# EXAMINING THE DYNAMICS OF THE IRAN-PAKISTAN GAS PIPELINE: IMPLICATIONS FOR ENERGY COOPERATION, GEOPOLITICS, AND REGIONAL DEVELOPMENT

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*This study examines the energy cooperation, geopolitical dynamics and regional development implications of the Iran-Pakistan gas pipeline. The study uses a mixed-methods approach to assess the pros and cons of the pipeline. The results show increased energy stability, reduced dependence on LPG, additional energy sources, and lower energy prices. However, the pipeline poses geopolitical risks to Baluchistan's security, political upheaval, economic consequences, regional hostility, and US sanctions. Despite these challenges, the pipeline could reduce gas shortages, temporarily help industry, boost trade between the two nations, improve regional cooperation, create jobs, and reduce unemployment. Building the pipeline requires international cooperation to overcome sanctions, financial incentives, and active participation of regional stakeholders, technological breakthroughs, and international lobbying.*

***Keywords:*** *Iran-Pakistan gas pipeline, energy cooperation, geopolitics, energy security, regional cooperation.*

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## 1. Introduction

Pakistan faces enormous social, economic, and geopolitical problems due to its energy crisis. Pakistan and South and Central Asia depend on natural gas, a cheap source of energy; hence, the Iran-Pakistan and Turkmenistan–Afghanistan–Pakistan–India Pipeline projects are crucial. These initiatives could affect the geostrategic landscape of the region for the Central Asian states. Rajpoot and Naeem (2020) expect the pipelines to boost regional integration, economic interdependence, and cooperation. As a global power, China has transformed international relations in the Middle East, where it has forged new relationships with Iran and Saudi Arabia. Pakistan's complex international relations and geopolitical position are significant. Pakistan's security, domestic politics, economic priorities, and foreign policy are shaped by its significant ties to Iran, China, and Saudi Arabia and its shared border and culture with Iran (Noor *et al*. 2023). Pakistan relies heavily on natural gas. With dwindling domestic reserves and growing demand, challenge of balancing the two is formidable. The baseline scenario anticipates 42.107 MTOE of natural gas consumption; the high-growth scenario doubles this. Despite the 1.5 billion cubic feet per day increase in demand, domestic production will fall from 4 to 2 billion. A long-term solution to this growing supply-demand gap is needed (Shayan *et al*. 2024).

Iran and Pakistan cooperate despite their differences and geopolitical challenges. Financial constraints, security issues, and foreign sanctions hamper bilateral relations (Czulda 2023). After the US withdrawal from Afghanistan, Iran and Pakistan normalized relations. Despite long-standing antagonism due to the Afghan civil war and Saudi-Iranian competition, the two governments have signed various agreements, conducted joint military training, and held regular diplomatic conversations to resolve issues and develop relations (Shah and Ismail 2023). Gas transport, import, and export issues hinder Iran from exploiting these pipelines for energy security (Turkamani 2023). Security concerns, geopolitical interests, and shifting political identities shape Pakistan-Iran relations. Racial conflicts and political initiatives to politicize Pakistan's Shia community have made both sides distrustful of the other, hindering energy and economic cooperation (Karim 2023). In recent years, the population growth and economic development in Iran and its neighbors have increased energy consumption. Abdolahinia *et al*. (2024) suggest investing heavily in fossil fuel power plants, renewable energy sources, and regional energy links to meet this demand. Energy security and regional energy convergence hinder sustainable development in Asia (Rasoulinezhad *et al*. 2023). Pakistan needs reliable energy to boost its economy and make its citizens feel secure. Without gas imports, the mismatch between supply and demand would increase. Therefore, regional climate and security perceptions are crucial (Adnan *et al*. 2023). Rising nations face water and electricity shortages due to population growth and house renovations. Iran has improved its electrical infrastructure and water conservation to become arid nation that can export electricity (Amiraslani and Dragovish 2023). Pakistan's substantial Saudi-Iranian rivalry shapes traditional alliances and geopolitical aspirations. After China mediated a détente between Iran and Saudi Arabia, Pakistan had a greater chance of building long-term commercial ties (Siddiqa 2023). Despite their friendly history, regional instability and sectarianism have damaged Pakistan-Iran relations. Pakistan's security concerns and India's financial investment in the Chabahar port suggest that the two nations may collaborate on CPEC and Chabahar to achieve political and economic

objectives (Khalid and Khan 2020). Regional cooperation depends on the core state and external forces, especially from enormous nations. The nuclear pact and the Indo-US strategic partnership have overshadowed efforts for regional peace and interdependence, notably between Pakistan and India (Naazer 2022). Despite recent geopolitical upheavals like the US breaking out of the nuclear deal with Iran and tensions in the Persian Gulf, the two nations are working to deepen their bilateral ties, focusing on economic and military cooperation (Shah 2022; Fakhar 2023).

Beyond its immediate economic and geopolitical significance, the Iran-Pakistan gas pipeline has the potential to significantly influence regional educational development. The completion of the pipeline is projected to promote financial growth, which, in turn, can improve public sector funding, including education (Ali *et al*. 2023). Economic resilience from energy partnerships can channel government profits toward developing educational infrastructure and increasing access to quality education (Mehdi 2024). This direction is evident in regions where energy-driven transformation catalyzes investment in public assistance, particularly in education (Bukhari *et al*. 2024). Further, as job creation advances due to pipeline construction and functional phases, households may experience enhanced economic stability, allowing for greater access in education and a reduction in youth dropout rates (Shah 2022). Moreover, the strategic alliance between Iran and Pakistan could lead to joint educational programs focused on energy and engineering introspection, handling skill gaps and facilitating specialized expertise among residents (Saira and Javed 2022). Thus, while the pipeline presents challenges, its flourishing enterprise could have far-reaching implications, including strengthening the region's educational opportunities through increased resources, skill expansion, and improved academic participation.

The Iran-Pakistan gas pipeline project exemplifies the intricate web of transnational ties, regional protection, and economic reliance. The pipeline project is politically linked to long-standing geopolitical concerns. In particular, the US embargoes on Iran and their impact on Pakistan's diplomatic posture (Abbas *et al*. 2023). These restrictions hamper international economic trade and the purchase of vital technology, complicating the viability of the project (Czulda 2023). Regionally, the project worries neighboring governments who are wary of increased collaboration between Iran and Pakistan due to shifting alliances and oil competitiveness (Safavi Homami and Iqbal Khan 2024). Internally, the pipeline's route through the province of Baluchistan further complicates problems, since this region has a history of security issues, political unrest, and a desire for local independence (Javaid and Jahangir 2020). These obstacles illustrate the problematic balancing act Pakistan must perform to complete the project without destabilizing its own political system or jeopardizing regional stability. Furthermore, managing these complexities will require multilateral agreements and strategic attention from global players to limit potential dangers and gain worldwide support. These interconnected issues indicate how the pipeline goes beyond its financial importance to become a focal point in regional geopolitics and the monetary system.

The general energy geography of the region, including Iran, Pakistan, and neighboring countries, is defined by its abundance and disparity. Iran possesses some of the world's largest natural gas reserves and is a major energy supplier. Conversely, Pakistan is plagued by endemic energy poverty, which impedes industrial development and financial resilience (Liu *et al*. 2024). This imbalance emphasizes the strategic importance

of energy projects such as the Iran-Pakistan gas pipeline, which has the potential to change regional energy dynamics by fostering energy interdependence and managing supply shortfalls (Naazer 2022). The energy sector is undergoing rapid transformation on a global scale, with an increasing shift from fossil fuels to renewable energy sources as nations strive to achieve carbon neutrality objectives (De La Peña *et al*. 2022). Despite these trends, natural gas remains a critical transitional energy source because of its moderately lower carbon footprint compared to coal and oil (Agyeman and Lin 2022). The pipeline project sits at this convergence, where international environmental objectives are reconciled with regional energy security concerns. The success of the project could establish Pakistan as a more consistent energy consumer, while highlighting the importance of global energy markets, particularly in light of the increased focus on diversifying energy sources and alleviating geopolitical threats (Asghar *et al*. 2023; Maleki *et al*. 2024). This underscores the necessity of balancing the potential benefits of the pipeline with strategic environmental and political considerations that take into account the wider energy context.

This study seeks to understand how the Iran-Pakistan gas pipeline has affected energy cooperation, geopolitics, and regional prosperity. The research aims to determine whether the pipeline can diversify Pakistan's energy supply, stabilize prices, boost energy security, and reduce LPG consumption. It also seeks to identify and assess the geopolitical risks of the pipeline, including security in Baluchistan, political turmoil, economic consequences, regional animosities, and US sanctions. It also assesses the ability of the pipeline to reduce gas shortages, short-term industrial aid, bilateral trade, regional cooperation, employment opportunities, and unemployment. The study emphasizes global cooperation, technological advances, and regional stakeholder involvement to overcome international restrictions and implement the pipeline. To address a knowledge gap, this study uses surveys and in-depth interviews to evaluate how energy cooperation promotes regional prosperity and geopolitical stability.

## 2. Literature Review

The Iran-Pakistan gas pipeline project significant implications for Pakistan's energy environment, regional cooperation, and geopolitical dynamics. Pakistan's energy crises and diversification efforts make the pipeline an attractive choice. Iran depends on the project for economic survival amid geopolitical turmoil and international sanctions. Understanding the multifaceted ramifications of the Iran-Pakistan gas pipeline is crucial for diplomatic relations, regional prosperity, energy security, and economic stability in South Asia and the Middle East. This study reveals these crucial aspects that support policy and strategic decisions. Fakhar *et al*. (2023) focus on border security, energy cooperation, and regional stability as critical issues in the regional dynamics of South Asia and the Middle East. The study emphasizes the need to communicate, negotiate, and cooperate to address issues and make the environment more secure. According to the paper, stronger bilateral partnerships, regional cooperation frameworks, and economic linkages are needed to reduce mutual security concerns and maximize shared opportunities. Despite their cultural, economic, geopolitical, and historical similarities, Pakistan and Iran have faced regional allegiances and security concerns that have hampered their relationship. This study examines current geopolitical developments and possible future Pakistan-Iran relations. Czulda's (2023) study of Iran's geopolitical stance towards Paki-

stan emphasizes the transition from the Muhammad Reza Pahlavi era to the Islamic Republic. The article discusses political, economic, and security cooperation between the two nations. Iran has traditionally valued Pakistan, but a strong strategic alliance often conflicts with its national objectives. Lack of financing, security, and international sanctions have hindered bilateral relations. Collaboration between Iran and Pakistan is inevitable, but the research suggests that they will face geopolitical challenges at home and abroad. Ali (2022) examines how China's Belt and Road Initiative has changed the China-Pakistan Economic Corridor (CPEC). The economic impact of China and India on Iran-Pakistan relations has not been extensively studied. The paper examines Iran-Pakistan relations from the Cold War to the present, including sectarian terrorism, geopolitical shifts, and 9/11. After the nuclear agreement with Iran, the report underlines the need for strong financial institutions in economic cooperation and examines future trade and security implications.

Shah (2023) uses public opinion to address the political and security issues facing Iran and Pakistan in maintaining good relations. Despite these challenges, the survey shows that most Pakistanis want strong relations with Iran. It highlights the importance of both nations in regional and global affairs, given their long and complicated diplomatic ties influenced by sectarianism and conflicts in the Middle East. The complicated relationship between Iran and Pakistan is examined by Jalal and Ullah (2023) following the 1979 Islamic Revolution and the Soviet invasion of Afghanistan. The study covers the Iran-Iraq conflict, Afghanistan's views, and Iran's support for the Mujahideen. Economic issues include trade and the halted Iran-Pakistan gas pipeline. This article offers strategies for developing bilateral relations in a changing geopolitical environment. According to Rafique and Khawar (2023), the recent warming of relations between Iran and Saudi Arabia has influenced Pakistan's foreign policy. This qualitative argument analysis study examines how the evolving views of Iran and Saudi Arabia affect Pakistan's diplomatic, economic, and political decisions. Complex interdependence theory is used to understand how the triangular relationship affects regional politics and economic dynamics, focusing on significant influence of Iran and Saudi Arabia on Pakistan's foreign policy. Hussain *et al*. (2024) investigate China's pragmatic balancing with Pakistan and Iran to secure and develop national self-interest. The study reveals that China's relations with these countries remain robust despite geopolitical shifts. Iran's willingness to support China in the Middle East against the US and its massive oil reserves has led to strategic treaties that do not affect Pakistan or the CPEC. Iranian-Chinese energy and military cooperation is often delayed because of its limited scope. Mansab and Hussain (2023) provide a comprehensive framework for assessing the consequences of the Saudi-Iranian-Chinese alliance for Pakistan and the region. Pakistan may benefit from the political reconciliation between Iran and Saudi Arabia, making the CPEC appear like a great approach to promoting collaboration and growth. Saira and Javed (2022) examine the foreign policy implications for Pakistan of regional energy projects like the IP gas pipeline. Research shows that regional energy projects are needed to solve Pakistan's energy problem. Pakistan has struggled to complete these projects because of internal issues, regional changes, a lack of funding, and external pressure. Pakistani politicians have ignored the study's suggestions to expand connections with energy-rich nations. Hashimi (2021) examines the post-9/11 relations between Pakistan and Iran, emphasizing their shared history and culture. Despite these links, the Cold

War, the Soviet-Afghan War, and the Iran-Saudi Arabia rivalry limit their interaction. Even though there are numerous obstacles, the report argues that recent developments like the CPEC and peace measures in Afghanistan offer hope for greater linkages. Mehmood (2023) analyzes the geopolitical importance of the 'Goldsmith Line,' which divides Iran and Pakistan. According to the research, this route is strategically essential for connecting the Middle East and South Asia since it passes through Baluchistan. The study also considers a greater cooperation in the light of the *joint comprehensive action plan* and the evolving dynamics between Russia and Pakistan.

Zarei and Sadat (2023) emphasize Iran's cultural, intellectual, and political dominance in geopolitics. The study discusses Iran's geopolitical importance and geocultural decline. This research reduces Iran's geopolitical prominence by focusing on its ideological position in global politics and the emphasis on the Islamic Revolution and political Islam. Beidollahkhani (2023) attributes the securitization of Iranian-Pakistani foreign policy to the Arab Spring, the Syrian and Yemeni crises, the Chabahar port, and Sino-Indian relations. Geopolitical necessity and proximity keep relations between the two nations balanced despite their securitized foreign policies. Khalid and Khan (2020) examine the economic links between Iran and Pakistan. Recent developments in CPEC, Gwadar, and Chabahar could damage the political and economic interests of Iran and Pakistan. Both nations benefit politically and economically from working together on these measures to improve trade facilitation, security, transparency, and law and order. Raza (2020) compares Iran and Pakistan to show how changing regional and global politics could restore trust. The study discusses Afghanistan, India's relationship with Iran, the Saudi-Iranian rivalry, and how the US withdrawal from the *joint comprehensive action plan* has affected Iran-Pakistan relations. Munawar and Afzal (2021) examine Iran's Middle Eastern and global strategic relevance in 2021. Research on the Iranian revolution, ideological rivalry with Saudi Arabia, proxy wars, and fear of the US challenges the image of Iran as an irrational, theocratic regime. The findings show that Iran's national interests require the proper management of opportunities and difficulties.

Energy cooperation, geopolitical upheavals, and regional prosperity are complex elements that have received little attention in the literature on Iran-Pakistan relations. To fill this information gap, this research evaluates the effects of the Iran-Pakistan gas pipeline from all angles. This detailed examination of how the pipeline can address geopolitical issues and improve energy security, economic stability, and regional cooperation fills a vacuum in the literature. The study's unique quantitative-qualitative methodology yields deep insights into this crucial topic. Based on the literature cited, the hypotheses of the study are as follows:

***H1: The Iran-Pakistan gas pipeline improves Pakistan's energy security by diversifying energy sources and reducing LPG consumption.***

***H2: Geopolitics, including regional rivalries and international sanctions, hinder the success of the Iran-Pakistan gas pipeline.***

***H3: The Iran-Pakistan gas pipeline boosts regional prosperity and economic stability in Iran and Pakistan.***

The study addresses these assumptions and offers practical insights and strategic advice to help policymakers and stakeholders in the Iran-Pakistan gas pipeline project comprehend its pros and cons.

## 3. Theoretical Framework

### *3.1. Realpolitik Theory*

'Power politics' and realpolitik describe realism in international affairs. According to Bew (2015), Bismarck and Machiavelli founded it, while post-war scholar-diplomats like Henry Kissinger and George Kennan shaped it. Realpolitik advocates the use of force to defend the state and achieve national objectives. Kissinger, Bismarck, Stresemann, and Richelieu supported this realistic alternative to classical realism. Realpolitik requires national interest to trump other values, which can lead to immorality or amorality. Machiavelli believed that when states interact, the norms that govern interactions between people in well-organized states do not apply (Humphreys 2017). Realpolitik suggests that political beliefs can only gain momentum when they align with state power, which is historically contingent and difficult to detect (Kelly 2017). To understand Iran's foreign policy in the 2000s, one must consider its struggle to survive in a fragmented regional system and its attempts to promote regional and national goals while preserving a delicate power balance. This study must examine Iranian capabilities and regional and international systems. Gürsel Fırat Gedikli (2014) suggests that Iran can adapt its foreign policy to respond to critical challenges and opportunities, such as the Arab Spring upheavals. This chapter examines Iranian diplomacy in the aftermath of 9/11 and the Iraq War, up to the election of President Rouhani in 2013. By the mid-2000s, Iran had become a regional power due to its successful regional strategy, increasing oil prices, and the political victories of its allies (Najid 2021).

### *3.2. Global Political Theory*

Geopolitics focuses on how geography impacts global power. The Swedish political scientist Rudolf Kjellén popularized the term in the early 1900s, mainly in connection to World Wars I and II (1918–1939) and the interwar years. Modern discourse conflates geopolitics with international politics (Deudney 2024). Geopolitics is dynamic, making it difficult to develop a strong knowledge base. It may be a social creation or a product of discourse. Geopolitics causes wars and displacements and, despite its abstract nature, has far-reaching political effects. It illustrates how images and imaginations shape politics, and discursive creations become social practices, according to Reuber (2009). Since the two World Wars (1918–1939), classical geopolitics has split from mainstream realist theory, creating a gap between realist theory and practice. These discrepancies make classical geopolitics unsuitable for policy and strategic analysis (Wu 2017). Global geopolitical systems, the geographical dispersion of national interests, and state conflicts underpin classical geopolitical theories. Geopolitical law governs regime emergence, collapse, transition, and major power dominance. According to Hu and Lu (2016), geographers should follow national events, identify national interests, and seize opportunities to influence national regeneration. India and its neighbors need a gas pipeline between Iran, Pakistan, and India to meet growing energy demands. Like the US and other Western nations, energy-poor countries like India, Pakistan, and China compete for gas reserves. Pakistan plans to subsidize its Iranian gas imports to become a major foreign currency earner under the concept of national treatment for FDI, which

protects transit pipelines like domestic ones (Verma 2007). Pakistan-Iran relations are shaped by geopolitics, regional dynamics, and external forces. Ideological disagreements, sectarianism, and alliances have affected their relationship. Geopolitics is the study of how political power and international interactions affect states, their borders, resources, and trade routes. Ideological and religious divisions shape the Middle Eastern geopolitics. Due to its Shia majority, Iran opposes Arab governments that promote unity through partnerships (Nazir 2017). Pakistan's energy crisis is limiting economic growth and needs to be addressed quickly. Pakistan could solve its energy problems by visiting Iran or the CAR, both of which are energy-rich. However, projects like the Iran-Pakistan gas pipeline will soon be crucial. The US-Iran disagreement and sanctions over Iran's nuclear program have created major obstacles. Despite its strategic importance, American officials have urged India and Pakistan to withdraw from the project and seek alternative options (Baloch 2012).

### *3.3. Constructivism*

Constructivism argues that common interests, values, and social conventions unite people together globally. Constructivists study state policy-making and the development of new ideas by norm entrepreneurs, focusing on people's agency to change (McGlinchey 2022). Constructivism has influenced international relations, although its extent is debatable. Constructivism emphasizes social and intersubjective international politics, unlike liberal and realist approaches that emphasize institutional restraints, rational actors, and material constraints (Dormer 2017). The gas pipeline linking Iran, Pakistan, and India illustrates the challenges of energy resource security and how cooperative energy security can be while threatening national security. The realism paradigm fails because of transnational corporations like oil and gas and the need to diversify energy sources for security. International relations theory helps explain the behavior of states, especially ideologically driven governments. Realists believe that individuals act in their self-interest, whereas constructivists believe that ideas influence behavior. Constructivism contextualizes foreign policy and complements realist theory by focusing on concepts of actors. The foreign policies of Iran, Pakistan, and China reflect ideology. In Pakistan and Iran, Islam-based ideologies justify ethical judgments, while Confucianism explains China's pragmatic approach (Bleau 2014). Jack Snyder defines *global realism* as 'self-interested states competing for power and security through coercive power and diplomacy.' Constructivism emphasizes how ideas, culture, social identities, and values impact international politics (Ashley 2012).

## 4. Methodology

The study collected data from university professors and students interested in Pakistan's foreign policy. These participants were selected for their theoretical and practical expertise in Pakistan's foreign policy and relations in order to provide sophisticated and well-informed views. The random sample of university students and professors represents a variety of academic disciplines and academic backgrounds. These are the participating academic institutions and departments – Abbottabad University of Science and Technology (including current and former students and lecturers of International Relations and Pakistan Studies). This group analyzes Pakistan's foreign policy using their understanding of its history, culture, and international relations. Bahria University (Islamabad), Department of Media and Mass Communication also participated in the study.

Their expertise in communication strategies, journalism, and media ethics provides critical insights into the perception and transmission of foreign policy through media channels. The faculty and students at Government Girls Degree College (Havelian, Pakistan) come from several academic disciplines. The inclusion of multiple academic fields underlines how they influence and are influenced by international policy conversations. Targeted readers study English, Political Science, Physics, Economics, Psychology, Mathematics, Urdu, Pakistan Studies, and International Relations. Many active university and college lecturers investigate the study topic in detail. Data was collected through participant interviews and 5-point Likert scale questionnaires. This dual method can be used to study the impact of Iran-Pakistan gas pipeline on energy cooperation, geopolitics, and regional development. Mixed methods research combines quantitative and qualitative data for more reliable results. This study uses qualitative and quantitative methods to analyze the effects of the Iran-Pakistan gas pipeline. The quantitative section assesses knowledge and attitudes using a 5-point Likert scale questionnaire. The qualitative component uses open-ended interview questions to elicit insights from participants. We created five open-ended questions for university professors and students to collect qualitative data on the Iran-Pakistan gas pipeline. The study asked the following questions to invite participants to share their ideas, feelings and opinions:

1. How do you perceive the potential benefits of the Iran-Pakistan gas pipeline for Pakistan's energy sector?
2. What are the major geopolitical challenges associated with the Iran-Pakistan gas pipeline?
3. In what ways could the gas pipeline influence regional development in Pakistan?
4. How do you assess the current state of energy cooperation between Pakistan and Iran?
5. What strategies do you suggest for overcoming obstacles to the successful implementation of the Iran-Pakistan gas pipeline?

A list of variables follows. 'Energy Cooperation,' 'Geopolitical Stability,' 'Economic Benefits,' and 'Infrastructure Development' are the independent variables, while 'Perceived Impact of the Iran-Pakistan Gas Pipeline on Regional Development' is the dependent variable (measured on a 5-point Likert scale). Regional political difficulties have stalled the construction of the Iran-Pakistan gas pipeline, but its economic benefits will more than offset its costs and boost Pakistan's infrastructure growth. The interview questions were purposefully left open-ended to help understand the Iran-Pakistan gas pipeline and its implications. The study created open-ended questions to encourage individuals to share their thoughts, feelings, and experiences. Multiple regression analysis was used to examine the dependent-independent relationships of the Iran-Pakistan gas pipeline. This statistical method allows us to account for other factors and simultaneously assess the effect of numerous independent variables on the dependent variable. We analyzed the data using SPSS to ensure accuracy.

## 5. Result and Discussion

### *5.1. Qualitative Results*

Multiple views allow for a full understanding of how the Iran-Pakistan gas pipeline may affect regional growth. Energy cooperation, economic benefits, geopolitical stability, and infrastructure development were popular topics in the open-ended questions.

The thematic analysis organized and categorized participants' perspectives. Most respondents argued that Pakistan's energy sector would benefit from the Iran-Pakistan gas pipeline as it would provide an alternative to current energy sources. The pipeline could help Pakistan's struggling energy sector by reducing the use of LPG. Many respondents, particularly experts and university lecturers, said the pipeline could improve Pakistan's energy security by diversifying energy sources. The impact of diversification on energy costs could stabilize and manage the national energy market.

Most respondents emphasized that the geopolitical pressure from the US and its Western allies against the project is increasing. With Pakistan already in another IMF program, sanctions aimed at curbing Iran's nuclear ambitions and regional influence could put pressure on the pipeline project to be abandoned. These limitations make it difficult for Pakistan to make financial transactions and investments necessary for pipeline development, which could damage its economy and diplomacy. Political turmoil in Pakistan and Iran complicates the prospects of the pipeline. Government policies and leadership influence Iran's foreign policy. Pakistan's internal security challenges, notably in Balochistan, could threaten the security of the pipeline. Pakistan's diplomatic stance and decision-making are affected by regional adversaries like Saudi Arabia and Iran in the challenging geopolitical atmosphere of the project.

Respondents stressed that the pipeline could reduce winter gas shortages in Pakistan's northern regions, thereby boosting the regional economy. Domestic customers may only benefit from the infrastructure over time. Construction and maintenance of the pipeline are expected to provide many direct and indirect jobs, reducing local unemployment. The availability of energy could boost SMEs, increasing employment and supporting the economy. Improved relations with Iran could increase economic interdependence, boost bilateral trade and regional cooperation, and promote economic integration and stability.

Respondents believe that energy cooperation between Iran and Pakistan has pros and cons. Iran is a vital ally for Pakistan owing to its large natural gas reserves, and both want to strengthen energy ties to satisfy their energy needs. Geopolitical pressures, including US sanctions on Iran, have hindered and impeded the Iran-Pakistan gas pipeline project. Despite this, the two nations are determined to cooperate on energy projects to enhance their economies and regional peace. Protracted debates and delays in pipeline project suggest a lack of energy cooperation and the need for more political will or determined efforts to resist foreign pressures. Insufficient infrastructure and security concerns, particularly in Balochistan, are problems. These issues may require more investment, regional security initiatives, and energy cooperation to incorporate renewable energy projects to reduce geopolitical risks and establish a more sustainable partnership.

The respondents believe that Pakistan should lead international support for the Iran-Pakistan gas pipeline, emphasizing its relevance in alleviating the energy crisis and its economic impact. This will help overcome obstacles to project implementation. The threat of Iranian arbitration needs to be addressed quickly to avoid other foreign verdicts like Reko Diq. It is also necessary to involve regional stakeholders to build support and minimize external pressure. Infrastructure development funds, equitable revenue-sharing agreements, and investment incentives can attract mutually beneficial investments. The pipeline needs new technology to be safer, more efficient, and envi-

ronmentally friendly. Modern monitoring systems, environmental efforts, and construction technologies will require significant investment. The knowledge, financial resources, and reputation of global energy companies and international organizations through international cooperation could contribute to the success of the project and reduce the impact of international sanctions on Iran. Table 1 summarizes the main survey results of the open-ended questions.

*Table 1*

**Main Survey Results of Open-ended Questions**

| Theme | Key Findings |
|---|---|
| Potential benefits of the Iran-Pakistan gas pipeline for Pakistan's energy sector | Enhance energy security, Reduce dependence on LPG, Diversify energy supply, Stabilize energy costs. |
| Geopolitical challenges associated with the Iran-Pakistan gas pipeline | US Pressure and sanctions, Economic repercussions, Political instability, Regional rivalries, Internal security risks in Baluchistan. |
| Iran-Pakistan gas pipeline influence on the regional development | Addressing northern gas shortages. Inadequate domestic infrastructure, temporary industrial sector relief, job creation and unemployment reduction, Stronger bilateral trade relations, regional cooperation and integration. |
| Current state of energy cooperation between Pakistan and Iran | Challenging Energy Partnership Dynamics, Geopolitical Pressure Hinder Progress, Infrastructure and Security Concerns, Diversification of Sustainable cooperation, Mutual interest despite obstacles. |
| Strategies for successful implementation of the Iran-Pakistan gas pipeline. | International Lobbying and Awareness, Economic Incentives and Investments, Technological Advancement and security, regional Stakeholder Engagement Strategy, Global partnership and sanctions mitigation. |

*Source:* authors' survey.

*5.2. Quantitative Results*

Table 2 shows the demographic survey of the responses. With many more women than men, the gender split of the group is 43.4 % men and 56.6 % women. The largest age group is 26–30, with 37.4 % of participants. This closely followed by the 20–25 age group with 34.3 % of the sample. 21.2 % of participants are aged 31–35, while 7.1 % are over 35 years old.

*Table 2*

**Demographic survey of the Respondents**

| Demographic Characteristics | Response Options | Percentage |
|---|---|---|
| Gender | Male | 43.4 |
| | Female | 56.6 |
| Age | 20–25 | 34.3 |
| | 26–30 | 37.4 |
| | 31–35 | 21.2 |
| | More than 35 Years | 7.1 |

*Table 2 continued*

| Demographic Characteristics | Response Options | Percentage |
|---|---|---|
| Educational Background | Undergraduate student | 9.1 |
| | Graduate student | 73.7 |
| | Faculty/Teacher | 15.2 |
| | Other | 2.0 |
| Familiarity with Topic | Not familiar at all | 5.1 |
| | Somewhat familiar | 22.2 |
| | Very familiar | 72.7 |

*Source:* authors' survey.

Graduate students make up 73.7 % of the sample. This group includes 9.1 % undergraduates and 15.2 % professors/teachers. The remaining 2.0 % are classified as other. Only 5.1 % of the poll respondents were unfamiliar with the subject, while most (72.7 %) were familiar with it. This distribution suggests that most individuals understand the issue, with a small minority being uninformed. Table 3 provides descriptive statistics on factors related to the Iran-Pakistan gas pipeline project.

*Table 3*

**Descriptive Statistics of the Variables**

| Variables | Mean | Standard Deviation |
|---|---|---|
| Perceived Impact of the Iran-Pakistan Gas Pipeline | 3.75 | .930 |
| Energy Cooperation | 3.99 | .662 |
| Economic Benefits | 3.94 | .620 |
| Infrastructure Development | 3.66 | .745 |
| Geopolitical Stability | 3.84 | .841 |

*Source:* authors' survey.

Regional growth shows a moderate improvement with high data variability, with a mean score of 3.75 and a standard deviation of 0.930. This suggests a mixed but positive picture of regional development. Energy cooperation has a mean score of 3.99 and a standard deviation of 0.662, indicating high perceived cooperation with low volatility. This indicates a high level of agreement on energy cooperation for the pipeline project. Economic benefits show a consistent and positive perception of economic benefits with little variation. This shows that the economic benefits of the project are generally recognized – Pakistan's infrastructure with a standard deviation of 0.745 and a mean score of 3.66. The responses indicate that the development of pipeline infrastructure is generally well-received, although there is some variability. Geopolitical stability is also significant, with a mean of 3.84 and a standard deviation of 0.841. Views on the future of global political stability are predominantly optimistic; however, views differ. Table 4 shows the regression estimates for quick reference.

*Table 4*

**Multivariate Regression**

| Variables | Standardized β value | t-value | Prob. Value |
|---|---|---|---|
| **Demographic Variables** | | | |
| Gender | 0.002 | 0.017 | 0.987 |
| Age | –0.212 | –1.987 | 0.050 |
| Educational Background | –0.242 | –2.059 | 0.042 |
| Familiarity with Topic | –0.039 | –0.400 | 0.690 |
| **Independent Variables** | | | |
| Energy Cooperation | 0.317 | 3.040 | 0.003 |
| Economic Benefits | –0.122 | –1.190 | 0.237 |
| Infrastructure Development | 0.073 | 0.758 | 0.450 |
| Geopolitical Stability | 1.012 | 4.102 | 0.000 |
| Statistical Tests | | | |
| $R^2$ | 0.581 | | |
| Adjusted $R^2$ | 0.501 | | |
| F-statistics | 3.869 | | |
| F-prob.value | 0.000 | | |

*Source:* authors' estimate.

The relationship between age and regional development is significant (p = 0.050). Younger people are more inclined to embrace regional economic efforts like the Iran-Pakistan gas pipeline. Younger people may be supportive of regional development initiatives because they are more open to new ideas and risk-taking. Regional development can boost future economic growth and energy security, making it easier for younger generations to grasp. Due to concerns about cultural changes, job stability, and other considerations, older people may mistrust regional development plans, which may reduce regional development support. Human capital theory suggests that younger generations invest more in their education and skills, which boosts production and earnings. Thus, they are more inclined to support regional development initiatives that strengthen the economy and create jobs. Older adults may be less involved in regional development because they are risk-averse and prefer to keep what they have. According to a study (Bloom *et al.* 2003), increasing labor supply, which improves employment eligibility, can boost economic output. Realizing the economic growth potential of the demographic dividend requires sound policies, careful investment in human capital and the creation of new jobs. Capitalizing on this transition will boost the economy while failing to do so will miss out on this once-in-a-generation growth potential (Kelley and Schmitt 2005) describe the role of population in economic growth. The framework includes two models: the 'productivity' model explains growth in output per worker, and the 'translation' model converts this into per capita income. In addition to a basic economic model, we include several demographic alternatives: size, density, and dependency. Poot (2008) examines how population aging and immigration affect the innovation, entrepreneurship, and productivity that make a place competitive. Studies show

that immigration, especially of highly educated people and entrepreneurs, improves urban competitiveness, but regional demographic change is often faster and more significant than national demographic change and can significantly affect regional competitiveness. The distribution, size, composition, and growth of a region's population are endogenous to its economic development. The age distribution affects regional development by reflecting the views of older and younger generations on key development initiatives.

Education has a statistically significant effect on regional growth (p=0.042). Higher education professionals are more skeptical about regional economic ventures like the Iran-Pakistan gas pipeline. Because they have polished their analytical skills and have access to a wide range of information, they are more aware of the hazards and obstacles of such initiatives. Education tends to increase the scrutiny of the geopolitical, environmental, and economic implications of regional development plans. They may become more skeptical if they doubt the viability, longevity, and long-term advantages of the initiatives. Naturally skeptical, this population can predict risks and unintended consequences of major infrastructure initiatives. Public officials must address the concerns of educated people to gain support. To inspire trust, be honest about the project's aims, risks, and benefits. Expert presentations, public forums, and thorough studies can help address this group's concerns and secure their support for regional development plans. The signaling theory suggests that education can predict income and productivity. Higher education may make people prioritize their individual interests over regional development objectives because of anxiety about their financial security. According to Di Liberto (2008), increased education enhances growth in the South. Italian growth benefited from the decline in illiteracy in the South in the 1960s. Given that many places in Italy have yet to benefit from higher education ultimately, this conclusion suggests that varying degrees of education affect the pace of economic growth. The US higher education and regional economic success were modeled from 2001 to 2011 (Drucker 2016). Education, especially bachelor's and master's degrees and STEM degrees, is associated with entrepreneurship. These results boost economic growth by supporting universities' teaching and research agendas and entrepreneurial strategies. According to Wixe and Andersson (2016), who define relatedness theoretically, firms and industries can profit from leveraging people. The findings demonstrate that classroom and workplace heterogeneity boosts productivity. Related sector diversification boosts employment but lowers productivity. Regional development is affected by education because individuals with higher education can grasp the dangers and difficulties of such endeavors.

Energy cooperation boosts regional economies significantly ($p = 0.003$). This shows that Pakistan-Iran energy cooperation is essential for regional prosperity. Energy cooperation initiatives can benefit economic growth, energy security, and regional cooperation. An example is the Iran-Pakistan gas pipeline. Energy projects often boost regional growth by reducing geopolitical tensions and increasing economic interdependence. These initiatives improve energy infrastructure and security, which can boost living standards, employment, and economic growth. The Iran-Pakistan gas pipeline can boost industrial development, reduce energy costs, and secure energy supplies. Strategically increasing energy cooperation can boost regional wealth and stability. Political leaders should emphasize strong bilateral agreements, open governance, and social and

environmental repercussions. Using reciprocal and long-term benefits to promote energy cooperation can help in gaining public and political support. Energy cooperation can boost regional growth by reducing transaction costs, providing energy security and integrating economies. Regional expansion, investment, and economic success can benefit. Trade gains and comparative advantage theories propose that cooperation and specializing can boost output and growth. According to Cai *et al*. (2022), green development is essential for developing a beautiful China and revitalizing the country. Green development efficiency in Anhui Province was variable, with most cities scoring medium to high. Some cities have spatial aggregation and high or low green development efficiency. Regional economic growth was favorably and substantially connected with industrial structure, urbanization, and digital economy development. Ali Shahet *et al.* (2020) note that the Belt and Road Initiative (BRI) will affect the geopolitics of energy and infrastructure. A major global energy supply and infrastructure disruption will transform the global energy order. Several areas are attracting international interest in energy cooperation because of their massive natural gas and oil reserves. These include Central Asia, the Arctic, the Eastern Mediterranean, and the South China Sea. The transformation of the energy order change is significant. This development is expected to be driven by the BRI. As part of the BRI, China aims to create a global platform for energy cooperation. Srivastava and Misra (2007) note that the availability of energy is vital to socio-economic growth. South Asia is one of the poorest and fastest growing energy-dependent regions. The region has enormous resource potential and scope for partnership in energy security and sustainable development. Energy cooperation ultimately benefits regional development.

Perceptions of the Iran-Pakistan gas pipeline affect Pakistan's geopolitical stability in several ways. When geopolitics is stable, investors are more willing to fund large infrastructure projects like the pipeline. Investors feel more comfortable investing in these efforts when the global political atmosphere is secure, which promotes support and commitment. Stability improves bilateral relations and makes cross-border initiatives easier, reducing tensions. A reduction in regional tensions makes pipeline development less likely to be halted by political disputes or conflicts. Stability helps strengthen the security and infrastructure needed to protect the pipeline project. Better security and infrastructure boost the pipeline's image and convince stakeholders of its safety and efficiency. Stable geopolitics allow for productive interactions that strengthen Pakistan-Iran commercial and diplomatic relations. Since both countries are more likely to keep their promises and collaborate, optimism about the pipeline has increased. When Pakistan's domestic politics are stable, large projects like the pipeline can succeed with coherent and consistent governance. If stakeholders feel that domestic policies are well managed and stable, the viability and success rate of the pipeline project increases, making it less likely to be shelved. Pakistan's geopolitical stability affects the Iran-Pakistan gas pipeline by encouraging investment, reducing regional tensions, improving infrastructure and security, strengthening diplomatic and economic ties, and ensuring consistency in domestic policy and governance.

## 6. Conclusions

The Iran-Pakistan gas pipeline project presents a unique mix of opportunities and obstacles that go beyond financial gains to encompass consequential geopolitical implica-

tions. Pakistan could become a more resilient energy consumer, and the project could facilitate regional economic integration, which could also preserve the financial partnership and energy security between Iran and Pakistan. However, these benefits are accompanied by substantial geopolitical implications. The pipeline could reshape regional governance systems, escalate tensions with rival states, and attract scrutiny or embargoes from global actors, particularly the United States. Internally, the route through Baluchistan poses security challenges that could exacerbate instability in the province and require strategic management. Consequently, despite the potential of the pipeline to stimulate development, it requires the careful navigation of geopolitical connections and protection strategies to mitigate risks and capitalize on potential progress.

The study evaluates Pakistan-Iran energy cooperation, determines the potential benefits of the pipeline to Pakistan's energy sector, identifies key geopolitical challenges to the project, analyzes the potential impact of the pipeline on regional development, and proposes solutions to project issues. Pakistan, a country with a rich social and political past, hosted the study. College and university lecturers, staff, and undergraduate and postgraduate students were targeted. An examination of open-ended questions suggests that the pipeline that the potential to boost Pakistan's energy sector. These benefits include energy security, reduced LPG consumption, more diverse energy sources, and stable energy prices. The study identified economic consequences, political uncertainty, regional animosities, and Baluchistan's internal security concerns as geopolitical barriers to the Iran-Pakistan gas project. The pipeline could alleviate gas shortages in northern Pakistan, temporarily boost the industrial sector, increase employment, reduce unemployment, and improve bilateral trade and regional cooperation. Pakistan and Iran are collaborating on energy projects, but geopolitical issues, infrastructure and security concerns, and the need for long-term, diverse cooperation remain. For the pipeline to succeed, global awareness and lobbying, financial incentives and investment, technological and security upgrades, regional stakeholder engagement, and global coalitions to mitigate sanctions will be required.

The study analyzes questionnaire data to determine the relationships between independent and dependent variables. The results show that the educational background and age of the respondents significantly affect regional development. Multivariate regression analysis shows that energy cooperation and geopolitical stability are crucial for regional development. The findings suggest that the Iran-Pakistan gas pipeline could boost energy cooperation, regional prosperity, and geopolitics. According to the study, the pipeline could promote economic growth, diplomatic relations, and energy consumption. These factors suggest that strategic cooperation on infrastructure projects can benefit the countries involved. Despite the geopolitical challenges, the study makes short-term policy recommendations to advance the pipeline project. Pakistan's lobbying should focus on technological infrastructure, security in Baluchistan, investment, sanctions relief and international support. Stronger bilateral economic ties and cooperation with Iran are essential for long-term energy partnerships. Medium-term strategies should improve energy cooperation and education. Policymakers should prioritize energy agreements and funding and collaborate across regions to implement them efficiently. Future energy strategies should prioritize long-term industrial relationships. To keep the industry competitive, we need to invest in renewable energy, improve energy infra-

structure, establish long-term international and bilateral cooperation, and use new technologies and innovative methods.

A comprehensive policy strategy is essential to reap the benefits of the Iran-Pakistan gas pipeline while simultaneously addressing its geopolitical risks. To establish peace and prevent potential geopolitical repercussions, Pakistan should engage in proactive, prudent discussions with regional and global stakeholders, with a particular focus on US sanctions. Building strategic partnerships with non-Western nations, including Russia and China, could mitigate Western opposition and ensure the longevity of the project. The pipeline route will be protected, and local resilience will be enhanced through the implementation of internal protection measures, particularly in Baluchistan. This could include initiatives to address socio-economic resentments in the region to mitigate opposition and build societal support. Promoting transparent communication with neighboring countries and advancing the project through regional cooperation could alleviate animosities and build mutual trust. Pakistan must implement these policies to navigate the complex geopolitical landscape and maximize the pipeline's positive impact on regional expansion.

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