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## Review of Mining Tourism and Destination Image Positioning – Case Study: India

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### Abstract

Destination image positioning plays a pivotal protagonist in the accomplishment of mining tourism. By strategically shaping the perception of a mining destination, marketers can entice visitors who are interested in the exceptional experiences and cultural heritage associated with mining. The lack of destination image positioning and mining tourism research can hinder the growth and advancement of mining tourism destinations. Without a clear understanding of the unique attributes and market positioning of a mining destination, it becomes challenging to effectively target and attract the right audience. Insufficient research on mining tourism also limits the ability to identify and capitalize on the destination's potential, such as its cultural heritage, environmental sustainability, or adventure offerings. Without a well-defined destination image and research-backed strategies, marketing efforts may fall short of conveying the value and appeal of mining tourism experiences. Therefore, stakeholders and researchers must invest in studying and understanding the market dynamics, visitor preferences, and the prospective welfare that mining tourism can fetch to local economies and communities. This research can inform effective destination image positioning strategies and help unlock the full potential of mining tourism destinations. Therefore, current environmental, social, and economic viewpoints on the sustainability of this type of tourism growth are outlined in a review of the literature in this area for the Indian scenario.

### 1. Introduction

Sustainable development is a critical global imperative aimed at creating a harmonious balance between economic development, social progress, and environmental safeguard [1]. It recognizes the interdependence of these three pillars and seeks to address the necessities of the existent generation without conceding the capability of future generations to encounter their own necessities [2]. At its core, sustainable development promotes the proficient usage of resources, the reduction of waste and pollution, and the preservation of biodiversity [1]. It advocates for the integration of environmental considerations into economic decision-making processes, recognizing that a healthy environment is fundamental to human well-being and prosperity [3]. In the pursuit of sustainable development, societies strive to achieve inclusive and equitable growth that addresses

poverty, inequality, and social injustice [1]. It emphasizes the importance of social cohesion, human rights, and equal opportunities for all, ensuring that no one is left behind in the quest for a better future [4].

Sustainable development recognizes the global nature of challenges and the need for international cooperation [4]. It encourages collaboration among nations, organizations, and individuals to address issues such as climate change, deforestation, water scarcity, and poverty eradication [5]. Achieving sustainable development requires a long-term perspective, visionary leadership, and collective action. Education and awareness play a crucial role in promoting sustainable development, empowering individuals to make informed choices and adopt sustainable lifestyles [4]. It offers a transformative vision for a better future, where

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economic prosperity, social well-being, and environmental stewardship go hand in hand [1]. This approach has recently aligned itself towards tourism.

Sustainable development in tourism is the practice of conducting tourism activities in a manner that diminishes negative influences on the environment, preserves local cultures and heritage, and generates long-term economic benefits for host communities [1]. It aims to create a stability amid the economic benefits of tourism and the preservation of natural and cultural resources, ensuring that tourism can be enjoyed by present and future generations [3]. One key aspect of sustainable tourism development is environmental conservation, which involves implementing practices that minimize the ecological footprint of tourism activities [4]. Another crucial element is the safeguarding of local cultures and heritage, which seeks to respect and celebrate the cultural diversity of host communities [1; 2]. By fostering cultural understanding and respect, sustainable tourism can contribute to the preservation of unique cultural identities and traditions [4].

Economic benefits play a dynamic protagonist in sustainable tourism development as well [1]. It strives to create economic opportunities and improve the quality of life for local communities by promoting local businesses and supporting small-scale enterprises [3]. This can be achieved through the encouragement of community-based tourism initiatives, the sourcing of local products and services, and the endowment of training and employment prospects for the local workforce [2]. Sustainable tourism aims to ensure that the economic benefits derived from tourism are disseminated fairly and contribute to poverty reduction and sustainable development [1].

In summary, sustainable development in tourism focuses on minimizing negative impacts on the environment, preserving local cultures, and generating long-term economic benefits [5]. By adopting sustainable practices, tourism can become a catalyst for positive change, contributing to the safeguarding of natural and cultural heritage while promoting economic growth and social well-being [1]. It is a holistic tactic that recognizes the interdependence of economic, environmental, and social aspects, ensuring that tourism can thrive sustainably and responsibly [2].

Mining tourism is becoming increasingly popular as a tourist destination due to the need to handle closed, inactive mines, the option of employing an unemployed person, and the ongoing quest for new attractions [1; 2; 3]. Sustainable mining tourism

seeks to mitigate environmental and social impacts and provide visitors with an educational and immersive experience that highlights the industry's challenges and achievements [4; 6; 7]. It aims to involve local communities in tourism initiatives and ensure they benefit from the industry's presence, while also incorporating local cultural heritage and traditions into tourism experiences to better understand the mining industry's historical context and its impact on local identities [6].

Mining tourism is an important part of tourism, as it gives visitors the chance to learn about mining equipment, devices, and technologies, as well as the minerals, ores, and rocks that are locally accessible [8]. It also has a social component, so it's important to portray miners as independent individuals and respect the cycle of completion and recurrent opening of operations [9; 10; 11]. Research has been published in the area of tourism activities, but research findings have not yet been effectively applied to creating mining tourist products. Mining tourism is increasing while mining decreases, and it gives visitors the chance to learn about mining equipment, devices, and technologies, as well as the minerals, ores, and rocks that are locally accessible [2; 3; 4; 12; 13; 14; 15].

However, inducing tourism in mining sites requires a unique strategy called 'destination image positioning'. Destination image positioning refers to the strategic process of shaping and influencing the perception and positioning of a destination in the minds of potential visitors. It involves carefully crafting and communicating the unique attributes, experiences, and value propositions that differentiate a destination from its competitors. The purpose of destination image positioning is to create a strong and favourable image that resonates with the target market, attracts visitors, and ultimately drives tourism growth.

Studying mining tourism today aims to gain insights into the intersection of the tourism and mining industries and promote sustainable development. In order to achieve this, destination image positioning in tourism needs to be studied alongside the mining tourism growth rate and criteria inducing it. Thus, the paper first discusses the destination image position and its correlation to tourism. Then it moves ahead towards exploring residents' perception of tourism development to better understand the destination image. Following this section is the one discussing worldwide scenarios and examples of mining, tourism and an amalgamation of both called 'mining tourism'. Since India has a rich abundance of mineral

resources, mining plays a crucial role in its economy. The next section talks about the Indian context of the preceding section for a specified targeting. Moreover, India has several abandoned mines that were once operational but are no longer in use which can be transformed for inducing mining tourism. These mines may have been closed due to various reasons, including depletion of resources, economic viability, environmental concerns, or regulatory issues. The next section talks about the challenges in mine tourism to comprehend mine closure and its prospects. The paper finally concludes with the revealing of ideal scenarios for closed mine reclamation for positive tourism development in the same.

## 2. Destination image position

A destination image is the expression of all objective knowledge, impressions, prejudice, imaginations, and emotional thoughts an individual or group might have a particular place [16]. Through interaction with the physical environment, the sense of place is produced. Through human experience, abstract space, which has no importance beyond its strangeness, transforms into a physical location full of significance [17]. The amorphous becomes solid, the abstract gets more specific, commitments become assurances, and movement becomes halted. A destination's image is often evaluated based on three sets of criteria: (i) the legal and regulatory environment; (ii) the business climate and infrastructure; and (iii) the availability of people, cultural, and natural resources. The first of these categories refer to aspects of a destination's resources that relate to policy and are generally in the control of the government. The second category denotes aspects of the business environment and the economic infrastructure, and the third category refers to aspects of a destination's human and cultural resources [18].

The views of a location as represented by the connections kept in a traveller's mind may be described as the image of a destination brand [19]. A person's knowledge structure or memory is described as "a basic network in which all components or units are nodes and the connections among them are linked" by Anderson's [20] psychological theory of adaptive regulation of cognition. The linkages between the nodes signify the strength of the associations between the various bits of information that are kept in memory. Working memory is triggered when a stimulus is present in the external world or when an internal

production takes place. This information node might be spoken, visual, or abstract [21].

Destination image positioning is of utmost importance in the realm of tourism. In an increasingly competitive industry, destinations must strive to create a distinct and compelling image that captures the imagination of potential travellers. The need for effective image positioning arises from the desire to stand out from the crowd and entice tourists to choose a specific destination over countless others [22]. Moreover, residents' perception plays a crucial role in the success of tourism development through destination image positioning. The way local residents perceive tourism and the image projected by their destination can significantly influence its growth and sustainability. The next sections talk about the destination image positioning in tourism and the residents' perception of tourism development to comprehend the course of action for a specific engagement of mines as a tourist destination.

### 2.1. Destination image Positioning in Tourism

Destinations are engaged in an increasingly fierce fight for travellers' attention as international tourism grows. Destinations must provide and manage a favourable, yet distinctive image to remain in the current global market [22]. In reality, the choice and conduct of tourists toward a location are significantly influenced by the place's image [23; 24; 25; 26; 27; 28]. According to Beerli and Martín [29], this picture is a mental idea that is made up of a collection of perceptions gleaned from many sources of information. It is often divided into cognitive and emotional images. The former is imagined by travellers and is based on the calibre and the amount of information provided. The latter, in contrast, includes the attributes of the location itself [30], for information on this picture, is not only gathered from many sources but also depends on the attributes of each individual [29; 31]. When they have a unique encounter with a destination, tourists can also acquire a third impression of that location that sets it apart from all other locations [22].

Since visitors' views of a location can be impacted by the information they get from various sources, information sources serve as an essential antecedent of the destination image (i.e., in the construction of this picture). The relationship between the usage of information sources and the creation of destination images has been extensively researched in the literature [e.g., 32; 33; 34]. The way that consumers interpret the information,

which varies depending on the sort of communication they get [35], is what counts most.

According to several studies [36; 37; 38; 39], marketing of travel destinations has grown to be a particularly fascinating area of study. Since many nations employ promotion and international marketing to maintain their image and to compete with other destinations, the image of a destination has become a highly important subject in marketing research in the tourist sector. Such a study is more and more relevant since visitor happiness and choice are significantly influenced by a destination's perception [36; 40; 41].

Although extremely subjective, the image includes both cognitive (beliefs) and emotional (feelings) characteristics, making it challenging to quantify [30; 36; 42].

As a result, statistical analysis is required to assist businesses in determining the key elements affecting visitors' perceptions, particularly when developing marketing plans. According to Pike's [39] review of studies on destination images from 1973 to 2000, the most common data analysis techniques used to analyse the destination image are factor analysis [43; 44], t-testing [45], perceptual mapping [46], analysis of means [30; 37; 41], cluster analysis [44]. Recently, destination image study has also used canonical correlation analysis [38]. Previous studies mostly focused on the attitudes and perceptions of repeat visitors.

Customers and businesses may utilise information technology to their advantage in addressing decision-making challenges [48]. Expert systems and knowledge management fusion techniques have recently been introduced [49; 50; 51; 52]. Numerous databases must be accessible for testing and verification for knowledge management to function. Comparing various traditional data analysis methodologies also makes it evident that knowledge management produces the most beneficial analytical outcomes when used as a practical strategy. By carefully crafting and promoting a unique identity, destinations can showcase their exceptional offerings and create a lasting impression in the minds of travellers. A well-positioned destination can effectively communicate its key attributes, whether it be breath-taking natural landscapes, rich cultural heritage, thrilling adventure opportunities, or vibrant culinary experiences [19; 21]. This positioning helps align the destination with the desires and preferences of the target market, enabling it to establish a competitive edge. By leveraging branding, messaging, and authentic experiences, destinations can create an emotional

connection with potential travellers and inspire them to choose their location as the ultimate travel destination. Regular monitoring and adaptation ensure that the destination's image remains relevant and resonates with evolving consumer preferences, ultimately contributing to sustainable tourism development and the growth of the local economy [18; 20; 21; 53; 54].

## **2.2. Residents' Perceptions of Tourism Development**

Residents' impressions of and attitudes toward tourism can be influenced by social and economic variables including community connection, duration of stay in a place, and economic dependence on tourism [55; 56]. According to McCool and Martin [57], inhabitants who had a strong sense of community worried about the effects of tourism more than those who had a weaker sense of community. In a study of a resort village in Michigan, Stynes and Stewart [58] discovered that newer and more established people had quite different perspectives on the growth of tourism. The former supported further expansion, whilst the latter did not and expressed concerns about potential character changes brought on by such growth. On the other hand, twelve rural Colorado communities studied by Allen, Hafer, Long, and Perdue in 1993 [59] and the Mississippi National River and Recreation Area by Clements, Schultz and Lime in 1993 [60] found that people's length of residency had no substantial impact on their opinions regarding tourist growth.

The economic reliance on tourism and the accessibility of attractions may also affect how locals view their community. The acceptability of the industry by locals and their economic dependence on it is positively correlated in several studies [55; 59; 61; 62; 63; 64]. According to the findings of this research, residents who work in this sector are more inclined to promote tourism than those who do not. Contrarily, research has indicated that even when opinions toward tourism are generally good, the locals who live close to attractions may be more concerned about the effects of tourists than those who live further away [65; 66]. This means when residents have a positive perception of tourism, they become active participants and advocates, contributing to a welcoming atmosphere for visitors. They can serve as ambassadors, promoting the destination's unique attributes and sharing their local knowledge [65; 66]. This positive engagement enhances the overall visitor experience and fosters a sense of

community pride [67]. Moreover, residents who perceive tourism as a beneficial industry are more likely to support tourism-related initiatives, such as infrastructure development, preservation of cultural heritage, and the creation of tourism-related job opportunities. On the other hand, negative perceptions, such as concerns about overcrowding, loss of local identity, or inadequate infrastructure, can hinder tourism development.

The main independent variables included when analysing demographic aspects are gender, age, employment, level of education, income, and whether a person lives in an urban or rural area. The conclusions researchers have reached from their analyses of the influence of sociodemographic factors (as independent variables) on the resident's attitude toward tourism (as the dependent variable) are not conclusive; however, some studies [67; 68] have found significant correlations between the two variables, whereas others have found no such correlations. Jackson and Inbakaran [69] dared to provide a sociodemographic profile of the local who has the most positive perceptions about tourism. However, this profile does not reflect the findings of other research or the one put out by Iroegbu and Chen [70].

The length of time a resident has resided in the area (length of residence), the state of the local economy, the pattern of property ownership (home owned or rented), and the various geographic zones are among the social factors previously analysed [71; 72]. The first factor seems particularly significant and is the most frequently studied in this group.

There is disagreement among these researchers in determining a connection between the duration of residency and the resident's attitude toward tourist development, as was discovered in the case of the demographic factors. In contrast to those studies [53; 59; 60; 67; 73], others [58; 74; 75] do establish such a relationship, typically of the inverse type, concluding that the longer people have lived in their locality of residence, the less favourable their attitude toward tourism development [76; 77]. However, some studies show that persons who have recently moved in are less likely to engage in tourism [78], presumably because they believe that tourism might jeopardise the peace they wanted when choosing their new home [79].

Snaith and Haley [77] conclude that inhabitants who own their own house, the property in which they live, evaluate tourism development more adversely than those who live in a leased home. This is due to the pattern of property ownership.

The geographical characteristics associated with tourism are used to examine the effects on residents' attitudes connected to their level of "physical" contact or engagement with tourists. The physical distance between the resident's home locality and the main tourist areas has been measured in previous studies using two indicators [75; 80; 81; 82] and the concentration of tourists in a particular area has been measured using two indicators [68; 83].

In addition to all of these aspects or variables that are external to the resident (demographic, geographical, social, economic reliance, etc.), several writers have lately emphasised the necessity to take into account new internal factors that might influence the individual's attitude. As a result, Harrill [84] asks scholars to investigate how a community's mood or sense of solidarity affects its views toward tourist growth.

The type of tourist that visits the area and seasonality, with the negative effects that this latter factor can imply in terms of concentration of people, traffic congestion, rubbish, etc., are other new variables that are taken into account and incorporated in theoretical models put forth in recent studies, and that may also condition the attitudes and perceptions of the resident. In communities that are situated in developed tourist destinations, with a high tourist ratio, a focus on international tourism, and a high seasonality, negative attitudes are thus to be anticipated. On the other hand, positive attitudes are to be anticipated in destinations that are just beginning to develop as tourist destinations, with a lower tourist ratio, a predominance of domestic, or national, visitors, and low seasonality [79]. Therefore, it is crucial for destination managers and stakeholders to actively engage with residents, address their concerns, involve them in decision-making processes, and communicate the benefits of tourism. By considering residents' perceptions and involving them in tourism development, destinations can create a more sustainable and inclusive tourism industry that benefits both visitors and local communities.

### **2.2.1. Destination Image Positing in Mining Tourism and Residents' Perception of Mining Tourism Development**

Destination image positioning is equally important in mining tourism as in any other form of tourism. Mining tourism refers to visiting destinations that have a rich mining heritage or offer unique experiences related to mining

activities. To effectively position a destination for mining tourism, several key factors come into play [53; 55]. First and foremost, it is essential to showcase the historical significance and cultural heritage associated with mining in the destination. This can include preserving and promoting historic mining sites, museums, and artefacts that provide insight into the region's mining history. Secondly, highlighting the natural beauty and unique landscapes shaped by mining activities can be a captivating aspect for tourists [56]. Whether it is scenic open-pit mines, underground tunnels, or rehabilitated mining areas that have transformed into picturesque landscapes, emphasizing the aesthetic appeal can contribute to the destination's image [55]. Additionally, emphasizing the educational and experiential aspects of mining tourism can be appealing to visitors. Offering guided tours, hands-on activities, or the opportunity to interact with miners and understand their way of life can create a unique and immersive experience for tourists [54; 55]. Lastly, sustainable practices and responsible mining should be emphasized to ensure that mining tourism aligns with environmental and social considerations [57]. By strategically positioning the destination's image in mining tourism, it becomes possible to attract visitors who are interested in exploring and appreciating the historical, cultural, and natural aspects of mining, ultimately contributing to the local economy and preserving mining heritage for future generations [55; 56].

Residents' perception of tourism development in mining tourism holds significant weight in shaping the success and sustainability of such endeavours. In mining communities, the opinions and attitudes of local residents can greatly impact the outcomes of tourism initiatives. When residents perceive tourism development positively, they often embrace it as an opportunity for economic growth, job creation, and community revitalization [53]. They may appreciate the infusion of tourism-related investments and increased business opportunities that accompany mining tourism [54; 55]. Additionally, residents who perceive tourism development favourably tend to be more welcoming and hospitable to visitors, contributing to a positive overall experience. Their enthusiasm and support can translate into active participation in local events, sharing local knowledge and cultural heritage, and the preservation of mining-related sites and traditions [56]. Conversely, negative perceptions among residents can present challenges for tourism development in mining areas. Concerns over environmental impacts,

cultural preservation, increased traffic, or changes to the community's social fabric may arise. Addressing these concerns through effective communication, community engagement, and sustainable practices is essential [53; 54; 55; 56]. Engaging residents in the planning and decision-making processes, providing opportunities for dialogue, and ensuring that the benefits of tourism are shared within the community can help alleviate these concerns and foster a sense of ownership and pride. By actively considering and addressing residents' perceptions, mining tourism development can create a harmonious and mutually beneficial relationship between residents and visitors, leading to the long-term success and sustainability of the tourism industry in mining communities.

### **3. Mining, Tourism and Tourists: Cases around the world**

Along with mining tourism, subterranean tourism which is based on geological values is also frequently practised. Additionally, sacred tourism—also known as religious and pilgrimage tourism—holds a significant position. More adopted tourist forms include therapeutic, cultural sightseeing, entertainment, shopping, and even active rest, sometimes known as "3S - sun, sea, and sand," culinary, and many other tourism forms, some of which are even invisible to people who engage in them. A significant role for business tourism, namely one of its subsets known as congress and conference tourism, may be found in the mining industry. The appeal of gatherings may be improved by organising conferences underground.

Adventure tourism is a pretty common idea in literature; it has since been replaced by the more trendy word "active tourism." It is a form that calls for specific training, expertise, the use of specialist tools, and practical experience [85; 86]. Active tourism takes on a wide variety of forms in Western literature. The variety of tourist interests and the opportunity to actively occupy downtime contribute to the definition of tourism as a special interest or area of competence. Active tourism is said to be the earliest type of tourism, preceding sightseeing. The most significant of its numerous variations include lowland hiking and climbing, water (canoe, motorboat, sailing, and undersea), skiing, cycling, motor (including caravanning), hunting, fishing, horseback riding, and other, occasionally with odd-sounding names, and contemporary types of tourism. Here are a handful

of the numerous new active tourism options available today:

1. Geotourism
2. Industrial tourism
3. Mining tourism
4. Leisure tourism

Geotourism refers to a form of tourism that focuses on the natural and cultural heritage of a particular destination. It emphasizes the appreciation and conservation of the Earth's geology, landscapes, ecosystems, and the local communities that inhabit those areas. Geotourism encourages responsible travel that promotes sustainable development and aims to enhance the well-being of both visitors and residents [87; 88].

#### Key Features of Geotourism:

- **Geology and Landscapes:** Geotourism places a strong emphasis on the geological features, landforms, and scenic beauty of a region. This may include mountains, canyons, caves, waterfalls, coastlines, and other unique geological formations [88].
- **Conservation and Preservation:** Geotourism promotes the protection and preservation of natural and cultural resources. It encourages tourists to engage in activities that have minimal impact on the environment, such as following designated trails, respecting wildlife habitats, and supporting local conservation efforts [89].
- **Local Communities:** Geotourism aims to benefit local communities by involving them in tourism development and ensuring that they receive economic and social benefits from visitor activities. It often emphasizes authentic cultural experiences, traditional practices, and local products to foster community pride and economic sustainability [88; 89].
- **Education and Interpretation:** Geotourism seeks to educate visitors about the geological, ecological, and cultural significance of a destination. Interpretive programs, guided tours, signage, and visitor centres are commonly employed to provide information and create awareness about the area's natural heritage [87].
- **Sustainability and Responsible Travel:** Geotourism promotes sustainable tourism practices, which minimize negative impacts on the environment and support the long-term well-being of local communities. It encourages responsible behaviour, such as minimizing waste generation, conserving resources, and supporting local businesses that prioritize sustainability [87; 89].

#### Examples of Geotourism Destinations:

- **Geoparks:** Geoparks are designated areas that showcase outstanding geological heritage. They often offer educational programs, interpretive trails, and visitor centres to promote geotourism. Examples include Zhangjiajie Geopark in China and Copper Coast Geopark in Ireland.
- **National Parks:** Many national parks around the world incorporate geotourism as part of their conservation efforts. These parks protect diverse landscapes and geological features while providing opportunities for visitors to appreciate and learn about the natural environment. Examples include Yellowstone National Park in the United States and Torres del Paine National Park in Chile.
- **Cultural Heritage Sites:** Geotourism can also encompass cultural heritage sites that have geological significance. This could include ancient ruins, archaeological sites, or traditional communities with a strong connection to their natural surroundings. Examples include Machu Picchu in Peru and the Stonehenge World Heritage Site in the United Kingdom.

Overall, geotourism seeks to promote sustainable tourism practices, raise awareness about the Earth's natural and cultural heritage, and provide visitors with meaningful and enriching experiences while respecting the local environment and communities [87; 88; 89].

Industrial tourism is said to include mining tourism [8]. Rybár and Štrba [90] note that it is debatable whether mining tourism is a subset of industrial tourism because it frequently deviates from the definitions of industrial tourism put forth in the literature [91; 92; 93; 94]. Any type of tourist activity at industrial, technical, or industrial historical sites is referred to as mining tourism. These locations are usually intentionally crafted as tourist attractions. Industrial tourism is typically limited to the idea that defines tourist space or tourist destinations, rather than the characteristics of this sort of tourism.

As a result, the definition of industrial tourism provided above relates to the area surrounding tourist attractions. In several parts of the world, the mining and tourist industries are both expanding simultaneously. Following their last day of operation, several mines are closed. This presents a chance for the growth of mining tourism. Mining and tourism therefore clearly interact with one another. The knowledge of authorities and local governments in potential industrial and post-industrial regions has a significant impact on the quality of these alliances [95]. Mines possess

distinct characteristics that can evoke both attraction and repulsion. Here are some common criteria that can be considered attractive or repulsive when it comes to mines:

- **Attraction:**

- Economic Importance: Mines are often valued for their economic significance, as they contribute to job creation, local development, and national wealth.
- Natural Resources: Mines are a source of valuable natural resources, such as coal, minerals, gemstones, or metals, which are essential for various industries and manufacturing processes.
- Technological Marvels: Some mines are engineering marvels, showcasing impressive infrastructure, machinery, and mining techniques that can be fascinating to observe and learn about.
- Geological and Historical Significance: Mines may have geological formations or historical significance that can attract visitors interested in understanding the Earth's composition and human history.

- **Repulsion:**

- Environmental Impact: Mines can have adverse environmental effects, including deforestation, soil erosion, water pollution, habitat destruction, and disruption of ecosystems. These impacts can repel individuals concerned about environmental conservation.
- Health and Safety Concerns: Mining operations involve risks to the health and safety of workers and nearby communities. These risks, such as accidents, air pollution, or exposure to hazardous substances, can be repulsive to those prioritizing safety and well-being.
- Negative Aesthetic Value: Open-pit mines or large mining operations can alter the natural landscape, resulting in a visual impact that some people may find unattractive or disturbing.
- Social Disruption: Mines can lead to the displacement of local communities, changes in traditional livelihoods, and social conflicts,

which can create repulsion among affected populations.

It's important to note that the perception of mines can vary depending on individual perspectives, cultural context, and the specific characteristics of each mine. Table 1 discusses a few examples of mine tourism and its current status.

Several pieces of literature have also discussed mine tourism throughout history. Edwards and Coit [100] discussed the tourist potential of former mining regions in Wales and Spain and demonstrated how well-suited this location is to the development of an eco-museum. According to Saur-Pujol and Llurdés-Coit [101], mining tourism is a type of tourism that includes the renovation and development of abandoned mines to draw tourists and travellers interested in mining history. Rybár and Hvizdák [102] showed how mines use cutting-edge technology like virtual maps and three-dimensional visuals to draw visitors. To draw tourists to mines in Spain and Italy, mining parks have been built, including Riotinto Mining Park in Huelva, Almaden Mining Park in Ciudad Real, and Andorra-Sierra de Arcos. A further tactic for conserving mine history and boosting mining tourism is to convert abandoned mines into eco-museums [103; 104].

Mining tourism is an important component of integrated and sustainable regional development as well as tourism development. It intends to start new enterprises, boost entrepreneurship, generate employment for laid-off individuals, broaden the tax base, renovate existing buildings, improve infrastructure, and promote the town as a future innovation and entrepreneurship centre. It can keep young people from leaving by improving their comfort and offering social and cultural concerns to help them survive [105; 106]. Although the mining industry is frequently blamed for harming the environment that supports tourism, there are other possible outcomes from the interaction between tourists and mining industries. By giving visitors access to industrial and mining sites, the mining industry may take a proactive role in the tourist industry. Significant structural changes in the economy and society can result from mining tourism.



**Table 1. Instances of mine tourism in the world (Source: Authors)**

Mine	Location	Background	Mining tourism status
Cuyuna Iron Mining Range in Central Minnesota, USA	Close to Vermillion and Mesabi and is located in the southwest corner of the iron ore range.	During the two world wars, it was one of the most significant hubs for the delivery of steel. However, the region's mining infrastructure started to erode following a precipitous collapse in the late 1960s. In addition to post-mining infrastructure, the region has lakes. The abandoned institutions' cultural and industrial history slowly started to return to life.	In recent years, there have been efforts to promote tourism and economic development in the Cuyuna Range region, capitalizing on its natural resources, historical significance, and recreational opportunities. The area continues to attract visitors interested in exploring its mining heritage and enjoying the outdoor activities it offers [96].
Kuranda	Close to Cairns	The Atherton Tablelands region, where Kuranda is located, has a history of mining. In the late 19th and early 20th centuries, the region saw some mining activity, particularly in areas like Herberton and Irvinebank, which are not far from Kuranda. Herberton, in particular, was once a significant mining town and home to the rich Herberton Tin Field. Numerous tin mines operated in the area, contributing to the growth and development of the town. Today, the Herberton Historic Village showcases the town's mining history and offers insights into the region's past.	Local communities require ongoing assistance in promoting and developing tourism attractions that draw inspiration from the history of mining. All of this will support the growth of regional tourist businesses [97].
Geopark Naturtejo Meseta	The central part of Portugal	A component of the Global Geoparks Network run by UNESCO. The geopark is also known for its cultural heritage and traditional rural communities. It encompasses several historic towns and villages, including Monsanto, Idanha-a-Velha, and Castelo Branco. These settlements showcase traditional architecture, local customs, and historical sites that provide a glimpse into the region's past. In addition to its natural and cultural attractions, the geopark promotes sustainable development and environmental conservation. It encourages responsible tourism practices and works closely with local communities to preserve their traditional ways of life and protect the geopark's natural resources.	It has a lot of promise for geo-tourists [98].
Mozambique	South-eastern Africa	The mining sector in Mozambique plays a vital role in the country's economy, contributing to employment, export revenues, and infrastructure development [9]. The Mozambican government has been working to attract investment in the mining sector, improve regulatory frameworks, and promote sustainable and responsible mining practices. However, the industries do not always have a good connection with one another, though. Many other, non-mining related businesses, like tourism, have been negatively impacted by Australia's recent mining boom [99].	Offers unique opportunities for mining tourism due to its rich mineral resources and historical mining sites. Some mining companies or local operators offer guided tours and workshops that provide an immersive experience in the mining industry. These tours can include visits to operating mines, demonstrations of mining techniques, and workshops where visitors can try their hand at panning for gold or gemstone cutting.

In Europe, where former mining regions are transformed into new tourist attractions, revitalization and transformation of historic mines into cultural tourism and museum centres enjoy significant support. The former coal mine in Labin in Istra, Croatia, which has been converted into a cultural centre, with the already-created project of decorating the "underground city" on 60,000 square metres of space in corridors and abandoned

mining areas, is an even better example than the mine of "Idrija" in Slovenia, a former mercury mine [107].

Another excellent example is the Wieliczka Salt Mine in Kraków, Poland, which is the most peculiar salt mine in the world. On the surface, the location is unremarkable, but 200 metres beneath the ground, it conceals a stunning secret. With a church and an underground lake, the salt mine has

evolved into an exceptional art gallery. This magnificent salt mine attracts more than a million people each year. Less than 1% of the mine is accessible to tourists because of security concerns, but the almost 4-kilometre-long passageways are more than long enough for visitors to spend an hour or two seeing these incredible chambers [107].

Another noteworthy example is the copper mine in Bor, Serbia. While on the surface, visitors can view the oldest open pit mine, with the old open pit being about 500 metres deep; a safari trail on the old flotation tailing dump with a length of 17 km and width of 10 metres is also available. There, at the eleventh underground mining horizon, a large space was built, with the capacity for up to 60 people, where tourists are enabled to descend to a depth of 700 metres every 15 days, to take photos or speak with the miners [107].

The findings of Vargas-Sánchez et al. [90]'s study on mining tourism in the Minas de Riotinto (Spain) showed that the locals had a favourable view of the expansion of the industry and considered that it would offer more benefits to the municipality than drawbacks, such as job chances. According to Conesa [108], the mining tourist industry has opened up new business prospects in the Cartagena—La Unión Mining District (Spain). Additionally, Conesa [108] asserted that tourism served as a substitute for conventional mining sites in the La Unión Mining District (Spain).

According to Rózycki and Dryglas [7], mining tourism educates visitors about the geology and structure of the ground and aims to help them comprehend the challenging and specialised job of miners. Mining tourism seeks to change the negative perception of the mining region into a good one, according to Gürer, Gürer and Sangu, [105], who highlighted the Soma region of Turkey as a prime location for the industry. They further said that mining tourism illustrates the significance of mining activities and their challenges.

The case study of Balibe Hill, Bonder Village, Central Lombok, Indonesia, by Agustriani et al. [106], demonstrated how converting unused surface-mined lands to tourism activities can generate income for the local community and possibly have a distinct identity for visitors. The information for this research was gathered from the community's way of life in the study location.

Mine reclamation serves various purposes beyond tourism. Mine reclamation is a critical need in the mining industry to address the environmental and social impacts of mining activities. While tourism is one potential land use option after mine reclamation, there are other important objectives

and benefits associated with the reclamation process. Reclamation plans should be tailored to the specific characteristics of the mine site and consider the local environmental and social context. Table 2 discusses the various other reclamation strategies adopted in the world apart from mine tourism.

Mining tourism has grown in popularity in recent years as a way to revitalise closed mines, foster local community growth, and protect mine history. Nations are working to have UNESCO recognize mine history as a world heritage site and create visitor mine trails and historic routes. Examples include the Wieliczka Salt Mine, Mercury in Almadén, and Idrija. Mining tourism is a way to revitalise closed mines, foster local community growth, and protect mine history.

### 3.1. Mining tourism in the Indian context

Travel and tourism alone accounted for 9.2% of India's GDP in 2018, making it the eighth-largest travel and tourism industry in the world [115]. Tourism is a significant source of national revenue generated in India. The natural, cultural, religious, and architectural features of the nation are highlighted by a well-organized tourist sector in this nation [116]. In recent years, the concept of geo-tourism in India has grown based on geographical heritages from various habitats, including the Himalayan area, the western desert, the coastal region, and peninsular India [117]. The Geological Survey of India (GSI) has been designated across the nation as National Geological Monuments to preserve, maintain, and promote tourism ([www.gsi.gov.in](http://www.gsi.gov.in)). In 2016, the United Nations recognised non-governmental organisation Indian National Trust for Art and Cultural Heritage (INTACH) made a further contribution by providing in-depth descriptions of the geo-sites recognised by GSI. On the other hand, mining tourism was only recently put into practice when Saoner and Gondgaon mines in the state of Maharashtra, close to Nagpur, were opened for tourists as a joint project of Maharashtra Tourism Development Corporation and Western Coalfields Limited in 2016 and welcomed over 145 thousand visitors by 2018 [118; 119]. By implementing sustainable mining closure techniques, more than twenty coal mines are currently utilised as eco-parks and mining museums around the nation. It demonstrates the extensive work put into promoting eco-mining tourism in coal mines [120]. However, as noted by Rózycki and Dryglas [7], there is a variety of different tourism.

**Table 2. Examples of reclamation strategies worldwide (Source: Authors)**

Examples Of Reclamation Strategies			
Land Use/Strategy Type	Location	Description	Reference
Agricultural	Liuxin, Eastern China	Long-term additions of organic amendments and mixed sowing of different herbage have significant effects on microbial communities and facilitate the improvement of bacterial community diversity in reclaimed soils. Overall, this work provides valuable insight into the response of terrestrial ecosystems to soil reclamation of abandoned mine land and demonstrates the considerable potential of pyrosequencing in characterizing soil microbial communities.	[109]
	Gnieznienskie Lake District, Konin, Poland	Growth of Lucerne crops on the dumping ground of the Konin mine Lubstów open-pit indicated that spontaneous succession, with the highest typological diversity of vegetation, contributed to the most preferred soil physical state. The remaining variants of reclamation (including black fallow without vegetation) also provided sufficient air and water relations in the soils. Therefore rehabilitation of post-mining grounds involving vegetation is recommended.	[110]
	North Bandai Hills, Ghana, West Africa; Mbaya Region, Tanzania, West Africa; Anji, China; Kotwa And Rahimabad In Allahabad, Uttar Pradesh, India	Bamboo has successfully been used to restore degraded land through forest conservation, reclaiming mined-out land for riparian re-vegetation	
Forestry	Singareni, Tamil Nadu, India	Green Cover on reclaimed OB dump of Green Cover on reclaimed OB dump	
	Wise County, Virginia, USA	white pine forestry has been carried out in the abandoned mine land and studies have shown that thinning and pruning are viable options and good investments, provided that the tree stand has adequate mine soil resources for rapid growth.	[111]
	Nandini, Durg District, Chhattisgarh, India	Chhattisgarh is on its way to accomplishing an action plan to develop the nation's largest man-made forest on a vast area, mostly the abandoned and non-functional mining belt. The plan at Nandini is also to develop the site as eco-ethnic tourism, which will include landscaping, promotion of water sports, and cottages for stay.	
Hydrology	Gnieznienskie Lake District, Konin, Poland	The former one constructed three medium-sized reservoirs: Bogdałów, Przykona and Janiszew which serve the inhabitants as recreational sites in hot summers.	[110]
	Collie Pit Lake Distriaustraliaialia	The recreational activities amongst others include skiing, boating, swimming, wading, picnicking, camping, walking, fishing and marooning. The existing rocks were used to create sculptures, terraces and water streams.	[112]
	Gondegaon, Maharashtra, India	Mine water is treated to Drinking water at Gunjan Park of ECL – An OC mine turned into a beautiful Eco-Park with a water body	
Wildlife Habitat And Nature Conservation	Mudwani Dam, Singrauli, Madhya Pradesh, India		
	Powder River Basin Coal Mines, Montana, USA	Then the topsoil is added, along with natural grasses, shrubs, and rock piles. These rock piles create a natural habitat for animals and encourage them to return to the area. Today, large herds of deer and antelope live on all Powder River Basin Coal Mines, and a flourishing and growing herd of elk called the Rochelle Hills herd has started to spend winters on the productive reclaimed coal mining land in the area. Many other types of birds and small mammals, such as foxes, owls, eagles, rabbits, and even muskrats, can be observed daily at Wyoming coal mines.	[113]
Recreational	Above-Mentioned	The above-mentioned external dumping site of the Belchatów mine, called Góra Kamieński, became a sports and recreational centre. On the northern slope of the dumping site, there is a ski run with modern skiing facilities, hotels and food outlets, which is popular with winter sports fans. The plan also includes such attractions as a race track, an in-door ski run, a golf course, cycle paths, a technological park with excavators and dumping machines, a small motor and sailing boat harbour and the two of biggest lakes in central Poland	[110]
	Seri Kembangan, Selangor, Malaysia	world's largest open cast tin mine now developed in a luxury healthcare-oriented hotel; International School; shopping mall; Golf Club; Convention Centre; theme park	[112]
	Salina Turda, Romania	This salt mine marked a maiden experiment of turning a disused mine into a tourist spot in 1992. Tourists have to descend 120 metres underground in the heart of Transylvania, to reach the mine. At the bottom is a theme park with a miniature golf course, Ferris wheel, bowling alley and a boating lake. It also houses a spa and wellness centre owing to the availability of naturally occurring salts and high humidity	

Examples Of Reclamation Strategies			
Land Use/Strategy Type	Location	Description	Reference
	Saoner, Maharashtra, India	An Eco-Park has also been created where tourists can enjoy nature and also learn about the mining environment before entering the real mines. Eco-Park has several science models such as Fountain, Swings, Ocean Pool, etc. made using mined scrap material. It boasts of a pristine landscape preserving most of the natural forest in its original shape. The Park has Adventure Rides, Open Gym, Ball Pit, Artificial Mine Tunnel, Toy Train and several demonstrable technologies like Vermi Composting, Rain Water Harvesting, and Solar Pumps & Drip Irrigation.	
	Songjiang, Shanghai, China	At the top of the quarry, a grass roof helps the scheme to adopt a low profile, with only two levels emerging above the cliff top. At the base, the two lowest levels are sunk underwater, containing guestrooms, restaurants, and an aquarium, while a conference/ballroom centre and swimming pools comprise the bottom surface level.	
Educational			
Solid Waste Landfilling Siting	Gnieznienskie Lake District, Konin, Poland	They have constructed industrial and municipal waste dumping sites. Internal dumping sites (e.g. in the Bełchatów, Konin and Turów mines) are sometimes used to store ashes from power stations and as a result, they are rendered harmless there.	[110]
Industrial			
Storage			
	Walhalla, Australia	Museum, housed in the old tunnels of a gold mine now abandoned. Tours embark from the hill leading down into the mine. Visitors will be taken down the long tunnel, which leads to many shafts. There is a wide range of old mining equipment within the mine.	[114]
	Wieliczka Salt Mine, Poland:	Also known as 'Poland's Underground Salt Cathedral', the mine offers a tour through 22 chambers, including chapels, statues and chandeliers carved out of rock salt by miners over centuries.	
	Khewra Salt Mine, Pakistan	This mine is the second largest salt mine in the world the discovery of which dates back to the 4th century. This is also the only source of pinkish 'Himalayan salt', a fetish among food enthusiasts. With several constructions made out of colourfully illuminated salt bricks, the mine has emerged as a major tourist attraction in the country.	
Cultural			
	Springhill Miners' Museum, Canada	The museum displays unique artefacts from history and industrial heritage.	
	Dolaucothi Gold Mines, Wales	The Dolaucothi Gold Mines provide a unique insight into the 2000-year-old Roman gold mining methods. The guided tours in this tourist site will take you through mine-yards dating back to the 1930s.	
	Genk, Belgium	An urban square with a cultural, creative, design and recreational function. Most of the buildings around the square are former mining buildings, renovated and transformed into buildings with a cultural program; a large theatre, a cinema, restaurants and a design academy	

Mine tourism in the Indian context refers to the practice of visiting and exploring mines as a recreational and educational activity. India is a country rich in mineral resources, and mine tourism allows visitors to witness the mining operations, learn about the geology and history of the mines, and understand the significance of mining in the country's economy. Here are some key points regarding mine tourism in India:

- **Types of Mines:** India has a wide variety of mines, including coal mines, limestone mines, iron ore mines, diamond mines, and more. Each type of mine offers a unique experience for tourists.
- **Educational Experience:** Mine tourism provides an opportunity for visitors to learn about the mining process, techniques, and equipment used.

It also highlights the challenges and environmental concerns associated with mining.

- **Geology and History:** Many mines in India have a rich geological and historical significance. Visitors can explore the unique rock formations, understand the geological processes that formed the minerals, and learn about the historical context of mining in the region.
- **Safety Measures:** Mine tourism operators prioritize visitor safety and provide necessary safety equipment and guidelines. Visitors are often accompanied by trained guides who explain the safety protocols and ensure a secure experience.
- **Sustainable Mining Practices:** With increasing awareness about sustainable development, some mine tourism initiatives in India focus on showcasing environmentally responsible mining

practices. These initiatives highlight efforts to minimize the ecological impact of mining and restore mined areas.

- **Locations:** Several regions in India offer mine tourism opportunities. For example, Jharkhand, Chhattisgarh, and Odisha are known for coal mines, while the states of Rajasthan and Madhya Pradesh have notable limestone and marble mines. The Panna Diamond Mines in Madhya Pradesh are also popular among tourists.
- **Cultural Interactions:** Mine tourism often provides an opportunity to interact with local communities, especially in tribal regions where mining is a significant part of their livelihood. Visitors can learn about the cultural heritage, traditions, and lifestyles of the people associated with mining.

Mining tourism is emerging as a significant tourism speciality since the utilisation of mining areas as tourist attractions is popular in many nations. In India, the mining sector is a significant source of employment, money, and foreign

exchange profits. Since the 1980s, tourism has also been given major consideration [121; 122]. However, except for a few specific instances, mining tourism is mostly unexplored in India. For instance, the Western Coalfields Limited, a subsidiary of Coal India Limited, a Government of India business, and the Maharashtra Tourism Development Corporation (MTDC) together took the initiative to establish mining tourism in the Saoner and Gondegaon coal mines of Nagpur district in Maharashtra [110]. Table 3 discusses the 4 major closed mine interventions for mine reclamation having tourism potential amongst numerous mines in India. It is important to note that mine tourism involves inherent risks, and visitors should strictly follow safety guidelines and regulations. Additionally, the availability of mine tourism options and specific regulations may vary over time, so it is advisable to check with local authorities or tourism agencies for up-to-date information before planning a visit.

**Table 3. Indian Mines Scenario (Source: Authors)**

Indian Mines	Mine Types	Status	Intervention	References
Chinakuri Mine	Coal Mine	Closed 2008	Identified as a tourism potential site	[123]
Narankuri Coal Mines Ruins	Coal Mine	Closed	Environment restoration and man-made tourism site	[123; 124; 125]
Piparwar opencast mine	Coal Mine	Closed 2020	Planned for eco-park	[126; 127]
Mahabir Collieries	Coal Mine	Closed 1989	Dark tourism	[123; 126; 127]

Mine reclamation through tourism in India is a growing trend aimed at restoring abandoned or depleted mining sites while simultaneously attracting tourists. However, the trend followed in India is slow mine reclamation. Slow mine reclamation through tourism in India refers to the gradual process of reclaiming and restoring abandoned or degraded mining sites while integrating them into tourism activities. It acknowledges that mine reclamation is a time-consuming endeavour that requires careful planning and execution. Instead of rushing the reclamation process, slow mine reclamation emphasizes the importance of thorough restoration efforts, ensuring the long-term ecological sustainability of the site. These initiatives focus on rehabilitating the mined areas, restoring the ecological balance, and creating sustainable tourism opportunities. By converting former mining sites into tourist attractions, visitors can witness the transformation first-hand and learn about the importance of environmental conservation. This approach not only helps in restoring the natural habitat and improving

biodiversity but also provides economic opportunities for local communities through tourism-related activities. This approach encourages patience, allowing nature to heal at its own pace while creating unique tourism experiences that showcase the beauty of reclaimed landscapes in India. Through mine reclamation, India is demonstrating its commitment to responsible mining practices and showcasing the potential for sustainable development in mining regions gradually.

#### 4. Mining tourism challenges

Tourism and mining are recognised as essential industries for employment generation and poverty reduction on a global scale [55; 128]. Information on which industry (or set of sectors) may be more sustainable for employment and local social development within communities is scarce, despite the availability of employment contribution numbers from both the mining and tourist sectors [129; 130; 131; 132]. While some observers particularly mention mining as driving job development [133], others specifically mention

tourism as fostering a thriving job market [134; 135; 136]. Tourism generates 231 million employment worldwide, or 8.3% of all occupations [128]. In South Africa, the former tourism minister Marthinus van Schalkwyk admitted that the burgeoning tourist business provides much more employment than mining, even though Myburg [133] cites the mining sector as having the potential to create hundreds of thousands of additional jobs [136]. Nomvula Mokonyane, the premier of Gauteng Province, also emphasised the significance of tourism as a big provider of employment in South Africa, saying that it is the "new gold" due to the labour-intensive nature of the business [137]. It is obvious that in South Africa and across the world, the tourist industry employs more people than mining. While it can offer unique experiences and insights into the mining industry, there are several challenges associated with mining tourism that can impact its development and sustainability. Here are some key challenges associated with mining tourism:

- **Safety Concerns:** Mines can be hazardous environments due to factors such as unstable structures, poor air quality, and potential exposure to toxic substances. Ensuring the safety of tourists is crucial, and proper safety measures must be in place, including appropriate training, protective gear, and regular maintenance of the mine infrastructure [138].
- **Access and Infrastructure:** Many mines are located in remote areas, which can pose challenges for visitors in terms of transportation and accessibility. Developing the necessary infrastructure, such as roads and visitor facilities, can be expensive and logistically challenging, especially in rugged or environmentally sensitive areas [139].
- **Environmental Impact:** Mining activities can have a significant impact on the surrounding environment, including land degradation, water pollution, and disruption of ecosystems. Opening mines for tourism purposes should consider the potential environmental consequences and implement measures to minimize the impact, such as reclamation efforts and sustainable practices [140; 141].
- **Historical Preservation:** Some mines have historical significance, and preserving their cultural and historical value is important. However, the influx of tourists can cause wear and tear on fragile structures and artefacts. Balancing the preservation of historical sites with visitor access requires careful management and conservation strategies [55; 57; 135].

- **Economic Sustainability:** Developing and maintaining mining tourism sites require significant investment in infrastructure, maintenance, and marketing. It can be challenging to generate sufficient revenue from visitor fees and other sources to cover the costs and ensure long-term economic sustainability [142].
- **Community Engagement:** Engaging and collaborating with local communities is crucial for the success of mining tourism. The presence of tourists can impact the local community in various ways, including increased demands on resources, changes in the local economy, and potential social and cultural impacts. Involving local communities in the planning and decision-making processes can help address concerns and ensure that benefits are shared equitably [139].
- **Educational and Interpretive Programs:** Mining tourism can offer educational opportunities to visitors by providing insights into the mining industry and its historical significance. However, developing informative and engaging interpretive programs can be challenging. It requires a combination of knowledgeable guides, interactive exhibits, and engaging storytelling techniques to effectively communicate the complexities of mining operations and their impact on society [142].

Addressing these challenges requires collaboration among various stakeholders, including mining companies, local communities, tourism organizations, and regulatory bodies. Mining and tourism face specific constraints when combined with mining tourism. Other such constraints include:

- Tourism benefits also depend on how supply chains are organised, how tourists spend their money [139], and how strategies for local empowerment are set up [138], even though tourism has the potential to generate more employment than mining [128].
- Mining may not result in long-term job growth and may also have possible effects on tourist destinations and related employment owing to environmental deterioration and loss of aesthetic appeal [139; 143].
- Less developed locations run the danger of invalidating existing ideas of tourist growth.
- Protected zones don't create employment in the tourism industry.
- Resource extraction and tourism are closely connected in terms of labour-market dynamics, despite tensions at the discursive level.

- Due to the regional dispersion of mining and tourist capabilities and the interactions between them, mining tourism has undergone a corresponding diversification.
- Resource-extractive infrastructure in general determines where tourist attractions are located.
- Resource extraction operations unwittingly create access to tourist "wilderness" by creating tourism hotspots [143].

The literature on small-town development, according to Atkinson [144], emphasises differences between those who think that local initiatives may provide sustainable growth and development and others who think that outside influences (such as mining) dictate whether or not a small town will flourish. There isn't a tried-and-true recipe for achieving financial success, though.

South African vacation towns are doing well due to the infusion of fresh money and spending power, while mining towns are either experiencing a boom or are sharply decreasing. There are prospects for job growth in the tourist and mining industries, but there are also difficulties. First, mining might harm jobs in the tourism industry [139], as it has the potential to replace tourist accommodations and other tourism industries. Concerns about tourism's inability to attract and retain skilled staff due to the demand for mining workers, mining infrastructure reducing a region's appeal to tourists, tourism businesses moving to other areas to find cheaper labour or ceasing to exist due to mining competition, are other negative effects of mining on tourism in Australia [130].

Similarly to this, Pache [129] observes that proposed mining in Michigan's Upper Peninsula has sparked a large amount of opposition from the local population since mining threatens the tourist economy, which depends on regions of natural beauty. The city of Munising receives a \$20 million contribution from tourism, especially ecotourism. The idea that the mines would provide more employment than tourism does not hold much appeal to the local population. The tourism sector thus needs access to well-maintained surroundings and services, such as clean water, to attract growing numbers of tourists, keep jobs, and remain successful (United Nations, 2013). Unfortunately, mining development's dismal track record has demonstrated its tendency to endanger and degrade tourism ecosystems, which will have a detrimental influence on jobs in the industry [139]. For instance, the groundwater in Johannesburg's mining sector is severely polluted, acidified, and leaking into streams. Groundwater aquifers have

been affected and sensitive environmental regions have become contaminated as a result of mining pollution. In Randfontein, where acid mine drainage is running northward towards the Krugersdorp game reserve and the Cradle of Humanity world heritage tourist site, impacts have been seen [140].

The mining business is a short-term employment creator and can experience quick job loss [139], while the tourist sector is labour-intensive and long-term yet offers lower-paid jobs [91]. Tourism is more likely to cause economic divergence [141], but its ability to alleviate poverty and create jobs depends on whether it offers opportunities for employment, integrates the underprivileged, fosters connections, and promotes the expansion of essential services. The seasonality of the tourist sector and the transient nature of many professions are also factors that contribute to concerns regarding employment patterns [142]. Despite these difficulties, the tourist sector has the capacity to forge solid and varied connections, as shown in countries like India, Brazil, and Indonesia where tourism has sparked widespread economic activity [127]. The United Nations (2013) states that tourism has the potential to include a significant number of local businesses in the value chain, such as artisans and tour guides. There is an opportunity for indigenous-owned and run small businesses targeted at the expanding ecotourism industry, which would benefit owner-operators, employees, and the larger community [145]. However, New Zealand's tourist industry is most at risk from permitting mining to intrude into protected territory, as it would not amount to a net economic benefit unless it could make up for unreimbursed losses in terms of existence, bequest, and recreational values, including possible future tourism earnings [146].

Evidence of collaboration between the mining and tourist industries to create jobs is scarce. For the mining industry and indigenous tourist development in Weipa, Australia [89], 60% of mining activities are situated adjacent to Aboriginal land and near pristine natural regions. Indigenous people and mining firms have always had terrible working relationships, with conflict and corporate malfeasance still being reported in the early 2000s. Conesa [108] claims that despite conflicts with tourism from active mining sites, some regions of the world have been more successful in converting abandoned mining sites into "culture" tourist destinations as part of a consumptive vision of the past (i.e. mining heritage tourism). However, one of the numerous issues

with this type of history tourism is the deterioration of the ecosystem due to mining activities. As a result, there may be differences in the development frameworks for mining and tourism.

**5. Mine closure – sustainable environment and economy**

Mine closure is a critical phase in the lifecycle of a mine, and it presents an opportunity to ensure the long-term sustainability of both the environment and the local economy [53; 55]. Proper planning and implementation of mine closure strategies are essential to minimize the environmental impact and support the transition to alternative economic activities [57]. Closed mine tourism offers unique opportunities to promote both a sustainable environment and economy in former mining areas.

The use of ethical behaviours that benefit both people and the environment is becoming more and more important in the development of responsible mining operations. Even after a mine has shut down [53]. The mining company's experience has historically been used to conceptualise and achieve results during the closure phase [57]. Communities and governments also play a significant part in ensuring good closure results in contemporary practice. To identify closure outcomes that will be advantageous to both the corporation and its host communities, integrated closure planning and execution must take into account the opinions, worries, ambitions, efforts, and knowledge of both internal and external stakeholders [147]. Here's how mine closure and closed or abandoned mine tourism contribute to a sustainable environment and economy (Table 4):

**Table 4. Mine closure and closed or abandoned mine tourism contribution to a sustainable environment and economy comparison (Source: Authors)**

Mine closure	Closed or abandoned mine tourism
<p>1. Environmental Rehabilitation: Mine closure involves comprehensive environmental rehabilitation measures to restore the land, water bodies, and ecosystems affected by mining activities. This includes reclamation and revegetation of disturbed areas, water management and treatment, and remediation of any environmental contamination. It contributes to the preservation and enhancement of the local environment [55; 57; 58].</p>	<p>1. Environmental Conservation: Closed mine tourism can raise awareness of environmental conservation and the need to protect natural resources in mining regions. It provides an opportunity to showcase successful mine rehabilitation and restoration efforts, highlighting the importance of sustainable land management practices. Through educational initiatives and interpretive programs, tourists can learn about the ecological value of the area, the measures taken for reclamation, and the ongoing conservation efforts. This increased awareness fosters a sense of responsibility towards the environment and promotes sustainable practices [147].</p>
<p>2. Sustainable Land Use: Mine closure provides an opportunity to repurpose the land for sustainable land use activities, such as agriculture, forestry, renewable energy projects, or conservation areas. This can create new economic opportunities and contribute to the local economy while minimizing environmental degradation [52; 53].</p>	<p>2. Preservation of Cultural Heritage: Closed mine tourism involves the preservation and interpretation of mining-related cultural heritage, such as historic mining sites, machinery, artefacts, and buildings. This helps to maintain the identity and traditions of mining communities, promoting pride and heritage preservation. It also allows visitors to gain insight into the mining history and lives of past miners.</p>
<p>3. Economic Diversification: Mine closure requires a transition from a mining-dependent economy to a more diversified and sustainable economic base. This can involve supporting alternative industries, fostering entrepreneurship, and attracting investments in other sectors. Economic diversification reduces the community's reliance on mining and creates a more resilient and balanced local economy [53; 54].</p>	<p>3. Economic Revitalization: Closed mine tourism provides economic opportunities for local communities by leveraging the unique mining heritage of the area. It creates jobs and stimulates the local economy, and encourages the growth of ancillary businesses such as local handicrafts, restaurants, and accommodations. The revenue generated from closed mine tourism can support community development initiatives, infrastructure improvements, and the preservation of cultural and natural assets.</p>
<p>4. Job Creation and Skills Development: Mine closure should include strategies to address the potential loss of employment opportunities, such as retraining and reskilling mine workers, and developing sustainable industries and entrepreneurship. This will ensure the long-term socioeconomic well-being of the community [55].</p>	<p>4. Community Empowerment and Development: Closed mine tourism involves the active engagement and participation of local communities. Through community-based tourism initiatives, residents can take ownership of the activities, become guides or storytellers, and share their connections to the mining heritage. This involvement fosters pride, empowerment, and economic benefits for the local community, as well as opportunities for entrepreneurship and skills development.</p>



Mine closure	Closed or abandoned mine tourism
5. Community Engagement and Social Well-being: Effective mine closure requires active engagement with local communities, indigenous groups, and stakeholders to address community concerns and ensure their well-being. This can include supporting community development initiatives, promoting social infrastructure, and maintaining ongoing dialogue to foster ownership and social cohesion [54].	5. Environmental Stewardship and Sustainability: Closed mine tourism can promote sustainable practices and responsible tourism by incorporating environmental guidelines and sustainable tourism practices such as waste management, energy efficiency, and conservation measures. This commitment to sustainability demonstrates the importance of preserving the environment while offering an enjoyable visitor experience.
6. Post-Closure Monitoring and Management: Monitoring and management are essential post-mine closure to ensure environmental rehabilitation measures are successful and the transition to a sustainable economy is maintained. Engagement with stakeholders and adaptive management practices contribute to long-term sustainability of the environment and local economy [51; 52; 57].	

When developing a mine and during the asset's life, integrated mine closure takes into account environmental, social, and economic considerations in a dynamic and iterative process. Early consideration of mine closure can increase the likelihood of relinquishment and make ultimate closure objectives easier and more affordable to execute [54]. Consideration of closure as an essential component of the mining operations' primary business is essential to this process [147]. By embracing sustainable environmental practices and supporting economic diversification, mine closure can leave a positive legacy for future generations. It promotes the restoration of ecosystems, creates new economic opportunities, and fosters resilient and thriving communities beyond the mining phase, leading to a sustainable environment and economy [55]. By combining environmental conservation, cultural heritage preservation, economic revitalization, and community empowerment, closed mine tourism contributes to a sustainable environment and economy. It promotes the long-term preservation of natural resources, fosters community development, and ensures that the economic benefits of tourism are shared among residents. Additionally, closed mine tourism acts as a catalyst for education, cultural appreciation, and the preservation of mining heritage, creating a sustainable legacy for future generations [57].

Planning for closure is ongoing since new information is continually being acquired and updated. Usually, the early progressive closure activities offer lessons that may be used for later progressive closure actions (during operations) and ultimate closure. It might be difficult to comprehend and prepare for post-closure land usage [52]. However, closure planning is made much easier with a precise specification of the anticipated post-closure land use [53; 55; 57]. The creation of the closure vision and site-specific closure objectives, as well as the choice of closure

actions and the establishment of success criteria, are all aided by an understanding of the post-closure land use [147].

## 6. Conclusions

India's destination image positioning reflects its rich cultural heritage, diverse landscapes, and unique experiences. While India is known for iconic attractions like the Taj Mahal and spiritual destinations like Varanasi, it offers a wide range of destinations catering to different travel preferences. The country's cultural heritage, wildlife, adventure activities, and wellness traditions contribute to its distinctive image positioning. In comparison to the world, India stands out as a culturally vibrant and spiritually enriching destination. Its ancient temples, palaces, and UNESCO World Heritage sites add to its allure. India's diversity and authenticity create a distinct destination image, appealing to travellers seeking immersive experiences. However, when it comes to mining tourism, India's development in this area is relatively limited compared to certain regions in the world. Countries like Australia, Canada, South Africa, and Chile have well-established mining tourism industries. These destinations offer comprehensive tours, underground experiences, interactive exhibits, and educational programs, giving visitors a deeper understanding of the mining industry and its impact on local economies. While India has made efforts to promote mining tourism at specific locations, it still has a long way to go in terms of infrastructure, safety regulations, and visitor facilities to compete with established mining tourism destinations worldwide. Environmental concerns and the need for sustainable practices further present challenges that require careful management. To enhance India's mining tourism potential, there is a need for greater investment, a collaboration between the mining industry and tourism authorities, and the development of comprehensive visitor experiences

that strike a balance between showcasing mining operations and preserving the natural environment. In conclusion, India's destination image positioning is unique due to its rich cultural heritage, diverse landscapes, and spiritual offerings. However, when compared to the world, India's mining tourism sector is still in its nascent stage, with limited destinations actively promoting it. Efforts to develop mining tourism in India should focus on sustainable practices, infrastructure development, and creating immersive experiences that provide insights into the mining industry's history, processes, and socio-economic impacts.

The data mentioned above suggests the importance of integrating tourism promotion within the larger framework of marketing communications. Decision-makers should evaluate the effects of their promotional actions on revenues, market share, expenses, and benefits. They should also make sure that their integrated marketing communication strategy takes covertly induced agents into account and makes an effort to capitalise on temporal environmental and situational influences as well as vicarious place experiences. Future studies should focus on direct cause-and-effect evaluations of tourist promotions as a component of integrated marketing communication initiatives that aim to change pre-visit destination perceptions of particular instance destinations. The need to capitalise on the close relationships between local people and the mines was what most clearly illustrated holistic approaches to tourism development. For effective, context-rich, "holistic" interpretation, communities' participation, support, and endorsement of mining tourism initiatives are required. The most important details in this text are that involving residents in decision-making helps accomplish sustainable development, and that communities must be involved in creating their own sense of identity and enhancing the veracity and authenticity of mining history. Environmentally speaking, more comprehensive planning strategies were advised to connect mining tourist destinations throughout the natural landscape to form legacy pathways. Cooperation at the national and worldwide levels is advised to find effective examples of sustainable tourism best practices in this challenging market. Tourism must always be integrated into comprehensive, all-encompassing programmes for redevelopment, including the provision of training and financial assistance to the local community for former mining localities, located in typically peripheral

areas with limited economic bases and a little history of entrepreneurship. This would increase a community's ability to take advantage of economic opportunities.

However, a more in-depth study is needed to investigate the opinions of former miners, museum employees, mining enthusiasts, visitors, planners, and sponsors. Further research in the mining tourism sector for destination imaging and stakeholder perception can provide valuable insights and an understanding of the industry's potential. By conducting research in these areas, a more comprehensive understanding of mining tourism's impact on destination imaging and stakeholder perception can be achieved. This research can inform policymakers, destination managers, mining companies, and other stakeholders in developing strategies for sustainable and responsible mining tourism development. The ideal way to do this would be on a case-by-case basis.

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## مروری بر گردشگری معدن و موقعیت‌یابی تصویر مقصد: مطالعه موردی، هند

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#### چکیده:

موقعیت‌یابی تصویر مقصد، یک قهرمان اصلی در دستیابی به گردشگری معدنی است. با شکل‌دهی استراتژیک به درک یک مقصد معدن، بازار یابان می‌توانند بازدیدکنندگانی را که علاقه‌مند به تجربیات استثنایی و میراث فرهنگی مرتبط با معدن هستند، جذب کنند. عدم موقعیت‌یابی تصویر مقصد و تحقیقات گردشگری معدن می‌تواند مانع رشد و پیشرفت مقاصد گردشگری معدن شود. بدون درک روشنی از ویژگی‌های منحصر به فرد و موقعیت بازار یک مقصد معدنی، هدف‌گیری مؤثر و جذب مخاطب مناسب چالش برانگیز می‌شود. تحقیقات ناکافی در مورد گردشگری معدن نیز توانایی شناسایی و سرمایه‌گذاری بر پتانسیل مقصد را محدود می‌کند، مانند میراث فرهنگی، پایداری محیطی، یا پیشنهادات ماجراجویی. بدون تصویر مقصد به خوبی تعریف شده و استراتژی‌های مبتنی بر تحقیق، تلاش‌های بازاریابی ممکن است ارزش و جذابیت تجارب گردشگری معدن را منتقل نکند. بنابراین، سهامداران و محققان باید در مطالعه و درک پویایی بازار، ترجیحات بازدیدکنندگان، و رفاه آینده‌ای که گردشگری معدن می‌تواند برای اقتصادها و جوامع محلی به ارمغان بیاورد، سرمایه‌گذاری کنند. این تحقیق می‌تواند استراتژی‌های مؤثر موقعیت‌یابی تصویر مقصد را ارائه دهد و به باز کردن پتانسیل کامل مقاصد گردشگری معدن کمک کند. بنابراین، دیدگاه‌های زیست‌محیطی، اجتماعی و اقتصادی کنونی در مورد پایداری این نوع رشد گردشگری در بررسی ادبیات این حوزه برای سناریوی هندی تشریح شده است.

**کلمات کلیدی:** گردشگری معدنی، تصویر مقصد، ادراک ساکنان، تاثیر اقتصادی، تاثیر زیست محیطی.