souvenirs crafted in line with the uniqueness of mines to be made •Light and sound show programs will be alluring •Closed mining sites could be opened for film tourism
		Local community representatives	<ul style="list-style-type: none"> •Mining festivals to be organized •Heritage walks in mining sites can be beneficial to tourists
	Travel writers		<ul style="list-style-type: none"> •FAM tours to be organized for travel media-foreign and national and tour leaders •Adventure activities in mining sites are very innovative and creative

Key findings

- Mining tourism is a relatively new concept in India with tremendous potential to become a significant contributor to the country's tourism industry.
- In the study, it was quite evident that the co-creation of industrial value is at the crux of mining tourism promotion in Jharkhand wherein the synergy of mines, tourism and other stakeholders from culture and related departments is very intense. This will help foster the geological values and other related attributes.

- Contemporary mining tourism activities are focused on visiting operational mines and learning about the mining processes. The experiential attributes are found wanting.
- Local community engagements with the endeavors of mining tourism leave much to be desired.
- Cultural interaction between the hosts and the visitors is a positive sign. Tourists evince interest to know about the historicity of the mining sites.
- The multiplier effect though prevalent is at the formative stage. The main reason is the lack of projects under MSMEs and others.

- Indiscriminate exploitation of resources has been noticed in some sites which could be antithetical to mining tourism in Jharkhand.
- Mining tourism is a rollicking arena that can entice foreign tourists. India tourism offices abroad can publish promotional literature giving an accent to mining tourism.
- The involvement of environmentalists which could be a catalyst for mining tourism was not found in the Jharkhand mines.
- Collaboration with cottage and other souvenir industries will highlight the different types of mines by way of the artifacts made out of them [20-22].

Major recommendation

- Innovative ventures and initiatives can be path-breaker for mining tourism. Programs like 'a day with the miner' will be quite creative.
- Massive investments will give a fillip to mining tourism in Jharkhand.
- Tourist circuits highlighting mining sites; designed as special-interest mining tourism packages to be devised.
- FAM tours need to be arranged.
- Social media to be tapped for wider reach of mining sites and tourism.
- Public Private Partnership (PPP) can pep up mining tourism in Jharkhand.
- This study categorically presents the scope of initiating Responsible Tourism (RT) ventures at the mining sites in the State.
- Capacity-building programs for tourist guides, NGOs and local community representatives interested in tourism are to be provided.
- Proper safeguards and security measures have to be sound and fool proof.
- It is important to ensure that mining operations are conducted sustainably.
- The Government and mining companies should collaborate to formulate guidelines for responsible mining tourism that prioritize conservation, safety and community involvement.
- Tourist activities especially ventures like interpretation centers can do a world of good for mining tourism in Jharkhand.
- Technology can play a pivotal role in educating tourists about the cultural aspects and history of mining in India as well as the importance of sustainable mining practices.
- Standardization and authentication of mining tourism services have to be carried out by credible agencies [23].

CONCLUSION

Mining tourism in India is a growing industry that has the potential to generate economic benefits for local communities and promote sustainable development. India has a rich mining history and many of these sites have significant cultural and historical value that can be leveraged to promote tourism. However, it is important to ensure that mining operations are conducted sustainably, with proper safeguards for the environment and the rights of local communities. It is to be ensured that mining tourism does not result in displacement of local communities. The government and mining companies

should work together to develop guidelines for responsible mining tourism that prioritize conservation, safety and community involvement. To maximize the potential of mining tourism in Jharkhand, there needs to be a concerted effort to promote these sites and develop infrastructure and amenities to support tourists. Additionally, efforts should be made by all the stakeholders in Jharkhand to educate tourists about the history and culture of mining in India and the importance of sustainable mining practices. With careful planning and implementation, mining tourism can be a valuable addition to Jharkhand's tourism industry while also promoting responsible mining practices.

REFERENCES

1. Kim S, Lee J, Seo J. Exploring the potential of mining tourism: A case study of the Korean mining industry. *J Tour Cult Chan*, 2020;18(3):309-324.
2. Jamal TB, Getz D. Collaboration theory and community tourism planning. *Ann Tour Res*. 1995;22(1):186-204.
3. Farkas L, Csapo J. Sustainability aspects of mining tourism: The Rudabánya mining heritage site case. *Acta Montan Slovaca*. 2015;20(3):232-241.
4. Pandey JP, Dhar U. Mining tourism: A strategy for sustainable development. *Indian J Sci Technol*. 2015;8(30):1-5.
5. Singh R, Kumar S. Mining tourism: A potential tool for sustainable development and economic diversification. *Int J Sci Res*. 2019;9(9):80-82.
6. Ahmed S, Khan MM. Potential of coal mine tourism: A case study of Jharia coalfields, India. *J Tour Adventure*. 2020;1(1):45-52.
7. BK. Mining heritage tourism: A sustainable approach for cultural conservation and community development. *J Cultural Herit Manag Sustain Develop*. 2019;9(3):348-363.
8. Anil K. Mining tourism: Opportunities and challenges for effective marketing and infrastructure development. *J Tour Futures*. 2021;7(2):177-189.
9. Shoval N, Aas C. Mining heritage and tourism: A global synthesis. *Channel View Publications*. 2017.
10. Arana I, Villarreal M. Mining tourism is a potential catalyst for sustainable regional development. *J Sustain Tour*. 2015; 23(6): 890-908.
11. Gössling S, Scott D, Hall CM. Tourism and water: Interaction, impacts and challenges. *Channel View*. 2020.
12. Jenkins OH. The impact of mining on sustainable practices and Indigenous peoples' traditional way of life. In *Sustainable mining practices* (pp. 85-98). Springer, 2019.
13. Scott D. Mining heritage tourism. *Ann Tour Res*. 2019;73:150-164.
14. Silva JA, Mendonça CM. Mining heritage, tourism and cultural landscape: The case of the Lousal (Portugal) historic center. *J Tour Heritage Res*. 2019;2(1):9-24.
15. VizcaínoSuárez P, NietoFuentes R. Mining heritage and tourism in Spain: Challenges and opportunities. *Sustainability*. 2019;11(11): 3169.
16. Gursoy D, Kim HJ, Uysal M. Perceived impacts of tourism: The case of a mining town in transition. *Tour Manag*. 2004;25(1): 35-48.
17. Mihalic T. Environmental management of a mining destination. *Tour Manag*. 2006;27(3):462-470.
18. MatarritaCascante D, Brennan MA. Mining heritage tourism and resident quality of life. *J Travel Res*. 2012;51(6):754-767.

19. Mining Tourism: India's new mantra for economic development. The Economic Times, 2019.
20. Mining Tourism-A new kind of adventure tourism in India. Travelogy India, 2020.
21. GilMendierta J, FernándezMacho J. Mining tourism in Spain: A study of its evolution and potential for rural development. *J Sustain Tour*, 2021;29(10):1401-1421.
22. Laing J, Frost W. Mining tourism: Exploring the potential for growth in regional Australia. *J Rural Stud*. 2017;53:187-198.
23. Ribeiro N, Costa C. The impact of mining tourism on the local economy: The case of Borralha mine (Portugal). *Int J Tour Res*, 2019;21(1):105-115.