

Understanding the Social License to Operate from a Cultural Perspective: The Case Studies of Australia, Greece, and India [†]

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Abstract: A reliable, sustainable, and transparent supply of critical raw materials is vital for developing future technologies and transitioning to a carbon emission-free world. However, mining can generate social, economic, and environmental impacts, compromising the sector’s public perception and jeopardising the social acceptance of operations. In various contexts, the social impacts of mining are assessed with different sets of indexes and targets. This study investigates cultural indicators of societal acceptance for mining critical raw materials in Australia, Greece, and India. Identifying and comparing the perception of mining in the three countries points out the difference in each society’s behaviour based on their culture.

Keywords: SLO; perception of mining; cultural differences; raw materials; social impacts

1. Introduction

The ‘social license to operate’ (SLO) is a term widely picked by the mining industry to indicate the authenticity of its performance on aspects involving local stakeholders and particular host communities [1,2]. A systematic approach to SLO reduces the risk of business negotiation failures between stakeholders. Like mining, however, gaining the social license to operate differs from country to country, and can even differ between regions of the same country that demonstrate cultural diversity.

Cultural values, traditions, religion, and worldviews shape communities’ attitudes, beliefs, and perceptions towards mining projects and influence how they perceive potential benefits, risks, and impacts. Different cultures may have distinct perspectives on land use, resource ownership, and environmental stewardship [3]. Societies and the industry may also have different values across socioeconomic issues, cultures, and religions [4]. Consequently, there are various perceptions about risk and hazards and sustainable development. What a mining company may regard as a “risk” may differ from what society considers a “risk”. Financial gains drive mining companies, whereas local societies have different views regarding risk, which may involve safety, environmental, social, and economic aspects. As a result, these different perceptions of risk between stakeholders may lead to miscommunication and, consequently, lack of trust.

Understanding and addressing these cultural differences is crucial for gaining social acceptance for mining. It is believed that if trust is developed between the relevant participants, the SLO can prove an important tool to safeguard the supply of (critical) raw materials, minimise the environmental footprint and improve the quality of life in the affected regions [2,5,6].

This study gives an insight into building trust, focusing on the cultural aspects of societal acceptance for mining critical raw materials in Australia, Greece, and India. The countries were selected based on the experience of the authors in their mining sectors and the societies’ perceptions of mining. A comprehensive literature review was conducted,



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followed by the application of Hofstede's model of national culture [7]. Identifying and comparing the perception of mining in the three countries points out the difference in every society's behaviour based on their culture. Accordingly, this work shows pathways to include cultural dimensions in corporate activities and vital negotiations between industry and community stakeholders to increase the public's awareness, improve their perception of the purpose of mining, and prepare the road for gaining the social license to operate.

2. Social Perception of Mining in Australia, Greece, and India

Public perception of mining varies across different countries. Hereinafter, we discuss mining acceptance in Australia, Greece, and India, highlighting the differences in perception from a cultural perspective.

2.1. Australia

Australia is known for its significant mining industry, which plays a crucial role in the country's economy and the sustainable supply of several critical raw materials [8]. SLO in Australia is described as "an honest, transparent engagement resulting in a beneficial outcome to all parties before, during and after mining" [9]. Nevertheless, the perception of mining across the country is diverse. While many Australians recognise the economic benefits and job opportunities mining provides, there are concerns regarding environmental impacts, indigenous rights, and community well-being [10]. Most mining projects are well sustained, and the local industry's approach to environmental management and sustainable development is regularly used as a model for emerging mining economies [9].

However, there are also mine sites with poor environmental management practices, tailings dam failures, landowner disputes, and government intervention, resulting in the loss of social license and early unplanned closure. Some communities impacted by mining activities have raised issues related to land use, water management, and social and cultural disruptions. Environmental advocacy groups often emphasise the need for sustainable mining practices and stronger regulatory frameworks [2,9].

The loss of the SLO in some sectors of the Australian mining industry has resulted in the end of, among others, mineral sand production on the east coast, the restriction of uranium mining and the non-production of nuclear power energy, the gradual decrease in the production of coal, and the end of small-scale mining in the country [9].

2.2. Greece

Mining in Greece has a long history, and the land is rich in mineral resources. A mix of positive and negative views characterises the social perception of mining in Greece. Historically, mining has been an important industry, providing employment opportunities, contributing to regional development, and having a profound impact on Greek culture, shaping its technology, mythology, and artistic expression [11].

However, in modern times there have been environmental degradation, health concerns, and disputes over land use. Public protests and opposition to specific mining projects have emerged, particularly in cases where local communities perceive a threat to their environment, cultural heritage, and quality of life. Economic considerations, environmental impacts, and community engagement influence the social acceptance of mining projects in Greece [12,13]. Some examples of public arguments regard the mining of gold in northern Greece and lignite in several parts of the country. Kolovos [14] examined the lignite deposits in Florina and commented upon the consequences for mine production and social acceptance. He stated that the local community can still accept and welcome a mining project in areas where mining has been active for many years, and the residents are familiar with common mining practices. The mining project must be carefully planned and communicated to the local communities.

2.3. India

Mining is also an important sector in India, fueling the country's industrial growth and employment. The country has vast reserves of numerous minerals and metals and is estimated to produce nearly a hundred commodities [15]. Over the last few decades, India's mining sector has steadily grown due to supportive legal reforms and increasing demand for minerals, fuel, and resources.

However, the social perception of mining in India is complex due to diverse cultural, environmental, and socioeconomic contexts. While mining provides livelihood opportunities for some communities, concerns are related to environmental degradation, displacement of indigenous communities, and social inequality [16]. The domestic industry has a poor reputation in terms of human rights violations and rampant pollution. The interests of the local communities affected by mining operations are often neglected or not given enough importance. Many of the measures to prevent environmental damage are not enforced strictly. There have been several instances of corruption and ignorance, especially recently [16]. Conflicts arise when mining projects intersect with tribal lands, forests, and ecologically sensitive areas. Environmental activists, social organisations, and affected communities often demand stronger regulations, community participation, and sustainable mining practices to address these concerns.

3. Hofstede's Model of National Culture Applied to the Three Countries

Evidently, cultural differences play an important role in how mining is perceived and accepted in Australia, Greece and India. Thus, we apply the 6-D model of national culture developed by Hofstede [7]. The six dimensions represent every aspect that is measured relative to other cultures:

- Power Distance (PD) is defined as the extent to which the less powerful members of a society/organisation expect and accept that power is distributed unequally.
- Individualism vs. Collectivism (IvC) refers to the interdependence level a society maintains for its members, as to whether people's self-image is defined as "I" or "We".
- Masculinity vs. Femininity (MvF) refers to people willing to be the best (masculine) and people being motivated by liking and caring about what they do (feminine).
- Uncertainty Avoidance (UA) regards the extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid them.
- Long-term vs. Short-term Orientation (LTvST) describes how every society has to maintain some links with its past while dealing with present and future challenges. Societies prioritise these two existential goals differently. Normative societies that score low on this dimension prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion. Societies that score highly take a more pragmatic approach: they encourage thrift and efforts in modern technology as a way to prepare for the future.
- Indulgence vs. Restraint (IvR) is defined as the extent to which people try to control their desires and impulses based on their upbringing. Relatively weak control is called "Indulgence", and relatively strong control is called "Restrained".

4. Dimension Scores & Discussion

Hofstede's model provides a general framework with dimension scores through an online-based tool [7] for several countries across the globe that can help to identify broad tendencies within societies. Each dimension is expressed on a scale ranging roughly from 0 to 100. The numerical indications are based on historical data but do not capture individual variations or changes that may occur over time. This work uses the dimension scores and profiles to understand the cultural impacts on mining perception, in Australia, Greece, and India, that define the pathway to gaining the social license to operate. The results are illustrated in Table 1 and the findings per dimension per country are discussed right after.

Table 1. National Culture Comparison between Australia, Greece, and India.

Country	PD	IvC	MvF	UA	LTvST	IvR
Australia	38	90	61	51	21	71
Greece	60	35	57	100	45	50
India	77	48	56	40	51	26

4.1. Power Distance (PD)

Australia is known for having a relatively egalitarian society supporting individualism, independence, and the belief that everyone should have a say in decision-making. For this reason, the power distance in Australia is relatively low (38). This should encourage mining companies to actively engage with stakeholders, demonstrate transparency, be accountable for their actions, and fulfil environmental and social responsibilities. Failure to meet these expectations can lead to reputational damage, community opposition, regulatory challenges, and potential disruption to operations.

In Greece, the power distance dimension is fairly high (60). Greek society exhibits a hierarchical structure, where people accept and respect authority. However, this may result in a lack of trust between mining companies and local communities. The perception that power is concentrated in the hands of a few can lead to suspicions and doubts about the intentions and fairness of a company's operations. To ensure a positive SLO, companies should consider engaging more with local societies, using transparent communication, consultation, and collaboration to address concerns, provide information, and involve stakeholders in decision-making processes.

In India, power distance is high (77), meaning there is acceptance and expectation of hierarchical structures and unequal power distribution within society. There is a strong respect for authority and a tendency to defer to government decisions and regulations. Building strong relationships with government authorities, engaging local communities respectfully, involving stakeholders in decision-making, addressing inequality, and benefiting distribution concerns are crucial steps toward securing SLO and legitimacy.

4.2. Individualism vs. Collectivism (IvC)

Individualism in Australia is evident (90) with a strong emphasis on personal freedom, individual achievement, and independence. However, collectivist tendencies also exist; Australians value their families, communities, and social connections. Regarding mining, societies prioritise their interests, environmental concerns, and land ownership rights over the interests of companies. They demand transparency, accountability, and engagement to ensure their rights are protected, and their concerns are addressed.

Even so, Australian communities also place importance on collective well-being, environmental sustainability, and the impact of mining activities on their local ecosystems. They may expect mining companies to prioritise community development, contribute to local infrastructure, and minimise negative environmental and social impacts. To obtain and maintain SLO in the Australian mining sector, companies must engage more with local communities, understand their needs and concerns, and demonstrate a commitment to environmental sustainability and social responsibility.

Greece, on the other hand, as a Mediterranean country, tends to lean more towards collectivism (35). Greek society strongly emphasises close-knit social relationships, family ties, and the overall well-being of the community. Regarding the mining industry, the collectivistic Greek culture may result in a greater focus on community welfare and environmental concerns. People expect the mining industry to prioritise community development, job creation, and sustainable practices. Companies operating in Greece must engage in meaningful dialogue and collaboration with local people, government authorities, and other stakeholders. This includes conducting thorough environmental impact assessments, implementing responsible mining practices, and ensuring transparent communication

regarding their operations. Failure to address the collective concerns of Greek society may lead to protests against mining projects and legal action being sought.

India is a country with a diverse cultural heritage that exhibits a mix of individualistic and collectivistic tendencies (48). In the Indian context, individualism can be observed in the aspiration for personal success and upward mobility. Conversely, collectivism is deeply rooted in traditions, family values, and community ties. Collective decision-making and consensus-building are important. Individualistic tendencies may lead to a focus on maximising individual profits and economic gains in the mining industry. This can result in conflicts with local communities and stakeholders prioritising collective interests, such as environmental protection, cultural preservation, and social equity.

Mining companies that actively engage with local societies, respect their cultural values, provide employment opportunities, and contribute to community development initiatives are more likely to gain social acceptance. Engaging in transparent and inclusive decision-making processes, addressing environmental concerns, and sharing the benefits of mining operations can help build trust. Collaboration with local governments, NGOs, and community leaders can also play a crucial role in navigating the individualism versus collectivism dimension and ensuring sustainable mining practices in India.

4.3. Masculinity vs. Femininity (MvF)

All three countries have traditionally been considered masculine societies, encouraging competition and individual success. This mindset can affect engagement with the mining industry, as stakeholders may prioritise their interests over collective well-being. Building trust and meaningful relationships with local communities, environmental groups, and other stakeholders is crucial to obtaining social acceptance and permits for mining operations. Feminine values, such as quality of life and caring for others, are often associated with a greater emphasis on environmental protection and sustainability.

Masculine societies may have more traditional gender roles and expectations, with men often dominating positions of power and leadership. The Australian mining sector, for example, has historically had a predominantly male workforce, contributing to a more masculine culture (61). The Greek and Indian mining sectors are not far behind (57 and 56 respectively). Indian society has traditionally emphasised gender roles, with men being seen as dominant and assertive and women often expected to be nurturing and supportive. This gender imbalance can impact workplace dynamics and contribute to gender stereotypes. Suppose mining operations are perceived as contributing to gender inequality, this can lead to community opposition and strained relationships.

Mining companies can foster an inclusive work environment by promoting diversity and offering equal opportunities for both men and women. Creating an inclusive work environment that values masculine and feminine qualities and demonstrates sensitivity to cultural norms can contribute to a more positive social impact and help build stronger relationships with communities affected by mining operations.

4.4. Uncertainty Avoidance (UA)

Australians generally are more relaxed toward ambiguity and uncertainty (51). This is reflected in their willingness to take risks, embrace change, and tolerate a certain level of unpredictability in various aspects of life. In such a low uncertainty avoidance society, greater emphasis is given to open dialogue, transparency, and engagement between mining companies and the local community. Companies that proactively communicate with stakeholders, address concerns, and involve them in decision-making processes are more likely to gain and maintain a social license to operate.

Greece has the highest score on this dimension (100), meaning that Greeks are not comfortable in ambiguous situations, and thus gaining their trust can be challenging. Clear rules and regulations are fundamental, and in mining, this leads to a stricter regulatory framework and increased expectations for compliance with environmental and safety standards. Heightened concerns about potential environmental damage, especially in

areas with high cultural value, health risks, and the long-term sustainability of mining operations, may result in expectations for commitment to responsible and sustainable practices, including environmental stewardship, land rehabilitation, ethical behaviour, respect for cultural heritage, and community development initiatives. Greek society may exhibit a greater need for involvement and participation in decision-making processes.

India has a medium to low preference in this dimension (40) and the level of uncertainty avoidance varies across different regions and communities. Some areas tolerate imperfection. Not everything needs to go as planned. Indian people are patient and tolerance for the unexpected can be high. Rules are often in place just to be circumvented, and one relies on innovative methods to “bypass the system” and adjust.

However, Indian society also prefers structured and well-defined situations, rules, and procedures and may have a lower tolerance for ambiguity and uncertainty. Uncertainty avoidance in India influences the social license to operate in the mining industry by shaping regulatory frameworks, community engagement approaches, stakeholder communication strategies, and risk management practices. Understanding and addressing the concerns and expectations of uncertainty and ambiguity are vital for mining companies seeking to operate successfully in India.

4.5. Long-Term vs. Short-Term Orientation (LTvsST)

Australia is generally considered to have a more short-term orientation (21), valuing practicality, adaptability, and flexibility. This allows for rapid development and extraction of mineral resources, leading to significant economic benefits for local communities and the country. Mining projects create employment opportunities and contribute to infrastructure development, especially in rural and remote areas. However, prioritising immediate economic gains over long-term environmental sustainability can negatively impact ecosystems, water resources, and biodiversity. Short-term focus may also neglect the social and cultural impacts on indigenous communities, leading to social conflicts and loss of traditional lands. Hence, various stakeholders, including government bodies, industry associations, and advocacy groups, strive to balance short-term economic interests with long-term sustainability and community well-being.

Greeks often emphasise tradition, continuity, and preserving cultural values over time, thus focusing on long-term orientation (45). Mining operations that consider the protection of cultural heritage are more likely to maintain a positive relationship with local communities. Nonetheless, Greek society’s emphasis on tradition can create resistance to change, especially in large-scale industrial activities such as mining. New projects may face opposition if perceived as disrupting the existing social fabric or threatening the environment. Elements of short-term orientation can also be observed, particularly in economic and political contexts. Immediate economic gains can be advantageous for projects that promise job creation, tax revenues, and development in the short run, but this focus might undervalue long-term environmental considerations.

India is often considered to have a long-term orientation (51), influenced by its rich history, traditions, and emphasis on family and community values. A long-term orientation encourages a focus on sustainable development in the mining sector. It can promote responsible mining practices that prioritise environmental protection, community well-being, and the preservation of resources for future generations. It may also result in slow decision-making processes, bureaucratic hurdles, and excessive red tape. These delays can hinder the efficient and timely execution of mining projects, affecting investor confidence, and potentially undermining the SLO. Thus, the Indian mining sector must balance long-term orientation and the need for flexibility, adaptability, and efficiency.

4.6. Indulgence vs. Restraint (IvR)

Australia is considered an Indulgent country (71). Society values personal freedom, enjoyment, and self-expression. In this case, the mining industry may face challenges in obtaining an SLO if its activities negatively impact the environment, local communities,

or cultural heritage. There may be greater scrutiny and demands for strict environmental regulations, community engagement, and transparency from mining companies. Restraint-oriented communities value self-control, adherence to rules and norms, and a sense of duty. Companies following this path may align with the expectations of stakeholders and thus ease the process of social acceptance.

In the context of Greece and its mining industry, the balanced score (50) indicates no clear preference between indulgence and restraint. The level of social acceptance and support for mining operations can differ based on cultural values. Understanding these values can help mining companies tailor their communication strategies, engagement efforts, and sustainability initiatives to align with the cultural context and gain a social license to operate. In restraint-oriented societies, there might be a greater emphasis on social responsibility, community well-being, and long-term planning. Therefore, mining companies showing commitment to environmental protection, community engagement, and sustainable practices are more likely to gain social acceptance. In indulgent societies, immediate economic gains and job creation might hold more weight in public perception.

India has a range of indulgent practices and celebrations, and the level of indulgence can vary across different regions and communities in India. At the same time, India has a long history of social norms, customs, and regulations promoting restraint in various aspects of life. This can be observed in religious practices, societal expectations, and traditional values. Accordingly, India's score in this dimension is low (26). In regions where indulgence is more prevalent, mining companies may need to actively engage with local communities and address their concerns and expectations. This could include incorporating local cultural practices and rituals into their operations, supporting community festivals, and providing benefits that align with the indulgent nature of the society. In restrained regions where environmental concerns are given high priority, mining companies may face stricter scrutiny and resistance from communities if they are perceived to be causing harm to the environment or disregarding local customs and beliefs.

5. Conclusions

The parallel comparison of diverse cultures from three countries in different parts of the world has revealed interesting findings. Australia, Greece, and India have some similarities but significant cultural differences that explain the diverse perception of mining and its social acceptance. The roadmap to obtain and maintain a social license to operate cannot be standardised. In this work, we demonstrated how cultural dimensions can catalyse the public perception and acceptance of mining. The orientation of each of the three countries towards all dimensions, has the most substantial relevance for the stakeholders' behaviour when assessing the criteria for granting an SLO.

Nevertheless, SLO depends on various factors beyond cultural dimensions, such as the impact of mining operations, engagement with stakeholders, and ethical business practices. Thus, the industry must adopt diverse multi-criteria approaches every time.

It is essential also to note that cultures are dynamic, and societal attitudes and values can change over time. In addition, cultural dimensions are not fixed or absolute, and societies can exhibit various characteristics. A notable restriction of this work regarding Hofstede's cultural dimensions is that they were developed based on data collected from the 1960s to the 1980s, and thus, their application may not be that accurate anymore.

Hence, there is room for essential future work on this subject, both in terms of updating the cultural dimension data for the three countries under investigation and for others. The next steps are deeper research in the literature and the engagement of experts and stakeholders.

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