JOURNAL FOR SOCIAL SCIENCE STUDIES
An International Peer-Reviewed Open Access Journal

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
Volume 4 • Issue 4 • August 2026

CRITICAL MINERALS AND THE EMERGING GEOPOLITICS OF BALOCHISTAN: ANALYZING GREAT POWER COMPETITION, LOCAL GRIEVANCES, SECURITY CHALLENGES, AND THE WAY FORWARD

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DOI: https://doi.org/10.5281/zenodo.22337878

Keywords
Critical Minerals, Great Power Competition, Balochistan, Local Grievances, Security Governance.

Article History
Received: 28 June 2026
Accepted: 15 August 2026
Published: 31 August 2026

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Abstract

The world is racing for critical minerals, and the geopolitics of today is being redefined with a focus on politically vulnerable nations with rich mineral reserves that are being targeted by major powers. Balochistan has become a significant geopolitical region in South Asia because of its rich mineral resources, strategic access to the sea, and its increasing importance in the growing connectivity projects. Despite the growing international attention on the critical mineral potential of the province, local communities suffer from socio-economic exclusion, weak institutional representation, environmental concerns, and ongoing insecurity. This research focuses on the interconnections of critical mineral geopolitics, great power rivalry, local grievances, and security concerns in Balochistan. The study has followed a mixed-methods research design using primary and secondary data. Primary data is gathered from semi-structured interviews and perceptions-based discussions with the local community, researchers, policymakers, youth, and stakeholders from selected districts of Balochistan. Secondary sources comprise policy reports, strategic studies literature, media discussions, and official documents concerning mineral development and regional security. The results show that while most in the region see critical minerals as a potential engine for economic change, local communities feel mistrustful because of past histories of political marginalization, inequitable benefits, absence of local engagement, and securitized development practices. The study also reveals the potential for national insecurity to deepen as a result of increased geopolitical competition for strategic resources if governance systems remain exclusionary and trust deficits persist. The paper concludes that mineral development in Balochistan cannot be realized through strategic investments alone, nor are security-based policies enough. Rather, it needs a community-based governance structure that focuses on transparency, local ownership, equitable resource sharing, environmental protection, and promoting political participation. The study suggests a policy-oriented path forward that can promote a balance between geopolitical interests, national security interests, and socio-economic aspirations of local communities.

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1. Introduction

As the world moves towards a clean energy economy, digital technologies, advanced manufacturing, and defense modernization, critical minerals have emerged as the strategic battleground in today's geopolitical landscape. Important minerals like lithium, copper, cobalt, nickel, graphite and rare earth elements, manganese and other strategic resources used to make electric vehicle batteries, semiconductors, renewable energy, aerospace and advanced defense equipment are now the focus of competition, unlike previous centuries in which oil and natural gas largely shaped the power dynamics of the world. The increasing demand from industrialized and emerging economies for these minerals has made them much more important than just economic commodities; strategic commodities that directly affect national security, technological leadership, energy transition, and geopolitical influence. As a result, the global competition for secure and diversified access to critical minerals has grown, impacting international partnerships, investment portfolio and foreign policy, as well as new opportunities and challenges for mineral-rich developing countries (International Energy Agency [IEA], 2024).

Demand for critical minerals has risen significantly as a result of global initiatives to decarbonize and increase the use of renewable energy technologies. The International Energy Agency (IEA, 2024) indicates that clean energy technologies like battery storage systems, power transmission systems, solar panels, wind turbines, and electric vehicles use large amounts of lithium, cobalt, nickel, copper, graphite, and rare earth elements. These minerals are expected to become even more crucial for the future, as countries strive for carbon neutrality and the objectives of the Paris Agreement. The centralization of mining and processing in a few countries has raised concerns about supply disruption, market volatility, and strategic dependence, leading to the enactment of national critical mineral strategies aimed at guaranteeing access to and diversification of critical minerals.

The new strategic importance of critical minerals has reconceptualized international competition. To ensure supply chain security, the United States, China, the European Union, Japan, Australia, Canada and some emerging economies are increasingly interested in investing in mining projects abroad, mineral exploration, mineral processing plants, recycling technologies and strategic partnerships. China's dominant position in the mining, refining, and processing of several critical minerals has had a significant impact on the strategic calculations of western economies, which has resulted in a greater effort to diversify mineral sources and to reduce excessive dependency on a single supplier. Hence, the role of resource-rich developing countries has grown more significant in the wider context of geopolitical competition, where they have been able to attract significant foreign investments and, at the same time, have been the centre of strategic competition among major powers. This has brought critical minerals into the spotlight as a means of geoeconomic leverage, in which access to strategic materials helps define diplomatic ties, technological competitiveness, industrial policy, and national security agenda-setting (IEA, 2024).

Beyond their economic implications, critical minerals also play a crucial role in national resilience and strategic autonomy, giving geopolitical weight to the economic considerations. Stable supplies of strategic minerals are essential for modern military systems, artificial intelligence applications, telecommunications infrastructure, aerospace technologies, quantum computing, and advanced electronics. As a result, Governmental policies for critical mineral security have become part of their wider national security agendas. Export restrictions and supply disruptions, geopolitical tensions, and rising resource nationalism have added to the worries about mineral production and processing capacity concentration, which have led to a push for increased international cooperation and also to increased strategic competition. The geopolitical context shows that countries with large critical mineral deposits will most likely be more influential in the future economic and political

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system if they find ways to link their critical mineral potential with effective governance for economic growth, environmental protection, and social integration.

In this fast-changing world scenario, Pakistan has become an increasingly important player due to its huge untapped mineral reserves, especially in Balochistan province. It has one of the world's most important deposits of copper and gold (Reko-Diq) as well as vast resources of chromite, iron ore, lead, zinc, antimony, marble, coal and the possibility of rare earth elements and other strategic minerals in the province. Many of these resources are under-explored relative to the global mining field, and in recent years, the geology of the province has been mapped, and there have been international investment projects that have led to a significant increase in interest in global resources in the province. Balochistan has thus become a center-stage province in the shaping of the mineral supply chains in the context of the growing international demand for critical minerals.

Apart from its mineral resources, Balochistan has a unique geostrategic location which links South Asia, Central Asia, the Middle East, and the Arabian Sea. The province also borders Iran and Afghanistan and gives Pakistan the longest coastline in the Arabian Sea, including the strategic Gwadar Port. This geographical location makes it more relevant to regional connectivity programs, especially the China–Pakistan Economic Corridor (CPEC), which is a hallmark of China's Belt and Road Initiative (BRI). world- the Strait of Hormuz- further underscores Balochistan's strategic significance in maritime security, global supply chain connectivity, and regional trade. As a result, Balochistan has become a region of strategic importance, with its rich mineral deposits, access to the sea, and proximity to key trade routes making it a hotspot for economic prospects, geopolitical rivalry, and security concerns.

Balochistan's significance is growing as more and more countries invest in and engage with Pakistan's key mineral industry. In the wider context of global supply chain diversification, recent initiatives of international mining companies, multilateral financial institutions and foreign governments demonstrate the renewed interest in Pakistan's mineral potential. These are not only business interests but also strategic aims to diversify the supply of key minerals away from current dominant suppliers. But such investments are fraught with potentialities for economic growth, employment creation, export diversification and industrial development, yet at the same time they pose significant issues in terms of governance, transparency, equitable resource distribution, environmental sustainability and community engagement.

Balochistan is still facing persistent socio-economic underdevelopment, political marginalization, weak institutional capacity, infrastructure shortages, an underdeveloped industrial base, and security issues despite being blessed with extraordinary resource endowment and strategic location. Community concerns often include inequitable benefit-sharing, lack of jobs, environmental degradation and lack of involvement in managing resources. Some historical grievances regarding political marginalization and perceived unfair distribution of natural resource revenues have led to distrust between local people and state institutions. Meanwhile, insurgency, terrorism and infrastructure and development project targeting have made it difficult to generate sustainable investments and establish stable governance frameworks. All of these interrelated challenges illustrate that mineral development is not only an economic or geological issue, but also a political, social, environmental and security issue.

In this context, the geopolitics of critical minerals, great power competition, local grievances and security governance have gained greater significance for both policymakers and academics. With its potential to become a significant force in Pakistan's economic transformation and global critical mineral supply chains, inclusive and balanced governance practices are essential to unlock this promise, including through strategic investments in the region that account for inclusive development, environmental protection, transparency and meaningful

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community engagement. With the growing international competition for critical minerals, Balochistan provides a valuable case study on how such resource-rich but politically fragile regions can balance competing geopolitical interests, ensure sustainable development, bolster national security, and meet the legitimate socio-economic demands of their people.

2. Research Problem

The supply of crucial minerals has become a game-changer, transforming the global geopolitical landscape as countries pursue and fight for these resources. Critical minerals such as copper, lithium, cobalt, nickel, rare earth elements, and graphite are all vital to renewable energy technologies and the EV sector, as well as advanced manufacturing, the digital economy, and defense. Developing countries with mineral resources are more than ever subject to this, as governments work to diversify supply chains and reduce their dependence on dominant producers. In this regard, Balochistan has gained strategic importance as it is home to huge untapped mineral resources, such as one of the world's largest undeveloped copper-gold deposits at Reko Diq, which holds the potential for other strategically significant minerals that are crucial to global energy transition plans.

Despite its huge resource potential, Balochistan has been experiencing the problems of socio-economic underdevelopment, political marginalization, weak institutional governance, environmental issues and a precarious security situation. Many large-scale mineral projects have created significant expectations for economic growth and regional development; but many local Baloch people feel that the gains of resource extraction are not distributed fairly. Poor employment prospects have led to mistrust of state institutions among local communities, as have limited opportunities for community participation in decision-making and fears of environmental degradation and a lack of transparent revenue-sharing mechanisms. At the same time, insurgency, terrorism and growing securitization of strategic investment projects have added complexities to sustainable investment and mineral governance.

While various studies have discussed the economics of minerals, insurgency, the CPEC, and natural resource governance in Balochistan, there is still a lack of understanding of how competition for critical minerals, local grievances, governance issues, and security dynamics intertwine in one analytical prism. So far, the research addressing the topic rarely discusses international geopolitical competition in relation to community perceptions and sustainable resource governance and hence, policy measures are sparse. Thus, an interdisciplinary study of critical mineral geopolitics, great power rivalry, local socio-political dynamics and security governance is warranted. This is essential to develop policies that can balance national strategic requirements, equitable socio-economic development, and regional sustainability.

3. Research Objectives

The general aim of the study is to investigate the geopolitics of critical minerals for Balochistan and how it shapes great power competition, local grievances, security governance, and the sustainable development of critical minerals.

Specific objectives:

1. Examine the shifting geopolitical landscape of key minerals and its impact on the significance of Balochistan.
2. Discuss the interests and influence of key players in the shaping of mineral investment, regional influence and strategic competition in Balochistan.
3. Examine community perspectives on mineral development, governance, ownership and benefit-sharing processes.
4. Examine the associations between local grievances, political marginalization and security issues related to critical mineral development.
5. Evaluate the institutional, governance, environmental and policy issues of sustainable management of mineral resources in Balochistan.
6. 6. Formulate policy options for supporting transparent, inclusive, secure, and sustainable governance of critical mineral

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resources, accounting for geopolitical and socio-economic aspirations of the local communities.

4. Literature Review

4.1. Critical Minerals and Global Energy Transition

The increasing significance of critical minerals is one of the characteristics of the modern global political economy. Global reliance on minerals like lithium, copper, cobalt, nickel, graphite, manganese, and rare earth elements, essential for clean energy technologies, batteries for electric vehicles, semiconductors, advanced electronics, aerospace systems, and defense equipment has significantly grown with the transition from fossil fuel-based economies to clean energy systems. The economic value of critical minerals is not the only attribute that differentiates them from traditional mineral commodities; they also have strategic importance due to concentration of supply, limited substitutability, and the fact that they are essential to the development of new technologies. According to the International Energy Agency (IEA, 2024), critical minerals are defined as "those that are essential for energy transitions and advanced industrial applications, but where the production and processing capacities are concentrated, making them susceptible to supply disruption". Critical minerals are at the heart of national industrial strategies, international trade negotiations and geopolitical competition as countries strive to become carbon neutral and technologically competitive. These minerals are increasingly portrayed in literature as the strategic commodities of the twenty-first century, and as a result, international cooperation and rivalry are changing.

The global energy transition is the key driver of the unprecedented demand for critical minerals. Under the Paris Agreement, all governments have agreed to ambitious climate goals, which call for a fast pace of growth in renewable energy generation, electric mobility, battery storage, hydrogen technologies and smart electricity networks. These technologies are very mineral intensive compared with traditional energy systems. Offshore wind, solar PV, and battery storage use large amounts of copper, lithium, cobalt, nickel, graphite, and rare earth elements; EVs need several times more mineral inputs than internal combustion engine vehicles. In 2023, demand for lithium grew about 30 percent, while demand for nickel, cobalt, graphite, and copper also rose significantly thanks to growing clean energy deployment, according to the IEA (2024). Further, to reach global net-zero by 2050, there is an unprecedented need to scale up mining, refining, recycling, and processing capacity in several key mineral supply chains.

In addition to the clean energy transition, technology innovation is also a key driver of demand. S. industries such as artificial intelligence, cloud computing, 5G telecommunications, quantum technologies and advanced robotics are developing increasingly more complex systems, including electronic components with many critical minerals. At the same time, fast-paced urbanization and industrialization in the emerging economies have spurred the demand for electrical infrastructure, transmission networks, electric mobility, and modern manufacturing systems. These developments have now put minerals in the wider context of strategic interest beyond energy to industrial and technological competition. A new wave of research highlights the importance of supply security and access to critical mineral supply chains for future economic competitiveness, in addition to traditional energy resources (World Bank, 2023). Beyond their economic value, critical minerals have become a cornerstone of national security, making their strategic significance paramount. Rare earth elements, titanium, cobalt, lithium, and other strategic minerals are critical to the development of precision-guided missiles, stealth aircraft, satellites, unmanned aerial vehicles, radar technologies, naval platforms, cybersecurity infrastructure, and advanced communication systems that are used in modern defense systems. Accordingly, critical mineral security is now seen by governments as an integral part of the national technology sovereignty and resilience. According to IEA (2024), such disruptions in supply, export

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controls, geopolitical tensions, and concentrated processing facilities pose potential strategic vulnerabilities that could impact economic stability and military readiness. This has also encouraged governments to implement strategic reserves, diversify mineral sourcing, invest in local mining and refining, and improve ties with mineral-rich countries due to the growing securitisation of mineral supply chains.

The geopolitics of critical minerals have been transformed. Recognizing mineral security as a national strategic concern, the United States has pursued industrial policies to lessen reliance on foreign suppliers and build mineral processing, production, and recycling capacity. The United States has encouraged investment in domestic mining efforts, strategic partnerships with allies, and supply chain diversification to lessen strategic exposure to geopolitical adversaries through legislation, including the Inflation Reduction Act, and related critical mineral strategies. In an increasingly great-power competitive world, critical mineral policy in the United States is increasingly being framed as necessary for clean energy technologies as well as for maintaining technological leadership, economic competitiveness, and defense readiness.

China is the dominant force in the international critical mineral supply chains. While it does not have the largest geological resources of all strategic minerals, China has made decades of continuous efforts in industrial policies, foreign direct investment, and technological progress to gain overwhelming control over mineral refining, processing, battery manufacturing, and downstream industrial production. Chinese firms have been buying mining properties in Africa, Latin America, Central Asia and Southeast Asia, and have also been building domestic refining facilities. China remains the world's leading processor of lithium, cobalt, graphite and rare earth elements, which means Beijing has significant influence over supply chains, IEA (2024) said. This dominant role has led to growing worries in Western economies about over-reliance on Chinese processing capacity and the strategic implications of a potential restriction of exports.

The European Union has also identified the key importance of ensuring secure supply of key minerals that are essential for meeting the goals of the Green Deal and for the competitiveness of its industry. Diversification of mineral imports, responsible sourcing, mineral recycling, circular economy and strategic partnerships with resource-producing countries are increasingly the focus of European policies. The European Critical Raw Materials Act is part of the general trend of mitigating the vulnerabilities of supply chains and enhancing local exploration, processing and recycling. However, European strategies also aim to encourage high environmental, social, and governance (ESG) standards within mineral value chains in the rest of the world, and diversified sourcing is just as important as responsible mining practices to ensure supply security.

With vast reserves of nickel, palladium, platinum group metals, and rare earth resources, Russia also plays a powerful role in the changing geopolitical dynamics of critical minerals. Though international sanctions have limited Russia's integration into the Western markets in some ways, minerals still hold a large strategic value, especially for states looking to diversify their industrial input. Likewise, Gulf States have increased investments in critical mineral projects around the world as part of wider economic diversification efforts away from hydrocarbons. In recent years, countries like Saudi Arabia and the United Arab Emirates have been making significant investments in African, Asian, and Latin American resources and in the processing of those resources, with an eye to becoming new actors in future mineral global value chains.

Emerging middle powers such as Australia, Canada, Indonesia, Brazil, Chile, South Africa, Namibia and a number of African nations have also become more relevant to the geopolitics of critical minerals on the global stage. Australia and Canada have national critical mineral strategies, both comprehensive, which feature sustainable mining, value-added processing, indigenous involvement and strategic partnerships with like-minded economies. To maximize economic value from the vast nickel reserves, Indonesia has implemented measures

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such as export restrictions and domestic processing requirements, a move that could be considered as a form of resource nationalism. African nations with cobalt, copper, manganese, graphite, and rare earth deposits have become a focal point of international competition as several governments try to maximize the development of their industrial sectors and manage foreign investment in accordance with national interest. A set of developments shows that the geopolitics of critical minerals is not just defined by the traditional great powers, but resource-rich middle powers are also an increasingly important part of the story in terms of strategic resource governance and industrial policies, which are the tools they are using to exert greater influence over critical mineral value chains (IEA, 2024; UNCTAD, 2023).

The increasing geopolitical rivalry for critical minerals illustrates how strategic resource access is now a cornerstone of economic competitiveness, technological innovation, energy security and national resilience. These days, it is increasingly understood that future power will not only rely on military might or financial resources but also on the ability to ensure diversified, resilient and sustainable mineral supply chains. This transformation has turned the mineral-rich developing regions like Balochistan into a geopolitically important region in which the interests of the international community meet those of national governance, socio-economic development, environmental sustainability, and national security.

4.2. Global Critical Minerals Competition

Global geopolitics has dramatically shifted in the 21st century as the importance of critical minerals has grown. Today's competition for power is no longer merely about oil and natural gas but has expanded to include minerals that are essential for clean energy technologies, electric vehicles, semiconductors, advanced manufacturing, artificial intelligence, aerospace and modern defense systems, such as lithium, copper, cobalt, nickel, graphite, manganese and rare earths. The growing pace of the global shift to low carbon economies has driven up the demand for these materials, making them 'strategic materials' that affect national security, economic competitiveness and technological leadership, rather than being industrial commodities. According to the IEA (2024), the demand for several critical minerals is expected to rise significantly in the coming decades as countries strive towards energy security and carbon neutrality. As a result, governments have increasingly incorporated critical mineral security into national industrial, economic, and foreign policy agendas, understanding that the continuity of supply of these resources is vital to continue to enjoy economic growth and geopolitical influence in the future.

As critical mineral supply chains have become global, new strategic competition has emerged as well. Mineral deposits are spread across the globe, while mining, processing, refining, and manufacturing capacities are highly concentrated in a few countries. This concentration has exposed vulnerabilities in major economies to geopolitical tensions, trade restrictions, export controls, natural disasters, and market disruptions within the supply chain for these economies. The COVID-19 pandemic and the ensuing geopolitical tensions also highlighted the vulnerabilities of global supply chains, leading governments to consider how to increase their supply chain resilience by diversifying their supply base, investing in domestic production, building strategic stockpiles, and developing mineral recycling technologies (OECD, 2023). As a result, supply chain resilience is a key priority of the critical mineral strategies of developed and emerging economies.

The strategic competition between the United States and China has become the hallmark of today's critical mineral competition among all geopolitical relationships. As China's dominance in critical mineral processing and battery production has grown, it has become a strategic vulnerability to the United States, potentially impacting its economic competitiveness and national security. While the United States has significant geologic resources for a number of critical minerals, decades of relatively low investment in domestic resources have led to a high reliance on imported

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resources and Chinese processing facilities. In response, the United States has implemented a comprehensive approach that includes industrial policy, international cooperation, domestic mining incentives, strategic reserves and technological innovation. Legislative efforts, including the Inflation Reduction Act and the Bipartisan Infrastructure Law, have committed significant investments to scale up domestic mining, refining, battery manufacturing, and recycling activities and support supply chain diversification through supply chain partnerships with allied producers like Australia, Canada, and producers in Africa and Latin America (United States Geological Survey [USGS], 2025).

China is uniquely positioned in global critical mineral value chains. During the past few decades, the Chinese government has adopted long-term industrial policies in the fields of exploration, overseas mineral investment, mineral processing, manufacturing, and technological innovation. Today, China has a firm grip on the world's supply of rare earth metals, graphite, cobalt, lithium and other key minerals, and leads the world in the production of batteries and renewable energy. Beijing has significant influence over global supply chains, as China processes over half of the world's lithium, cobalt, and graphite, and also produces a significant share of global battery components, according to the IEA (2024). This dominance has enhanced China's geopolitical leverage and also urged rival economic powers to lessen their strategic reliance on China-controlled supply chains.

Meanwhile, the United States and its regional allies have put forward the Indo-Pacific Strategy as a counterpoint to China's growing presence to boost economic ties, infrastructure, maritime security, and resilient supply chains. Within this strategy, critical minerals play a prominent role, since access to strategic resources is seen as key to ensuring technological competitiveness and reducing reliance on concentrated supply chains. The United States aims to cultivate diverse and transparent mineral supply chains through projects like the Minerals Security Partnership (MSP), the Quadrilateral Security Dialogue (Quad), and bilateral partnerships with other countries, including Australia, Japan, South Korea, and India, that share common expectations for governance, environmental protection and responsible mineral investment. It highlights the economic, industrial and geopolitical strategies that are increasingly being combined in the Indo-Pacific region, as outlined by the Organisation for Economic Co-operation and Development (OECD, 2023).

The European Union has also identified the importance of critical minerals for the Green Deal, digital transformation and competitiveness of the European industry. The introduction of the Critical Raw Materials Act reflects Europe's efforts to reduce its reliance on Third Countries through greater production, recycling, strategic partnerships, and responsible sourcing. In addition to diversifying imports, European policymakers increasingly highlight high environmental, social, and governance (ESG) standards along the entire mineral value chain as crucial to resilient supply chains. Similarly, Japan and South Korea have stepped up their foreign investment and strategic partnerships to access reliable sources of minerals essential to their high-tech manufacturing industries.

A trend of equal importance in geopolitics today is the rise of resource diplomacy. Recently, resource-rich countries have also come to realize that critical minerals offer opportunities to strengthen their economic development and leverage their diplomatic influence and bargaining power in international politics. Australia, Canada, Indonesia, Chile, Brazil, Namibia, Zambia and some Gulf States have comprehensive critical mineral strategies that aim to maximise value added to critical minerals within their borders, to attract responsible investment, to foster downstream industrialisation, and to build international partnerships. The export ban on unprocessed nickel by Indonesia, for instance, is an example of resource nationalism to promote processing industries and boost the benefit of the country. Likewise, the Saudi and UAE governments have also been increasing their commitment to global mining investments, as part of a wider economic

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diversification program designed to lessen reliance on hydrocarbon revenues in the future. Evolving geopolitical dynamics show that critical mineral competition is no longer just about commercial interests; it is now about technology leadership, industrial policy, economic security, strategic alliances, and national resilience. Mineral-rich developing regions are now playing a greater role in global political and economic systems and supply chains are now being used as tools of geopolitical influence. As such, countries with rich critical mineral resources, such as Pakistan and especially Balochistan, are becoming more and more relevant players in the developing geopolitical contest. But it will be largely their efforts to establish transparent governance structures, build institutional capacity, guarantee equitable benefit-sharing and draw in sustainable investment that will make or break whether critical mineral wealth is a resource for inclusive development or a source of geopolitical conflict and domestic instability.

4.3. Strategic Importance of Balochistan

Balochistan holds a significant place in Pakistan's geopolitical and geoeconomic sphere, especially its territorial size, strategic geographical location, abundance of mineral resources, and increasing importance in regional connectivity projects. The province constitutes about 44% of Pakistan's geographic area and borders Iran and Afghanistan internationally, and it also possesses more than 770 km of coastline along the Arabian Sea. This geographical position puts Balochistan in the region of South Asia, Central Asia, the Middle East, and the Indian Ocean and makes it one of the most strategically important regions of the larger Indo-Pacific and Eurasian geopolitical landscape. The province's strategic importance has grown considerably in recent years with the rapid global demand for critical minerals, changing regional trade dynamics, and great power competition. As such, Balochistan is seen not just as Pakistan's mineral frontier but also as a vital node connecting the rich mineral hinterlands with international maritime trade routes and global supply chains (International Energy Agency [IEA], 2024).

The major reason for the strategic importance of Balochistan is that it has a coastline with the Arabian Sea. The coast of the province gives Pakistan direct access to the Indian Ocean, one of the world's busiest sea lanes, where a large share of the world's energy and trade moves annually. In the modern geopolitical landscape, maritime access plays a pivotal role due to its significance for international trade, energy transport, and strategic naval operations. Coastal areas that can accommodate deep-water ports, logistics hubs, and industry have increased strategic importance in the context of the Arabian Sea, which serves as a vital gateway between South Asia and the Middle East, East Africa, and Europe, via major international shipping lanes. The coastline of Balochistan is a key national asset, particularly for Pakistan, as it plays a pivotal role in its maritime security, international trade, and geoeconomic goals.

The province's strategic significance is further enhanced by its location along the Strait of Hormuz, which is one of the world's most critical maritime chokepoints. The Strait of Hormuz, just a few hundred kilometers from Gwadar, is the main passage for a large portion of the world's traded crude oil and liquefied natural gas. The U.S. Energy Information Administration (2024) estimates that around 20% of the world's petroleum trade transits through this narrow waterway, and its security is vital to international energy markets. Balochistan's geographical location, which close to the Strait of Hormuz, thus gives Pakistan a significant strategic advantage in the maritime affairs of the region, and also makes it a target of many global and regional powers. The growing military presence in the Indian Ocean, flare-ups in the Persian Gulf, and rising naval rivalry between the world's great powers have further added to the geopolitical importance of Pakistan's southwest coast in the overall regional security calculus.

Gwadar Port is another pillar of Balochistan's strategic significance. Gwadar is a modern deep-sea port in the Arabian Sea, strategically located at a critical juncture of the international shipping lanes linking East Asia, the Middle East, Africa and Europe. Gwadar has received much international interest since it became a flagship

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project of CPEC, due to its potential to serve as a hub for regional logistics services, a commercial port, an industrial hub, and a gateway for transnational trade. Proponents believe that Gwadar will serve as an alternate trade corridor to the Arabian Sea that will be more convenient and secure for China and other regional economies, allowing Pakistan to boost its maritime trade and industrialization and strengthen regional connectivity (Wolf, 2022). While the commercial potential of the port remains unharnessed, its strategic importance remains a factor in regional geopolitics and plays a major role in Pakistan's geoeconomics.

In addition to its geographical advantages, Balochistan has extraordinary mineral resources that have created great interest in the world in recent years. The province has the greatest expanse of copper, gold, chromite, iron ore, lead, zinc, antimony, coal, marble and various industrial minerals in the country. Of these resources, the copper gold deposit of Reko Diq in Chagai District is internationally renowned as one of the largest undeveloped copper and gold deposits in the world. Reko Diq has billions of tons of mineralized ore that can generate significant amounts of copper and gold for many decades. The project for Reko Diq has gained international strategic significance in view of the rapid increase in global demand for copper in renewable power generation, in electric vehicles, power transmission networks and digital infrastructure. Copper is one of the most critical minerals for reaching global decarbonization goals, due to its wide use in renewable energy systems and electrical infrastructure (World Bank 2023).

The gold reserves that are found in association with copper deposits further boost the economic feasibility of large-scale mining ventures in Balochistan. Although gold remains a strategic and financial asset as well as an industrial commodity, it continues to be in constant international demand. Copper and gold resources enhance the commercial viability of projects like Reko Diq, and also boost their foreign investment appeal. Apart from these known deposits, geological surveys have shown that rare earth elements and lithium can be found in various parts of Balochistan. Commercial exploration is still minimal, but with the rising significance of rare earth elements for advanced electronics, wind turbines, electric vehicles, defense systems, and artificial intelligence technologies, Pakistan's under-explored geological potential has sparked renewed interest. Lithium is one of the world's most in-demand strategic minerals, for example, due to its critical use in rechargeable batteries and energy storage technologies. Continuing geological exploration could therefore further reinforce Balochistan's role in the future global critical mineral supply chains (IEA, 2024).

Balochistan is also home to significant quantities of antimony, molybdenum, chromite, lead, and zinc, all of which add to the province's strategic resources portfolio. Molybdenum, used in strengthening steel alloys for infrastructure, aerospace, and military applications, and antimony, used in defense equipment, flame retardants, semiconductors, and battery technologies, are among the most important applications of these materials. The chromite deposits of Pakistan are mainly in Muslim Bagh and Khanozai and are one of the most important deposits in South Asia which are exploited for producing stainless steel, for metallurgical industries and for refractory manufacturing. Similarly, the lead and zinc deposits of Duddar are significant for industrial uses, such as in the production of batteries, galvanization, electronics, and construction. As a whole, these mineral resources make Balochistan one of the most resource-rich areas in South Asia with the potential to play a major role in the country's future industrialization, export diversification, and economic restructuring under the umbrella of transparent and sustainable governance (Geological Survey of Pakistan, 2024).

The province is also a key player in developing new regional economic corridors between Central Asia, Afghanistan, Iran, and the Arabian Sea. Balochistan is expected to play a crucial role as a hub for regional connectivity in future transport projects under various regional connectivity initiatives, such as the Central Asia Regional Economic Cooperation (CAREC)

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ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
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program and the Economic Cooperation Organization (ECO). Better road, rail, and pipeline links would also improve Pakistan's position as a regional transit economy and open up new prospects for trade and tourism, industrial growth, and mutual cooperation in the region.

Lastly, Balochistan's geographical position on sea routes makes it very important from a geostrategic point of view. The province offers direct access to the international sea lanes linking East Asia to Europe, Africa, and the Middle East, thus promoting Pakistan's maritime trade and naval policy. In an era where geopolitical rivalry is increasingly moving towards the Indian Ocean and Indo-Pacific, maritime connectivity is becoming a basic pillar of national economic security and regional clout. Thus, the combination of strategic location, rich critical mineral resources, Gwadar Port, CPEC, and the growing regional connectivity has made Balochistan one of the key players in the strategic landscape of South Asia. Its future significance will rely not just on successful infrastructure and mineral development, but also on transparent governance, inclusive economic policies, environmental sustainability, and real engagement by local communities in the benefits that can be derived from its significant natural and strategic assets.

4.4. Great Power Competition in Balochistan

Critical minerals have become increasingly significant in the geopolitical landscape, and Balochistan is increasingly the theatre of great power competition. The province's rich mineral resources, its strategic position on the Arabian Sea, its close proximity to the Strait of Hormuz, and its importance for regional connectivity have drawn the interest of larger powers in the world and in the region to access strategic resources and geopolitical leverage. With the rising demand for copper, rare earths, lithium, and other critical minerals across the globe, Balochistan plays a pivotal role in South Asia's changing geopolitical landscape. This has led to greater international interest in the province beyond standard development motivations, as it's now not just about development but also about economic interests, strategic competition, energy security, and supply chain diversification (International Energy Agency [IEA], 2024).

China remains the most important outsider in Balochistan with its investment under the CPEC and other BRI. Investments in Gwadar Port, transport infrastructure, energy and mining projects are all part of Beijing's long-term strategy for ensuring its reliable access to the Arabian Sea, as well as strengthening regional connectivity and uninterrupted supplies of strategic resources. Furthermore, Pakistan's significance in the context of global critical mineral supply chains has been accentuated with the revival of the Reko Diq project and a surge in exploration activity. While Chinese investments have played a role in developing infrastructure and facilitating economic cooperation, scholars suggest that for sustainable outcomes to be realized, it is crucial to have transparent governance, local participation, and equitable distribution of economic benefits, thereby minimizing potential social tensions and enhancing public trust (Wolf, 2022).

Western countries, especially the United States, the European Union, Canada, and Australia, have also increased their interest in Pakistan's mineral industry within the framework of their broader critical mineral supply chain diversifications and their efforts to curb overreliance on key suppliers. Their involvement highlights the importance of responsible mining practices, environmental sustainability, transparent governance, and private sector investments, as well as the role of secure and resilient supply chains for strategic minerals. Balochistan's mineral potential has also been gaining significance, with international financial institutions and multinational mining companies also showing greater interest in the province (World Bank, 2023).

Balochistan is also seen as an economic opportunity and a strategic competition by the regional powers. India is keenly observing the progress of Gwadar Port and CPEC due to their strategic significance for regional connectivity and maritime security in the Indian Ocean. Iran has a long border with Balochistan and wants to

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sustain economic relations with Pakistan, as well as develop Chabahar port as an alternative trade route in the region. In an effort to diversify their economies and to ensure the availability of strategic minerals in the future, the Gulf countries, especially Saudi Arabia and the United Arab Emirates, have been investing in Pakistan's mining, energy and infrastructure sectors. Similarly, Central Asian countries perceive Balochistan as a gateway to the world markets via Gwadar Port, which provides facilities for regional trade, energy export, and multimodal connectivity.

The above developments have important geoeconomic and geostrategic consequences for Pakistan. Geoeconomically, if the mineral resources of Balochistan are developed successfully, they will foster diversification in exports, foreign direct investment, employment opportunities, industrialization, and Pakistan's inclusion in global critical mineral value chains. However, on the geostrategic front, this heightened competition from other countries is also fraught with security, governance, foreign influence and regional rivalry issues. To maximize the benefits of this strategic environment, therefore, transparent institutions, effective resource governance, balanced foreign policy, environmental sustainability, and meaningful participation of local communities are essential to ensure that mineral development benefits national prosperity and long-term regional stability, and does not endanger them.

4.5. Local Grievances and Governance Challenges

Balochistan, with its rich critical mineral resources, remains severely affected by socio-economic deprivation, poor governance and political instability. The literature identifies these difficulties as related to governance failures, inequities in resource allocation and political marginalization in the past, not to limited resources. Socio-economic factors, such as low human development indicators and insufficient provincial investment in education, health, infrastructure, and employment, have exacerbated concerns of under-representation, lack of autonomy in decision-making, and inequitable access to natural resources. Such governance gaps have fueled ongoing political conflict and a loss of confidence in State institutions (Gazdar, 2022).

Ownership and control over natural resources in Balochistan are very contentious. As per the legal framework in Pakistan, cooperation between the federal and provincial governments is foreseen; however, many local people feel that the benefits of mining go to the federal government or to the investors outside Pakistan. Debates over revenue sharing, local employment, environmental protection and community benefits have been further sparked by the Reko Diq project. Research highlights the importance of transparent fiscal systems and fair distribution of benefits in fostering public confidence and inclusive development (Ahmed, 2024).

Another major concern is employment generation. Large-scale mining projects may have the potential to bring economic growth, but the local communities do not benefit since they lack technical expertise, vocational training, or access to outside labor. Consequently, there is a perception that they are the ones who suffer the environmental and social impacts of mining, without getting sufficient economic benefits. Thus, the need for technical education, capacity building, and preferential local hiring policies is emphasized (International Labour Organization, 2023).

Equitable sharing of revenues is also crucial for sustainable mineral governance. International experience demonstrates that resource-rich areas benefit from the communities and local government receiving equitable shares of mining revenues via royalties, development funds and infrastructure investment. But research on Balochistan has pointed to a lack of transparency, inadequate institutional coordination and vague fiscal transfers as key reasons for the discontent. As a result, transparent revenue-sharing processes are deemed crucial for inclusive governance (Natural Resource Governance Institute, 2023).

Sustainable mining governance, too, requires more substantive community engagement, the literature shows. International best practice encourages consultation with local communities

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for planning, implementation, monitoring and decision making, via public hearings, grievance mechanisms, community agreement and other methods. However, in Balochistan this consultation has not always been very wide-ranging or sincere, and it has at times been little more than symbolic, resulting in distrust and resistance. In this regard, strengthening participatory governance is essential in creating sustainable collaborations between local communities, investors and government (United Nations Development Program, 2022).

Institutions' ability remains a significant governance issue. Transparent licensing, environmental regulation, technical expertise and coordination of federal and provincial institutions are the elements of effective mineral management. Institutional fragmentation, bureaucratic inefficiencies, and inconsistent regulations pose challenges to effective governance, investment and accountability. Administrative restructuring, digitalization and institutional capacity development have thus become key policy concerns (Organization for Economic Co-operation and Development, 2023).

A lack of trust exists between local communities and government institutions due to political exclusion, governance weaknesses and unequal development. Skepticism about government proposals is rooted in historical conflict, the lack of follow-up in policy implementation, and poor stakeholder engagement. Recent research claims that rebuilding trust needs more than just security measures, it also involves transparency, accountability, ongoing communication, and a tangible improvement in the local socio-economic situation (UNDP, 2022).

International principles like Free, Prior and Informed Consent (FPIC) promote genuine engagement in decisions regarding land, livelihood and culture. Despite the different legal systems in Pakistan, it is suggested that mining policies in Balochistan should encourage social inclusion, cultural preservation and consent of the community. Issuing a comprehensive and detailed resolution of local grievances, inclusive governance, equitable resource management, strengthening institutions, and empowering local communities are thus deemed crucial to turn Balochistan's mineral resources into a catalyst for sustainable development and regional stability instead of ongoing security and political issues.

4.6. Security Challenges

One of the biggest problems in the sustainable development of Balochistan's critical mineral sector is security. The strategic, resource-rich and increasingly connected position of this Province has placed it at risk of multiple vulnerabilities such as political grievances, insurgency & terrorism, geopolitical competition, and weak governance. These problems impact investments, economic growth and public trust. Security is critical for resource governance, but scholars also stress the need for inclusive governance, equitable development, and community engagement for lasting stability (World Bank, 2023).

This insurgency in Balochistan is one of the longest-running internal security issues in Pakistan. Security forces, government institutions, mining sites and infrastructure have been targeted by militant groups. The province's porous border and rugged landscape have also made it a breeding ground for the activities of terrorist groups, which have created security challenges, hindered investment, and stalled significant development initiatives (International Crisis Group, 2022).

The protection of strategic projects is thus a national priority. For major flagship projects like Reko Diq, Saindak, Gwadar Port, and the CPEC, copious security measures are required to protect the infrastructure, manpower, and foreign investment. But researchers warn that security has to go hand-in-hand with local development, employment, education, dialogue and community engagement for the reduction of conflict and consolidation of social cohesion.

Apart from the traditional threats, Balochistan also has to confront hybrid security threats such as cyber operations, disinformation, economic coercion, transnational crime and information warfare. The provinces strategic importance has raised concerns about foreign intrigue associated with regional geopolitical competition,

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especially regarding CPEC, Gwadar Port, and the development of critical minerals. To secure national interests and to maintain investors' confidence, more robust institutional resilience, intelligence coordination, and regional diplomatic engagement are required to address these challenges (Rana, 2024).

New scholarship calls for a beyond-state-centric approach to human and community security. Better employment, education, health care, infrastructure, transparent governance and equitable benefit sharing may help to decrease local grievances, while community involvement, conflict-resolution processes, safeguarding of local rights, and inclusive decision-making can improve trust and acceptance of local mining projects. Hence, it is concluded in the literature that there needs to be a comprehensive strategy of effective law enforcement, inclusive governance, socio-economic development, institutional accountability and community empowerment to secure Balochistan's critical mineral future (World Bank, 2023).

5. Research Methodology

In this study, a mixed-methods research design was used to explore the dynamics between critical mineral geopolitics, great power competition, local grievances, and security governance in Balochistan. The study was carried out in the select districts: Chagai, Gwadar, Khuzdar, Turbat and Quetta due to their strategic significance and mineral potential. The local communities, government officials, mining experts, policy makers, academics, youth and civil society representatives were the target population. To ensure the selection of informants with relevant knowledge and experience, purposive sampling was applied, and snowball sampling was used to identify informants through the identification of informants' networks in the community and professional areas (Creswell & Plano Clark, 2023).

The semi-structured interview and structured perception-based questionnaire were used as tools to collect primary data. The semi-structured interviews yielded qualitative data that helped to understand the respondents' understanding of critical minerals, governance issues, geopolitical competition, security issues, and local development, and the questionnaire yielded quantitative data that is presented in the findings. Secondary data was collected from government reports, policy documents, academic literature, publications of think tanks, strategic studies and various international databases such as publications of International Energy Agency (IEA), World Bank, United Nations Conference on Trade and Development (UNCTAD), United States Geological Survey (USGS) and Geological Survey of Pakistan.

6. Findings and Discussion

Theme 1: Critical Minerals as an Opportunity

Table 1. Perceptions of Respondents on Critical Minerals as an Opportunity for Socio-Economic Development in Balochistan (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Critical minerals can transform Balochistan's economy.	48.0	35.0	8.0	6.0	3.0	4.19
Mineral development can create employment opportunities.	46.0	36.5	9.5	5.0	3.0	4.18
Foreign investment in mining will benefit the province.	38.5	34.5	14.0	9.0	4.0	3.95
Mining projects can improve infrastructure development.	44.0	37.0	8.5	7.0	3.5	4.11
Mineral resources can strengthen Pakistan's economy.	53.0	31.5	7.5	5.0	3.0	4.27

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The results given in Table 1 show that respondents strongly think that critical minerals of Balochistan are a big opportunity for socio-economic development. More than 80% of the respondents agreed that mineral resources have the potential to change the economy of Balochistan (83.0%) and the national economy of Pakistan (84.5%). Likewise, 82.5% thought that mining projects could create jobs and more than 81% thought that mineral development would result in better infrastructure, such as roads, electricity, health, and education. Such discoveries suggest high expectations about the potential of the province's mineral resources. Attitudes towards foreign investment were, however, relatively cautious, with 73% positive, and expectations of increased transparency, equitable benefit sharing, environmental protection and local participation.

The results are consistent with the international literature, which emphasizes the economic significance of critical minerals. The International Energy Agency (2024) highlights the fact that the demand for copper, lithium and rare earth elements presents giant opportunities for resource-rich nations. The same principle holds true for critical minerals, as the World Bank (2023) suggests that they can stimulate investment, employment and exports, and foster infrastructure, provided they are backed by good governance. According to Ali (2022), strategic minerals also play a significant role in economic competitiveness. Results indicated that respondents are attuned to the economic opportunities presented by critical minerals and the need to implement transparent governance, inclusive institutions, and equitable resource management for sustainable and locally advantageous development (Lee et al., 2023).

Theme 2: Perceptions of Local Communities

Table 2. Perceptions of Local Communities Regarding Mineral Development in Balochistan (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Local communities should be consulted before mining projects begin.	58.0	28.0	6.0	5.0	3.0	4.33
Local people should receive priority in employment.	61.0	25.0	5.0	6.0	3.0	4.35
Mining projects have improved local living conditions.	18.0	27.0	20.0	24.0	11.0	3.17
Local communities receive adequate benefits from mineral projects.	15.0	23.0	19.0	29.0	14.0	2.96
Community participation is essential for sustainable mineral development.	56.0	30.0	7.0	5.0	2.0	4.33

Results show a strong response to need for increased communities' involvement in mineral development. The majority of the respondents felt that the local communities should be taken on board prior to project implementation and local people should be given preference for employment opportunities. The need for community involvement for long-term success of mining projects was also strongly agreed.

But respondents were less satisfied with the benefits they were getting from the existing mining projects. Fewer than half thought that the mineral development has led to an improvement in local living conditions or has brought adequate socio-economic benefits. These findings imply a disconnect between desired outcomes and outcomes of mineral development.

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These findings align with prior research that posits that sustainable mineral governance requires effective community engagement, fair benefit distribution, and employment opportunities within the community (World Bank, 2023). Increasing community involvement can help build trust, grievances and future mining operations can be more sustainable.

Theme 3: Governance Deficits

Table 3. Respondents' Perceptions of Governance Challenges in the Mineral Sector of Balochistan (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Transparency in mineral governance needs improvement.	54.0	29.0	8.0	6.0	3.0	4.25
Local communities have adequate representation in decision-making.	14.0	21.0	18.0	31.0	16.0	2.86
Revenue-sharing mechanisms are fair and transparent.	12.0	20.0	22.0	30.0	16.0	2.82
Government institutions effectively regulate mining activities.	19.0	27.0	18.0	25.0	11.0	3.18
Institutional reforms are needed to improve mineral governance.	57.0	28.0	7.0	5.0	3.0	4.31

The findings reveal that one of the significant challenges to mineral development in Balochistan is governance from the perspective of the respondents. Over 80% felt the need for transparency in the mining sector was great and a similar percentage endorsed institutional changes to improve sector governance. By contrast, rather few respondents felt that local communities get a good representation in decision-making or that current revenue-sharing models are fair.

These results indicate that governance can still be improved, that the public is not sufficiently involved in the management of the mineral resources, and that problems with transparency still exist, which are causing a lack of confidence in the management of mineral resources. Respondents highlighted the importance of strengthening institutions, better accountability, and mineral revenue sharing to achieve sustainable development.

The results align with earlier analyses that clearly demonstrate that good governance, institutional strength, transparency, and inclusive governance are essential to effective mineral resource governance (World Bank, 2023)

Theme 4: Security Concerns

Table 4. Respondents' Perceptions of Security Challenges Affecting Mineral Development in Balochistan (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Insurgency negatively affects mineral development.	56.0	29.0	7.0	5.0	3.0	4.30
Terrorism discourages foreign investment in the mining sector.	58.0	27.0	6.0	6.0	3.0	4.31
Strategic projects require enhanced security measures.	54.0	30.0	8.0	5.0	3.0	4.27

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Human security and community welfare are essential for long-term stability.	60.0	26.0	7.0	5.0	2.0	4.37
Peace and stability are necessary for sustainable mineral development.	64.0	24.0	6.0	4.0	2.0	4.44

The results show that security is one of the most important conditions for successful mineral development in Balochistan. Over 80% said insurgency and terror negatively impact mining activities and deter domestic and foreign investment. The respondents also highlighted the need to ensure security for strategic projects and to create a stable investment climate.

There was the greatest consensus on the statement "Peace and stability are necessary for sustainable mineral development. Respondents also emphasized the significance of enhancing human security and welfare in a community as a key enabler to long-term peace and the mitigation of local grievances.

The results corroborate existing studies that highlight the need for sustainable resource development, which cannot be achieved solely through robust security measures, but must also involve inclusive governance, socio-economic development and community engagement (International Crisis Group, 2022).

Theme 5: Geopolitical Implications

Table 5. Respondents' Perceptions of the Geopolitical Importance of Balochistan's Critical Minerals (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Critical minerals have increased Balochistan's global strategic importance.	57.0	28.0	7.0	5.0	3.0	4.31
Great power competition will increase in Balochistan.	55.0	30.0	8.0	4.0	3.0	4.30
Foreign investment can strengthen Pakistan's economy.	46.0	34.0	10.0	7.0	3.0	4.13
Regional cooperation is necessary for mineral development.	59.0	26.0	8.0	5.0	2.0	4.35
Effective diplomacy can maximize the benefits of critical minerals.	61.0	25.0	7.0	5.0	2.0	4.38

The results show that the respondents are aware of the geopolitical significance of Balochistan associated with the presence of mineral resources. The majority of respondents felt that the demand for critical minerals has raised international interest in the province and will likely drive greater great power competition in the years ahead. Regional cooperation and effective diplomacy to maximise the economic benefit from mineral development was also supported.

There was a positive attitude towards foreign investment, but it was stressed that it should serve the national interest and local communities in Pakistan. The overall results indicate that the respondents view Balochistan as a developing geostrategic area that is not just about mines but also about links and cooperation with the outside world.

These findings are consistent with recent studies highlighting the role of critical minerals in reshaping global geopolitics, strengthening supply chains, and influencing great power

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competition (International Energy Agency, 2024)

Theme 6: Future Opportunities

Table 6. Respondents' Perceptions of Future Opportunities for Sustainable Mineral Development in Balochistan (N = 200)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean
Mineral development can accelerate economic growth in Balochistan.	60.0	25.0	7.0	5.0	3.0	4.34
Local value addition should be prioritized over raw mineral exports.	63.0	24.0	6.0	5.0	2.0	4.41
Investment in technical education and skills development is essential.	65.0	23.0	5.0	5.0	2.0	4.44
Public-private partnerships can improve mineral sector development.	52.0	30.0	10.0	5.0	3.0	4.23
Transparent governance is essential for sustainable mineral development.	67.0	22.0	5.0	4.0	2.0	4.48

The results show that the respondents have a positive outlook on the future of Balochistan's mineral sector if it is supported by transparent governance, local capacity building, and sustainable policies. Almost 90% of respondents believed that mineral resources have the potential to stimulate economic growth and that transparent governance is critical to unlock this potential. High interest was also expressed in the importance of investing in technical education and in favour of local value addition operations rather than the mere export of raw minerals.

Respondents also expressed the need to focus on public-private partnerships, institutional reforms and human resource development to realize the maximum possible benefits of the mining sector in the long run. The results indicate that the respondents consider sustainable governance and local economic participation as the basis for turning mineral wealth into inclusive development.

This aligns with recent literature focusing on the importance of value addition, skills development, transparent governance and inclusive institutional frameworks in conjunction with mineral development to ensure better economic and social outcomes for resource-rich areas (International Energy Agency, 2024; Organization for Economic Co-operation and Development, 2023; World Bank, 2023).

7. Policy Framework: The Way Forward

Governance Reforms

Institutional capacity building – the government should enhance regulatory oversight, accountability and coordination between relevant agencies. Good governance changes will boost the confidence of investors and promote good stewardship of mineral resources.

Establish a Provincial Mineral SWF.

Develop a dedicated Mineral Development Fund, where a fixed percentage of revenues from mineral extraction are allocated to the education, healthcare, infrastructure, renewable energy and community development projects in the mineral producing districts.

Improve research and innovation into strategic minerals.

Special allocation of funding for research into critical minerals, critical supply chains, clean mining technologies, mineral economics and resource governance, for universities, think tanks and research institutions, to enable evidence-based policy making for critical minerals.

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Make Critical Minerals a part of Pakistan's National Security Policy
Critical minerals need to be identified as strategic assets of Pakistan within the National Security Policy, integrating resource governance, economic security, energy transition, industrial growth, and regional peace.

Local Benefit Sharing
Local communities should be given an equitable share of revenues generated by mineral development through a fair and transparent benefit sharing mechanism. It can help build public confidence and foster inclusive economic development.

Community Development Agreements
Mining companies need to enter into Community Development Agreements (CDAs) with local stakeholders before project implementation. The focus in these agreements shall be education, health care, infrastructure and livelihoods.

Local Employment
High employment opportunities within the host communities should be achieved by employing qualified locals. Local hiring policies can be used to enhance public acceptance of mineral development and minimize socio-economic gaps.

Skill Development
Technical and vocational training programs should be expanded to provide local youths with skills needed in the mining and mineral sector. Human capital development will help to decrease the reliance on external workforce and enhance employment opportunities in the long run.

Security Sector Reform
Security measures need to be tied into development projects that account for local grievances and promote community ties. Strategic projects can be safeguarded and long-term peace and stability can be fostered through a well-balanced security strategy.

Public Participation
The engagement of local communities in planning, decision-making, monitoring, and evaluation of mining projects should be actively pursued. Inclusive participation ensures transparency, increases social acceptance and reduces the potential for conflicts.

Federal-Provincial Coordination
For coherent mineral governance and policy implementation, effective coordination between federal and provincial governments is critical. Resource management can be improved, and equitable distribution of development benefits can be achieved through joint decision-making.

International Cooperation
Pakistan needs to bolster its international partnerships to lure responsible investments, new technical expertise and advanced technology in the critical minerals industry. International organizations can also be involved in cooperation to promote environmental standards and sustainable mining practices.

Sustainable Resource Governance
Mineral development should be based on sustainability, transparency, inclusiveness and intergenerational equity. An extensive governance system will contribute to the mineral wealth of Balochistan becoming a permanent source of economic prosperity for future generations.

8. Conclusion

As the world moves towards a future of clean energy and advanced technologies, the strategic importance of critical minerals continues to grow, making regions with these key resources the focus of new geopolitical competition. In this context, Balochistan's importance has been increasing in the international arena due to its rich mineral resources, coastal access to the Arabian Sea, strategic position in the vicinity of the Arabian Sea and the importance of international connectivity projects. The study illustrates the immense potential of critical minerals to boost economic growth, industrial development, employment and foreign

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investment; however, the potential benefits are not without their governance, political and security issues.

The results indicate that overall, local communities are optimistic about mineral development as a tool for socio-economic development, but are concerned about issues of political marginalisation, lack of community participation, limited employment opportunities, lack of institutional capacity, unequal benefit sharing and sustainability. The study also points out issues of governance failures and trust deficit between the communities and state institutions, which are still to be addressed for effective utilization of mineral wealth in Balochistan. Furthermore, rising competition among great powers, including China, the U.S., regional powers, and emerging economies, underscores the province's geopolitical importance and the need for transparent and balanced resource governance to protect Pakistan's national interests.

The study has concluded that sustainable mineral development needs a holistic policy perspective that encompasses economic, national security, environmental and social aspects. To turn mineral wealth into sustainable prosperity, transparent governance, fair mechanisms for distributing revenue, employment opportunities, participation, institutional reforms and coordination between the federal and provincial levels are critical. But human security must be reinforced, and the importance of investments in education, technical skills, health care and infrastructure to make local communities active beneficiaries of mineral development and not passive observers must be emphasized.

In sum, the future of Balochistan's critical minerals hinges on both the availability of these strategic resources and the effectiveness of governance and the capacity of policymakers to reconcile geopolitical interests with local aspirations. Through an inclusive, transparent, and sustainable governance mechanism, Pakistan can utilize Balochistan's vital mineral resources to bolster national economic resilience, facilitate regional connectivity, attract responsible international investments, and support long-term peace, stability, and sustainable development.

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