



PAKISTAN-POLAND RELATIONS: CHALLENGES AND OPPORTUNITIES

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Abstract

In the 21st century, the world has undergone profound changes, characterized by the emergence of multipolar dynamics. This phenomenon has woven intricate patterns of formal relations among states in a new way, making them more complex and diverse than ever before. As a result, the primary goal of the states in the present political environment is to construct new forms of relationships with other states. In this context, Pakistan and Poland are determined to establish diplomatic, strategic, defensive, economic, social, and cultural ties with each other, all the while taking into account their respective national interests. The diplomatic relationship between Pakistan and Poland traced its origins to 1962; however, this relationship received limited media coverage from both countries during the Cold War era. It was after President Pervez Musharraf's visit to Poland in 2007 that the two countries revitalized their collaboration in various development programs, ushering in a fresh epoch of relations. In today's world, where globalization, multilateralization, diversification of foreign relations, and international integration are prevailing trends, both countries hold vast significance in global politics and international stability owing to their strategic locations. Establishing relations based on mutual understanding, trust, equality, and reciprocity between Pakistan and Poland can play a significant role in promoting peace, prosperity, and stability not only within the two countries and their regions but for the world as a whole. Through mutual cooperation, Pakistan and Poland, particularly Pakistan, can overcome political constraints and successfully achieve their development goals. However, both countries also face several challenges such as national and regional security, human rights violations, terrorism, economic downturns, political discrimination, and regional and international political pressures that can affect their friendly relationship. This research study identifies several new opportunities in various sectors that both countries can gain through mutual understanding and cooperation. It also reveals certain challenges that Poland and Pakistan may encounter. Moreover, the study provides recommendations on how both countries can achieve their development goals through mutual cooperation.



Keywords: Challenges, Multipolar, Opportunities, Pakistan, Poland, Political Relations.

Introduction

The 21st century has begun with profound and substantial transformations, and the emergence of a multi-polarization stands out prominently among these significant changes. As a result, formal relations between states have become increasingly complex and diverse in recent years. In the current political environment, states are making efforts to establish new forms of relationships with other states. While keeping their national interests at the forefront, Pakistan and Poland are engaged in cultivating diplomatic, strategic, defensive, economic, social, and cultural relations with each other in new directions. By establishing relationships founded on mutual understanding, trust, equality, and reciprocity, both nations can play a significant role in advancing peace, prosperity, and stability, not only within their own territories but also for the world at large. In the current era, both states hold significant importance in global politics and international stability because of their strategic locations. Poland is a gateway to Eastern and Central Europe. Its GSP+ status and preferential trade arrangement with the European Union make it easy for Pakistan to sell its goods not only in its own fast-growing market but also in other European markets. According to Mian Fazal Elahi, CEO, Editor, and Publisher of Diplomatic Focus, Poland, a European state, offers an interesting alternative. It provides Pakistan with easy access to European markets while having less competition (Elahi,2019). Similarly, Pakistan serves as a gateway to Central Asia, the Middle East, and Western China, making it a potential partner for Poland to strengthen its social and economic ties with Asian states and explore trade opportunities in the region.

The relationship between Pakistan and Poland is experiencing a progressive expansion in economic and diplomatic spheres, with the potential for further deepening in the years to come. Both countries jointly delve into new opportunities across multiple areas, including textiles, agriculture, information technology, pharmaceuticals, and tourism. Poland has advanced manufacturing technologies that can be used to develop Pakistan's manufacturing sector. In 2020, the trade volume between the two countries surged to \$304 million. Pakistan's exports to Poland were primarily textiles, rice, and leather products, whereas its imports consisted of machinery, chemicals, and pharmaceuticals. In 2022, the trade volume between Poland and Pakistan exceeded €500 million ("Poland Keen to Enhance Trade", 2022). From a diplomatic perspective, these two countries engage in high-level visits, as exemplified by instances like the visit of the Polish Foreign Minister to Pakistan in 2020. At that time, the foreign ministers of both states signed several agreements with a focus on trade, investment, and cultural cooperation. Pakistan and Poland have maintained a cordial relationship in defense and military cooperation for many decades. Both countries have collaborated in a number of military spheres, including military training, joint military operations, and the procurement of defense equipment.

Pakistan and Poland share a rich cultural heritage that holds the potential to foster connections between the people of the two countries. Both countries have a long tradition of artistic expression, which includes music, dance, literature, and the visual arts. Cultural exchanges can provide an



opportunity for people-to-people contact and promote mutual understanding and appreciation of each other's cultures. Pakistan offers a diverse range of cultural and natural attractions, including religious pilgrimage sites, archaeological sites, and scenic mountains, whereas Poland has a rich cultural heritage, including historic cities, museums, and art galleries. Encouraging tourism between the two countries can provide an opportunity for people to experience each other's cultures and promote greater understanding.

Pakistan and Poland's relations also face several challenges that impede the development of stronger ties between them. Both are geographically far apart, with Poland located in Central Europe and Pakistan in South Asia. Owing to their significant geographical distance, it is challenging for these two countries to establish closer economic and cultural ties. This distance also presents logistical challenges for the trade between the two countries. Both countries are members of the World Trade Organization. Despite being members of the World Trade Organization, the economic ties between Pakistan and Poland are relatively weak, which is a major challenge for their economic activities. Both countries have not worked closely together on various international issues, which limits their impact on global affairs. Moreover, Pakistan and Poland have different political systems, which leads to differences in foreign policy and priorities. Pakistan, for example, has traditionally been aligned with China, Afghanistan, and Saudi Arabia, whereas Poland has been closely aligned with the European Union and the United States.

Pakistan and Poland confront security challenges within their respective regions. Poland is faced with the challenge of Russian aggression in Eastern Europe, while Pakistan has been grappling with terrorism and militant behavior for many years. Therefore, at times, security challenges pose a significant obstacle to strong relationships. Pakistan and Poland have religious and cultural differences that pose a great challenge to their relationship. For instance, Poland is a predominantly Catholic country, whereas Pakistan is a predominantly Muslim country. These differences can sometimes lead to tension and misunderstanding between the two states. Moreover, there are various challenges that may adversely affect friendly ties between Pakistan and Poland, including an expanding population, national and regional security concerns, human rights abuses, threats to human security, terrorism, climate change, natural disasters, widespread poverty, and regional or international political tensions.

Background of the Pakistan-Poland Relationship

Despite the vast geographical distance, the first Polish explorers arrived in present-day Pakistan during the Middle Ages. In the 19th century, two Polish researchers, Bronisław Grąbczewski and Jan Gołaszewski, produced the first topographic description of Karakorum and Hunza, with the latter reaching the source of the Indus River. During World War II, Karachi and Quetta extended refuge to over 21,000 Polish war refugees who were evacuated from the USSR by General Władysław Anders' army ("Poland in Pakistan", n.d.). Pakistan gained its independence from British colonial rule on August 14, 1947. The newly installed government requested that the British Air Force pinpoint



the pilots with the highest level of experience and reliability who could aid in the establishment of Pakistan's air force. British experts suggested the inclusion of Polish officers, pilots, and technicians. Responding positively, Prime Minister Nawabzada Liaquat Ali Khan, who was also the Defense Minister, readily accepted the British proposal and extended three-year contracts with lucrative salaries to the recommended Polish officers. As a result, 30 Polish officers, engineers, technicians, and pilots arrived in Pakistan in 1947 (Hali,2020).

The good relationship between Poland and Pakistan dates back to the early 1950s when the state of Pakistan recognized the newly established Polish People's Republic. Both countries established diplomatic relations on December 17, 1962, and the Polish Embassy opened in Karachi in 1962 and later relocated to Islamabad in 1965. The 1962 visit of Pakistan's then-President Ayub Khan to Poland further strengthened the burgeoning relationship between the two countries. In 1969, Pakistan opened its embassy in Warsaw. Over time, a number of agreements were signed, and numerous high-level visits were exchanged to strengthen their bond. During the Cold War era, both countries were members of their respective blocs, with Poland aligned with the Soviet Union and Pakistan being part of the United States' sphere of influence. However, despite these differences, Poland and Pakistan managed to maintain cordial relations. They cooperated in several fields, including defense, trade, culture, education, science, and technology.

During the 1960s and 1970s, both countries enjoyed friendly relations. At that time, a multitude of agreements were signed, and significant high-level visits were also conducted. In the Indo-Pakistani War of 1965, Polish officers played an active role by leading and commanding air operations against the Indian Air Force. General Turowicz, Major Anotnii Zbigniew Jedryzek, and others were honored with Sitara-e-Pakistan by the Pakistani government. Moreover, Turowicz, along with some pilots, was also granted honorary Pakistani citizenship (Piasecka,2012). In 1972, General Turowicz and some other Polish scientists participated in Pakistan's clandestine atomic bomb project. Additionally, Polish scientists aided Pakistan in launching its space program, with General Turowicz serving as the program's technical director in 1967(Piasecka,2012).

Trade relations between Pakistan and Poland flourished during the tenure of Pakistan's Prime Minister Zulfikar Ali Bhutto. On September 25, 1974, the two countries signed a trade agreement aimed at averting double taxation, followed by a maritime trade agreement on January 25, 1975. Additionally, an agreement concerning civil aviation was executed between the two nations on September 30, 1977. During the 1980s and 1990s, Pakistan and Poland had limited cooperation in the fields of science, trade, education, and culture, with no major agreements or initiatives taken between the two countries. However, the relationship between Poland and Pakistan gained strength when Pakistan joined a coalition of countries fighting against terrorism in the aftermath of the World Trade Center attacks.

In the past few years, significant official interactions between Poland and Pakistan have been established. These included President Pervaz Musharraf's visit to Warsaw in 2007, along with the



visits of Foreign Ministers to Warsaw in 2010 and Islamabad in 2011. During the visits, the two sides signed several agreements encompassing economic, defense, scientific, educational, and cultural cooperation. Furthermore, Speakers of the respective Senates made visits to Poland in 2011 and 2013, as well as to Pakistan in 2012 and 2018. In 2018, a defense cooperation agreement was signed between Pakistan and Poland, aimed at strengthening collaboration in military education and training, defense production, and counter-terrorism. Moreover, during the same year, Pakistan's Defense Minister Khurram Dastgir Khan and COAS General Q.J. Bajwa visited Poland, further strengthening the relationship between the two countries. Both countries have started a sequence of dialogues that encompass regular visits and consultations between their respective Deputy Foreign Ministers, the most recent of which occurred in December 2019 ("Poland in Pakistan", n.d.).

Conceptual Framework

Realism, as a theoretical framework, highlights the major role of power and national interests in shaping international relations. When applied to the context of Pakistani and Polish relations, this framework suggests that both countries are more likely to prioritize their own interests over shared values or objectives. However, the cooperation between Pakistan and Poland offers various opportunities across many fields, including trade, defense, investment, and cultural exchange. Pakistan's substantial exports of agricultural and textile products, coupled with Poland's robust manufacturing industry and significant production of food and beverages, create possibilities for both countries to benefit from each other's strengths and expand into new markets through collaboration.

Despite the potential opportunities for cooperation, numerous challenges also exist that could hinder the development of closer relations between Pakistan and Poland. These obstacles include cultural barriers, historical tensions, and political dissimilarities. Pakistan is predominantly Muslim, whereas Poland is predominantly Catholic. This contrast in religious backgrounds could pose challenges to finding common ground on certain issues due to their religious differences. Furthermore, Poland's historical ties with India and Pakistan's alignment with China could also lead to tensions between the two countries. Another obstacle to the development of closer ties between Pakistan and Poland is their respective geographical locations in regions marked by instability and conflict. Pakistan is located in South Asia, an area with several unresolved territorial disputes, such as the Kashmir conflict between India and Pakistan.

Poland is situated in Central Europe, a region that has witnessed escalating tensions in recent years between NATO member states and Russia. This situation poses a major threat to the peace and stability of the region. The challenges arising in the region could potentially impact the bilateral relationship between Pakistan and Poland, making it more complex to enhance their ties. Despite the opportunities for cooperation between the two states, it remains crucial to address major challenges to facilitate the development of a closer relationship. Realism suggests that both states need to be mindful of their interests and weigh them against the possible advantages of strengthening their ties. By doing so, they can find several new ways to collaborate across many sectors, even when facing



challenges and differences.

Literature Review

The bilateral relationship between Pakistan and Poland is an intriguing subject, although it has received limited scholarly attention. Thus, the limited availability of comprehensive studies limits the thorough investigation of the many layers of dynamics that shape this relationship. However, within this framework, the existing literature sheds light on specific critical aspects. The historical relations between Poland and Pakistan have a deep-rooted history, with the events of pre-partition leaving a lasting impact on their relations. After the independence of Pakistan in 1947, Poland played an important role in assisting and enhancing Pakistan's establishment of crucial sectors. Manzoor and Naveed (2023) argue that both countries have the potential to increase trade collaboration in the fields of energy, technology, infrastructure, tourism, oil, and gas. However, robust regional connectivity remains a major challenge. Overcoming this big hurdle necessitates addressing issues such as visa accessibility, immigration procedures, and air connectivity. Pakistan and Poland share multifaceted connections, including diplomacy and commerce. According to Orazio Maria Gnerre (2023), both countries engage in cooperative efforts in the fields of commerce and diplomacy. Despite this cooperation, the key roles that both countries hold within China's Belt and Road Initiative (BRI) have received minimal attention. Poland and Pakistan hold important positions on a continental level due to their geopolitical locations. These influential aspects could be further heightened through enhanced global connections, both interpersonal and commercial, all strengthened by the establishment of the Eurasian infrastructural network.

Poland and Pakistan share several geostrategic challenges. Dashab and Faisal (2023) find that Pakistan and Poland share similar strategic geopolitical challenges due to their respective geographical locations. Both states face the task of dealing with refugee crises, navigating the influence of neighboring states, handling unstable regions, and ensuring security. To reduce these obstacles, it is crucial for Pakistan and Poland to adopt a holistic approach that prioritizes cooperation, diplomacy, and adherence to legal principles. Poland plays a significant role as an import partner for Pakistan. Saeed Nagaria (2018) points out that throughout time, trade patterns between Poland and Pakistan have exhibited variations in the values of imports and exports. Notably, there exists a possibility for further imports from Poland, particularly in sectors such as motor vehicles, medicinal products, and cellular network telephones. These figures underscore Poland's crucial role as a trade partner in imports for Pakistan, offering insights into the intricate dynamics of their trade relationship. The world is constantly changing in the post-COVID-19 period, and new challenges are emerging across the world. To tackle these challenges, countries are cooperating with each other in numerous sectors such as tourism, transportation, and more.

Rosak-Szyrocka Joanna and her fellows (2021) argue that the post-COVID-19 era has witnessed fast growth in areas like courier shipping, parcel lockers, and e-commerce. At the current time, it is necessary for both Poland and Pakistan to focus their attention on enhancing cooperation within the e-commerce sector. Khalid Nadvi and Gerhard Halder (2005) find that low-cost



competition, global standards, and advances in medical technology increase challenges for both clusters. The collective efforts between Poland and Pakistan in these sectors encompass two main dimensions: firstly, they contribute to the formulation of new industrial policies suited to their unique requirements; secondly, this collaboration holds broader implications for shaping regional industrial strategies, thereby exerting a significant influence on the economic dynamics of their respective regions. Organic farming is gaining importance in agricultural practices worldwide. Poland and Pakistan are adopting the shift towards organic farming due to their growing awareness of its positive effects on promoting healthier food production, environmental preservation, and the ability to address agricultural challenges, all while aligning with global trends toward sustainable practices.

Władysława Łuczka and Sławomir Kalinowski (2020) highlight that Polish farmers identify regulatory and institutional factors, along with market aspects, as the key hurdles to the advancement of organic farming. Pakistan and Poland should collaborate in addressing these challenges and promoting organic farming, demonstrating their dedication to sustainable agricultural practices. In Pakistan, poverty remains a pressing issue affecting the country's different socio-economic aspects. Sitara and Warda (2022) argue that it is the responsibility of the Pakistani government to introduce skills development and training programs for less educated people to polish their skills. Such government efforts are crucial in light of the different mega-projects, both on a national and international level, such as the CPEC. To organize skills development and training programs, Pakistan could also consider seeking help from Poland, given its advanced expertise in this area.

Research Questions

- 1- What is the historical context of relations between Pakistan and Poland, and how has this relationship evolved over time?
- 2- What are the opportunities for Pakistan and Poland to enhance bilateral relations?
- 3- What are the key challenges for Pakistan and Poland in the current scenario?
- 4- How can Pakistan and Poland enhance their cooperation to overcome the potential barriers?

Objectives

- 1- To analyze the current and historical state of diplomatic relations between Pakistan and Poland.
- 2- To find opportunities for bilateral cooperation in different fields, such as economy, trade, defense, culture, education, science, and technology.
- 3- To examine the challenges and difficulties in strengthening the relationship between Pakistan and Poland.
- 4- To identify potential areas in which bilateral relations between the two countries can be enhanced and to explore new avenues for mutual cooperation.

Methodology

For this study, the research methodology used is an exploratory review of existing literature on Pakistan-Poland relations, with a specific focus on identifying opportunities and challenges. The



approach taken is descriptive research, which entails the collection and analysis of data from secondary sources. The sources of data include the official websites of Pakistan and Poland, research articles, journals, books, newspapers, magazines, government reports, conferences, and seminars. The purpose of collecting secondary data is to gain a comprehensive understanding of Pakistan-Poland relations and identify opportunities and challenges that may exist in their bilateral relationship. The exploratory review of existing literature involved analyzing the collected data to identify themes related to the research topic. Moreover, the researcher conducted a critical evaluation of the sources of data to ensure their reliability and validity. The study's findings are presented in a clear and concise manner, with appropriate references to the sources of data used.

Findings and Discussion

Although Poland and Pakistan have had a diplomatic relationship since 1962, changes in the political and economic environment around the world have had an impact on their cordial relations. However, in recent years, both states have made efforts to strengthen their bilateral relations, especially in defense, trade, education, science and technology, and cultural exchange.

Opportunities for Pakistan and Poland

There are several opportunities for Poland and Pakistan to enhance their bilateral relations. Some of these opportunities include trade and investment, technology transfer, diplomatic engagement, regional cooperation, international forums, and cultural exchange programs.

Economic Opportunities

Pakistan and Poland have the potential to boost their bilateral trade by promoting two-way trade in services and goods. The trade volume between both countries has consistently stayed below \$370 million over the years. In 2020, Pakistan exported goods worth \$265.5 million, and the bilateral trade balance over the years has consistently favored Pakistan ("Pakistan-Poland Trade", n.d). In an interview, Maciej Pisarski, the Ambassador of Poland to Pakistan, said that the current bilateral trade volume between Pakistan and Poland has exceeded €723 million and that both countries are actively seeking out new opportunities for trade and investment in various sectors, including information technology, food processing, and agriculture. The encouraging news for Pakistan is that Poland currently holds a substantial trade deficit of nearly half a billion Euros, primarily attributed to Pakistan's exports of textiles, sportswear, food products, and leather goods, which significantly surpass Poland's exports. It is mostly owed to the introduction of the GSP Plus trade mechanism, which has facilitated Pakistani exports to the European Union ("Poland-Pakistan Trade Volume", 2023).

On the occasion of Poland's Independence Day, Maciej Pisarski stated that we aim not only to increase the volume of trade but also to broaden and diversify our trade and economic interactions to make it a mutually beneficial relationship where more Polish businesses can operate in Pakistan.



He highlighted that the most valuable aspect of their economic contribution is the contribution of Polish companies, such as the Polish Oil and Gas Company (PGNiG) and Exallo Drilling, to enhancing Pakistan's energy security. PGNiG has invested over \$300 million in gas extraction projects located in Sindh, bringing advanced technology and specialized expertise to provide gas to consumers ("Poland Fast Growing", 2022) Pakistan has immense export potential in the textile sector (home textiles & RMGs), agriculture sector (rice, mango, and dates), leather sector (safety shoes and gloves), ICT services, and manpower exports ("Pakistan-Poland Trade", n.d.). On the other side, Poland holds potential for cutting-edge technologies in the agriculture, energy, mining, healthcare, and food processing sectors. Being a member of the European Union (EU) and a significant manufacturing hub, Poland complements Pakistan's growing consumer market and its abundant natural resources.

There are several opportunities for Polish companies to invest in Pakistan's energy, infrastructure, and agriculture sectors. Similarly, Pakistani businessmen can also explore investment opportunities in Poland's IT, pharmaceutical, and renewable energy sectors. Poland's use of coal as its primary raw material for energy production is an advantage, with its three largest coal mining firms extracting roughly 100 million tons of coal each year. This expertise in coal-generated energy production could prove valuable to Pakistan, which also has vast coal reserves, and potentially lead to coal-based power generation assistance from Poland ("Poland Ready to Help", 2013). Poland is also known for its expertise in advanced technologies such as IT, biotechnology, and renewable energy. Pakistan can benefit from technology transfer from Poland by learning from their experience and adapting their technologies to meet Pakistan's unique needs.

Both countries can promote tourism by highlighting their cultural heritage and natural beauty. Poland is known for its historical landmarks, including medieval castles and Gothic cathedrals, while Pakistan has a rich cultural heritage, including ancient civilizations and religious sites. Through tourism, economic cooperation can be promoted between both countries. Poland, with a population of around 40 million, holds significant stature as the fourth-largest country in Europe. Its sizeable population presents excellent investment opportunities for entrepreneurs. Moreover, the Polish business community can benefit from the improving business landscape in Pakistan, particularly with the proposed development of Special Economic Zones under the China-Pakistan Economic Corridor (CPEC). Poland's strategic location in the heart of Europe makes it a crucial gateway to the European continent. Pakistan's business community can leverage Poland's unique position to gain access to European markets. It is imperative for Pakistan and Poland to establish economic and trade links that can contribute to the peace, prosperity, and progress of both nations.

CPEC and Pakistan-Poland Relations

China's extensive investment in infrastructure development projects in Pakistan under the Belt and Road Initiative, which includes the construction of highways, railways, and ports, has the potential to create new trade and investment prospects for Poland. Pakistan could serve as a gateway



for Poland to access the markets of Central Asia and the Middle East. Addressing Pakistan's severe energy crisis, the China-Pakistan Economic Corridor (CPEC) has included multiple energy projects that aim to resolve this issue. As a result, Polish companies specializing in the energy sector could potentially leverage their expertise to invest in Pakistan and provide technical assistance for these projects. One of the objectives of the Belt and Road Initiative (BRI) is to foster cultural exchange and facilitate people-to-people connections among participating countries. This could potentially serve as a platform for Pakistan and Poland to collaborate on cultural exchange programs and deepen their understanding of each other's cultures. A key objective of the Belt and Road Initiative (BRI) is to promote cultural exchange and facilitate people-to-people connections among participating nations. This serves as a potential platform for Pakistan and Poland to collaborate on cultural exchange programs, fostering a deeper understanding of each other's cultures.

Opportunities in the Defense Sector

There are numerous defense-related opportunities for Poland and Pakistan to enhance their bilateral relations. Chaudhry Ahmad Mukhtar, the former Minister for Defense, stated that Pakistan has consistently emphasized the importance of strengthening defense collaboration with Poland by utilizing various training programs, participating in military exercises, and engaging in defense procurement ("Pakistan, Poland to Enhance", 2012). Pakistan has always acknowledged the significant contributions made by pioneering Polish officers during the early development years of the PAF ("Pakistan, Poland Agree", 2018). The country can never forget the contributions of Wladyslaw Josef Marian Turowicz, who was an engineer and a pilot himself. He established technical institutes in Karachi, revived the Pakistan Air Force Academy, served as head of the Space and Upper Atmosphere Research Commission (SUPARCO), and became Deputy Chief of Air Staff. Under his leadership, many officers and leaders of the Pakistan Air Force received training. He also played an important role in Pakistan's space program and nuclear program. He also participated in the 1965 and 1970 wars. In recognition of his service, Turowicz was awarded prestigious awards such as Sitara-e-Pakistan and Sitara-i-Khidmat. Pakistan will always remember his invaluable contributions ("Pakistan-Poland Relations", 2020). On the other hand, Poland has always recognized and valued Pakistan's positive contribution toward maintaining global and regional peace and stability. Both Poland and Pakistan agree to enhance bilateral relations in different fields, especially defense and security relations ("Pakistan Values its Relations", 2022).

Although Pakistan and Poland have already cooperated in the defense sector, there are still opportunities for further collaboration in this area to enhance their respective defense capabilities and address common security concerns. For instance, Pakistan has significant experience in the development and production of military hardware, particularly in the areas of land-based systems and small arms. Poland, on the other hand, has expertise in areas such as aviation and missile defense. By sharing their knowledge and expertise, the two countries may be able to develop more advanced and effective defense systems. Both countries face similar security challenges, including terrorism and border security issues. By cooperating in the defense sector, they may be able to better address these



challenges and enhance their respective national security.

Poland can provide Pakistan with modern and advanced defense equipment and technology, including aircraft, armored vehicles, and weapons systems. Pakistan can also explore opportunities for co-production and joint development of defense equipment with Poland. Poland and Pakistan can enhance their military training and education programs by organizing joint training exercises and sharing knowledge and experience. Poland can provide training to Pakistani military personnel in areas such as counter-terrorism, cybersecurity, and logistics. Both countries can participate in UN peacekeeping missions and work together to enhance their peacekeeping capabilities.

Political Opportunities for Pakistan and Poland

Pakistani-Polish relations have always been positive, respectful, and friendly, and they are currently enjoying excellent rapport in all sectors. Both countries have a long historical bond, and their current relations are often described as stable and fluid. The relationship between Pakistan and Poland gained further strength when Pakistan joined a coalition of nations fighting against terrorism after the World Trade Center attacks (“Poland in Pakistan”, n.d.). Several political opportunities lie ahead for Pakistan and Poland to further enhance their bilateral relations. For instance, Pakistan and Poland can increase their diplomatic engagement at various levels, including high-level visits, bilateral meetings, and consultations. This can help build mutual trust and understanding between the two countries and pave the way for greater cooperation in different areas.

Although some government officials have made visits in the past. Notable official contacts include the visits of President Pervez Musharraf to Warsaw in 2007 and foreign ministers to Warsaw in 2010 and Islamabad in 2011. Moreover, there were visits by Speakers of the respective Senates to Poland in 2011 and 2013, as well as visits to Pakistan in 2012 and 2018. Currently, Poland and Pakistan enjoy excellent and very cordial relations, with a deep ongoing political dialogue that includes regular visits and consultations between Deputy Foreign Ministers. The most recent of these visits took place in December 2019. In addition, in 2018, Pakistan’s Defense Minister, Khurram Dastgir Khan, and COAS Gen. Q.J. Bajwa both visited Poland (“Poland in Pakistan”, n.d.).

The evolving geopolitical landscape offers numerous opportunities for Pakistan and Poland to collaborate in promoting peace and stability within their regions and on a global scale. This can include cooperation on issues such as terrorism, extremism, and regional conflicts. The 2018 Agreement on Cooperation in the field of defense between Pakistan and Poland is a positive step towards achieving peace and stability in their respective regions and globally. Both countries have been committed to maintaining regional and international peace and stability. Moreover, Poland acknowledges Pakistan’s efforts to establish peace in Afghanistan and extends its full support to the peace process (“Pakistan Poland Relations”, 2020).

Regrettably, both countries have suffered from the adverse effects of appeasement policies by



the international community. The people of Poland faced Nazi aggression during the 1940s, which could have been prevented if the international community had taken prompt action. Similarly, Pakistan is currently grappling with the silence of the international community over the extremist and fascist aggression of the Modi regime, particularly in Kashmir. Pakistan urges the international community to address the Kashmir issue and take appropriate measures toward a peaceful resolution of this humanitarian crisis (“Pakistan Poland Relations”, 2020). Pakistan and Poland can also coordinate their efforts at international forums, including the United Nations, the European Union, the South Asian Association for Regional Cooperation, and other multilateral organizations. This can help promote their shared interests and values on the global stage.

Opportunities in Science and Technology

There are several opportunities for collaboration between Pakistan and Poland in the field of science and technology, with the potential for mutual benefits, innovation, and development. Maciej Pisarski, ambassador of Poland to Pakistan, has stated that the Polish government is interested in enhancing trade with Pakistan in the information technology and agriculture sectors. He also urged for institutional partnerships between universities in Poland and Pakistan in the fields of science, technology, and higher education to identify potential, talented, and skilled students for better outcomes (“Poland Keen to Enhance Trade”, 2022). Pakistan and Poland can cooperate on joint research and development projects in different areas of science and technology, including biotechnology, nanotechnology, information technology, and renewable energy. This can lead to the development of new technologies and products that can benefit both countries.

Both countries can collaborate on capacity-building programs to train and develop human resources in the science and technology sectors. This can include joint training programs for students, exchange programs for researchers, and capacity-building programs for entrepreneurs. Pakistan and Poland can also collaborate to promote innovation and entrepreneurship in the science and technology sectors. This can include setting up joint innovation centers, providing funding for startups, and supporting technology incubators. Moreover, Poland has a strong technology sector, and Pakistan can benefit from technology transfer in different areas, including agriculture, industry, and health. This can help improve Pakistan’s productivity, competitiveness, and quality of life.

Opportunities in the Culture and Education Sectors

There are several opportunities for Pakistan and Poland to collaborate in the culture and education sectors. Poland and Pakistan can develop student exchange programs where students from both countries can study at each other’s universities. This can help promote cultural exchange, improve language skills, and provide exposure to different educational systems. In an interview with *Diplomatic Focus*, Polish Ambassador to Pakistan Maciej Pisarski acknowledged that while educational ties between the two countries are still developing, Poland has become an attractive study destination for Pakistani students.



Pisarski noted a recent increase in the number of Pakistani students at top Polish institutions of higher learning and highlighted the opportunities available to Pakistani students in Poland. For instance, a cricket team named Warsaw Kings, composed entirely of Pakistani players, represents Poland in European competitions. Additionally, several well-known Polish universities have established direct connections with Punjab University and Quaid-e-Azam University. Poland's education system, which follows the Bologna process and has three stages of education (bachelor's, master's, and doctoral), uses the European Credit Transfer and Accumulation System (ECTS). As a result, studying in Poland facilitates the continuation of education in other European countries. Poland has initiated several educational projects in Pakistan, such as setting up primary schools in Kaghan Valley and the Bari Imam area of Islamabad (Elahi, 2019).

Student exchange programs can help promote cultural exchange, improve language skills, and provide exposure to different educational systems. Both countries can collaborate on joint research projects in fields such as science, technology, and the social sciences. This can help foster innovation, promote academic exchange, and provide opportunities for researchers from both countries to work together. The presence of a Pakistan Chair at Jagiellonian University in Kraków, Poland, is a source of great pride for Pakistan, as it signifies recognition and respect for the country's culture and academic achievements. Moreover, it is noteworthy that Polish scholars specializing in Oriental and Inter-Cultural Studies are showing keen interest in the works of Allama Muhammad Iqbal, a celebrated philosopher and poet of Pakistan (Elahi, 2019).

Polish writer, Mrs. Anna Pietraszek, has penned an extraordinary piece of literature, "Freedom under the Pakistani Sky", that takes the reader on a captivating journey. Her work not only reveals the incredible and previously unknown history of the Polish presence in Pakistan over the last seven decades but also vividly brings to life images and evokes emotions that ignite the reader's curiosity. The book details elegant residences in Pakistani cities, quaint villages nestled in the Karakorum and Hindukush regions, daring expeditions to the highest mountains, and enduring friendships between Poles and Pakistanis. This book has made a valuable contribution to promoting the exceptional history shared by both countries, as well as their joint accomplishments and long-lasting friendship, in both Poland and Pakistan. Both sides have the potential to offer scholarships and grants to students, researchers, and academics from each other's countries. This initiative can help to support the mobility of students and researchers, promote academic exchange, and facilitate the sharing of knowledge and expertise. Additionally, Pakistan and Poland can collaborate on professional development programs for educators and administrators. This partnership can help promote the sharing of best practices, provide opportunities for networking, and enhance the quality of education in both countries.

Pakistan and Poland can develop cultural exchange programs where artists, musicians, and performers from both countries can showcase their cultural heritage. This initiative would help to promote cultural understanding, heighten awareness about each other's culture, customs, and values, and foster people-to-people connections. Maciej Pisarski stated that the richness of Polish culture can



be very interesting from a Pakistani perspective. Nowadays, there is a growing trend of Pakistanis pursuing travel, job, and educational opportunities in Poland (Elahi,2019). Harnessing this mutual interest, Pakistan and Poland can organize cultural exhibitions where art pieces and artifacts from both countries can be displayed. These cultural exhibitions could play a pivotal role in promoting cultural understanding between the two countries. Both countries can collaborate on heritage preservation projects to preserve cultural artifacts and sites. This can help increase tourism. Both sides can also organize film festivals where movies from both countries can be showcased. This can help contribute to the advancement of each other's film industries.

Pakistan and Poland can also explore opportunities for cultural cooperation in music and cuisine. Pakistani cuisine is known for its unique blend of spices and rich flavors, while Polish cuisine stands out with its hearty and heavy dishes, which frequently feature ingredients such as butter, cream, and eggs. Polish and Pakistani chefs can cooperate to create fusion dishes that combine the best of both cuisines. Similarly, both countries' musicians can collaborate to create music that combines traditional Polish and Pakistani instruments and styles. The album "Music Without Borders" by Karolina Cicha and Shafqat Ali Khan is an excellent example of this collaboration, which blends traditional Polish and Pakistani sounds. The album showcases how well the two cultures fit together in terms of musical cooperation (Elahi,2019).

Challenges for Pakistan and Poland

Despite the opportunities for cooperation and collaboration between Poland and Pakistan, there are some major challenges that both countries face. These challenges include religious and cultural differences, security concerns, human rights violations, terrorism, climate change, natural disasters, persistent poverty, political pressures, and economic issues.

Challenges in the Areas of Economy, Trade, and Investment

Pakistan and Poland face several challenges in the areas of economy, trade, and investment. These challenges comprise limited bilateral trade and investment, a lack of direct air connectivity, bureaucratic hurdles, and inadequate market information. The volume of bilateral trade and investment between Pakistan and Poland is relatively low and needs to be increased. Both countries also face administrative hurdles in obtaining visas and other necessary documents for trade and investment activities. Both countries have a relatively low level of awareness about each other's economies and investment potential, which can hinder investment and trade activities. Moreover, there are no direct flights between Pakistan and Poland, making it difficult for businesses and investors to travel between the two countries. To surmount these obstacles, proactive measures are imperative. There is a need to take steps towards promoting mutual trade and investment, expanding access to markets, facilitating exchanges between businesses and investors, and improving understanding and knowledge about each other's economies.



Political Challenges for Pakistan and Poland

Pakistan and Poland face several political challenges in maintaining strong bilateral relations. One very prominent and major issue is the absence of consistent high-level political interactions between the two countries. The geographical distance between Pakistan and Poland limits the frequency and intensity of political visits and exchanges. Both countries have different ideologies and political systems, which can create obstacles to building a common agenda. Both countries face external pressure from regional and international actors that can impact their bilateral relations. The human rights situation in both countries has drawn attention and has the potential to affect their bilateral relations. In order to tackle the political challenges faced by Poland and Pakistan, continuous efforts need to be made to improve political dialogue and engagement. This objective can be achieved through the promotion of mutual understanding and respect as well as the joint pursuit of shared goals and interests.

Recognizing and addressing human rights concerns can also play a pivotal role in nurturing a robust and lasting relationship between the two countries. External political pressures from more influential powers or neighboring countries have the potential to influence the relationship between Pakistan and Poland. To address these challenges, both countries can work to strengthen regional alliances and promote stability in the region. Political pressures can also arise from domestic issues, such as elections or public opinion. In these cases, it is important for both countries to respect each other's sovereignty and democratic processes and avoid any actions that could be perceived as interference.

Regional and Global Security Challenges for Pakistan and Poland

Pakistan and Poland face regional security challenges driven by their geographic locations and geopolitical environments. For Pakistan, the regional security challenge arises from its hostile relations with India over the disputed territory of Kashmir. This has resulted in intermittent military clashes and heightened tensions between the two nuclear-armed countries. Pakistan faces threats emanating from terrorist groups operating from its eastern and western borders, including the Taliban and other extremist groups. For Poland, the main regional security challenge comes from its proximity to Russia, which has been increasingly assertive in its foreign policy and military activities.

Poland has also been impacted by the conflict in neighboring Ukraine and the resulting refugee crisis. The rise of nationalist and far-right movements in Europe has raised concerns about the potential for domestic security threats in Poland and the region. Pakistan and Poland also face several global security challenges, such as terrorism, cyberattacks, and climate change. These challenges require joint efforts to develop effective strategies and policies to address them. It is crucial for both countries to enhance cooperation in intelligence sharing, counter-terrorism efforts, and cybersecurity measures. Moreover, addressing the issue of climate change requires joint efforts to promote sustainable development and reduce carbon emissions.



Religious and Cultural Challenges

Pakistan and Poland also face religious and cultural challenges in their relationship. These challenges stem from their different cultural and religious backgrounds, which can lead to misunderstandings and miscommunications. Pakistan is a predominantly Muslim country, while Poland is predominantly Catholic. These differences can lead to misunderstandings and tensions between the two countries. Bringing religious leaders and representatives from both countries together can help promote interfaith dialogue and understanding, which can contribute to overcoming the religious challenges faced by Pakistan and Poland. It is also important to promote religious tolerance and respect for each other's beliefs to overcome the religious challenges faced by both countries. Pakistan and Poland also face cultural challenges that can sometimes strain their relationship. These challenges arise due to the differences in customs, traditions, and ways of life between the two countries. To address cultural challenges, promoting mutual understanding and fostering cultural exchanges between Pakistan and Poland becomes paramount. This can be accomplished through various initiatives, such as organizing cultural festivals, art exhibitions, and educational exchange programs. Fostering cultural diversity and respect for each other's cultures can help build a more inclusive and harmonious relationship between the two countries.

Challenges in the Education and Advanced Technology Sectors

Both Pakistan and Poland face challenges in the education and advanced technology sectors. In Pakistan, there is a need to improve the quality of education and increase access to education, particularly for girls and marginalized communities. There is a need to promote research and development and invest in advanced technology sectors such as information technology, biotechnology, and renewable energy. In Poland, there is a need to address the brain drain and retain highly skilled professionals within the country. It is essential to support and promote innovation and research in cutting-edge technology sectors such as artificial intelligence, robotics, and clean energy. Collaborative efforts between Pakistan and Poland in these areas have the potential to yield shared advantages, fostering economic growth for both countries.

Human Rights Violation

Human rights violations present a big challenge for Pakistan and Poland, as both countries have faced criticism from the international community regarding their records in this area. In Pakistan, various incidents of extrajudicial killings, disappearances, and restrictions on the media and freedom of expression have been reported. In Poland, concerns have arisen regarding the independence of the judiciary, media freedom, and discrimination against minority groups. Addressing human rights violations is crucial to promoting a strong and sustainable relationship between the two countries. Both states must undertake measures to ensure the respect and protection of their citizens' human rights. This endeavor can be done by promoting transparency, accountability, and the rule of law, along with engaging civil society and international human rights organizations to



address the issues that arise.

Conclusion

Poland and Pakistan have always tried to maintain cordial relations marked by mutual understanding, respect, and cooperation in various fields. However, this relationship has not been extensively developed to its full potential. Both countries established diplomatic relations on December 17, 1962. Despite establishing diplomatic relations, the friendly relations between Pakistan and Poland were not highlighted by their respective media during the Cold War era. Although both countries had limited relations in this era, there were several instances of high-level visits and signed agreements between Poland and Pakistan aimed at promoting friendly relations between them. In 2007, after the visit of President Pervez Musharraf to Poland, both countries opened a new chapter of cooperation encompassing different development programs. Poland's GSP+ status and preferential trade arrangement with the European Union facilitate Pakistan's ability to sell its goods not only in its own fast-growing market but also across other European markets. Similarly, Pakistan's strategic location makes it an attractive market for Polish businesses aiming to expand their reach in the region. Both countries hold immense potential to enhance economic and trade cooperation.

Pakistan can offer a substantial market boasting a population of over 200 million people, while Poland can offer Pakistan access to cutting-edge technologies, particularly in the energy, agriculture, and food processing sectors. Moreover, Pakistan has shown interest in Polish investment, especially in the healthcare, mining, and energy sectors. A multitude of trade opportunities exist between Pakistan and Poland, spanning industries such as textiles, chemicals, pharmaceuticals, machinery, technology, energy, and agriculture. In the defense sector, both countries have the potential to explore several opportunities for cooperation. These include defense industry collaboration, joint defense procurement endeavors, participation in peacekeeping operations, counterterrorism initiatives, joint military operations, and the exchange of specialized expertise. Pakistan and Poland believe in democracy and also hold similar perspectives on regional and global challenges.

Both countries have the potential to cooperate with the aim of promoting peace and stability in their respective regions. Being active members of the United Nations, they can jointly address an array of global issues, including human rights, sustainable development, climate change, and various other issues. Poland and Pakistan also have the opportunity to engage in cooperative research projects across different fields like nanotechnology, biotechnology, and renewable energy. Poland's prowess in advanced technologies, such as biotechnology and information technology, presents a great opportunity for Pakistan to benefit from this expertise through the importation of advanced technology from Poland. Poland and Pakistan can explore numerous opportunities for cooperation in the fields of education and culture. These opportunities include student exchange programs, scholarship programs, research collaborations, language training, cultural events, cultural exchange programs, sports exchange programs, and volunteer exchange programs.



In spite of the potential for cooperation, there are some challenges that could impact the relationship between Pakistan and Poland. Due to the substantial geographical distance between them, communication and logistical challenges can arise. The trade volume between both countries is relatively low. Such a circumstance could potentially curtail prospects for economic collaboration and may impact the inclination of enterprises to invest in one another's countries. Both Pakistan and Poland have had a history of political instability, and while Poland has managed to overcome this issue, Pakistan still faces it, resulting in ongoing uncertainty. This situation has led to a reluctance among investors to conduct business in the region.

A lack of awareness about each other's traditions and cultures can hinder people-to-people contacts and also impact the ability to establish robust and long-lasting partnerships. The language barrier is another challenge for both countries' friendly relationships. Overall, while there are numerous opportunities for collaboration between Poland and Pakistan, there are also many challenges for both countries that urgently need to be addressed to foster stronger relations between the two states. In order to achieve their shared goals of peace, prosperity, and growth, both states must focus their attention on establishing trust and enhancing mutual understanding.

Recommendations

- Pakistan and Poland should seek out novel trade and investment opportunities to boost economic cooperation. This can be accomplished through expanded bilateral investments and trade, organized business delegations, and collaborative ventures.
- Both countries should promote exchange programs for educationalists, students, scientists, and researchers to share knowledge and experience in the fields of science and technology. This can include scientific conferences, visiting professorships, and research internships.
- Pakistan and Poland ought to promote technology transfer initiatives to foster innovation and enhance competitiveness. This can be accomplished by establishing licensing agreements, sharing patents, and engaging in joint ventures.
- In order to promote collaboration and resource sharing, it is imperative to establish partnerships between scientific institutions and research centers in both Poland and Pakistan.
- Both countries should increase diplomatic interactions at all levels, including business, government, and civil society. This can help identify new opportunities for collaboration and address any outstanding issues.
- Both countries should explore opportunities for joint infrastructure development projects. Infrastructure development can help improve connectivity and transportation, making it easier for both countries to promote tourism and conduct business.
- Pakistan and Poland should collaborate on counterterrorism, anti-corruption efforts, and intelligence. Regular security dialogue can help build mutual understanding and trust.
- Cultural exchange programs help promote mutual understanding and strengthen people-to-people contacts. Therefore, both countries should explore opportunities to showcase their respective cultures through joint exhibitions, exchange programs, and cultural festivals.



- Both countries should promote faculty and student exchange programs at each other's universities to foster collaboration and the sharing of knowledge and expertise.
- Pakistan and Poland should collaborate on curriculum development in areas such as business education, language learning, and cultural studies to prepare students for international business opportunities and cross-cultural communication.
- Both sides should encourage language exchange programs in educational institutions to help people learn languages and learn about other cultures.
- Pakistan and Poland should create translation services and tools to make it easier for people to talk to each other and share information. This can include professional translation services and online translation platforms.



References

- Afridi, Manzoor., & Anjum, (2023). Pakistan-Poland Economic Relations and Regional Connectivity: Challenges and Opportunities. *Journal of European Studies*, Volume 39 (2), pp, 13-28.
- Annus, Dashab., & Javaid, Faisal. (2023). Analysis of Geopolitical Dilemmas: A Case Study of Pakistan and Poland. *Journal of European Studies*, Volume 39(2), pp. 29-42.
- Bibi, Sitara & Jamal, Warda Najeeb Jamal Najeeb. (2022). The Effectiveness of China-Pakistan Economic Corridor in Pakistan: Local Citizen's Perspective. *South Asian Review of Business and Administrative Studies*, Vol 4(1), pp.75-86.
- Elahi, Mian Fazal. (2019). Polish-Pakistani Relations have always been Friendly, Positive & respectful. *Diplomatic Focus*, Volume 10 (1), pp.1-32. Retrieved February 27, 2023 from <https://diplomaticfocus.org/wp-content/uploads/2020/05/Special-Supplement-on-Poland.pdf>.
- Gnerre, Orazio Maria. (2023). Poland and Pakistan as Hubs of the Belt and Road Initiative. *Journal of European Studies*, Volume 39(2), pp.1-11.
- Hali, S. M. (2022, March 24). Polish Contribution to PAF and its Air Transport Command. *Business Recorder*. Retrieved March 6, 2023 from <https://www.brecorder.com/news/40210631/polish-contribution-to-paf-and-its-air-transport-command>.
- Łuczka, Władysława., & Kalinowski, Sławomir (2020). Barriers to the Development of Organic Farming: A Polish Case Study. *Agriulture*, 10 (536), pp.1-19.
- Nadvi, Khalid., & Halder, Gerhard. (2005). Local Clusters in Global Value Chains: Exploring Dynamic Linkages between Germany and Pakistan. *Entrepreneurship and Regional Development*, Volume 17(1), pp. 339-363.
- Nagaria, Saeed. (2018). Poland –Pakistan Trade. *Centre of Excellence in Responsible Business. Pakistan*. Retrieved May 12, 2023 from <https://policycommons.net/artifacts/1782638/poland/2514185>.
- Pakistan, Poland Agree to Enhance Defense Cooperation. (2018, October 18). *The ARY News*. Retrieved March 3, 2023 from <https://arynews.tv/pakistan-poland-agree-to-enhance-defence-cooperation>.
- Pakistan Poland Relations: Pursuing a Collaborative Future. (2020, February 12). *Muslim Institute*. Retrieved March 6, 2023 from <https://www.muslim-institute.org/newsletter-seminar-pak-poland-relationship.html>.
- Pakistan, Poland to Enhance Defence Cooperation. (2012, April 13). *Business Recorder*. Retrieved March 6, 2023 from <https://www.brecorder.com/news/3973919/pakistan-poland-to-enhance-defence-cooperation-201204131177240>.
- Pakistan – Poland Trade Relationship. (n.d.) *Trade Development Authority of Pakistan*. Retrieved March 2, 2023 from <https://tdap.gov.pk/wp-content/uploads/2022/03/Pak-Poland-Wrap.pdf>.
- Pakistan Values its Relations with Poland: COAS. (2022, July 28). *Pakistan Today*. Retrieved March 12, 2023 from <https://www.pakistantoday.com.pk/2022/07/28/pakistan-values-its-relations-with-poland-coas>.
- Piasecka, Agnieszka. (2012, March 12). *Zofia and Władysław Turowicz – Pakistanis By Choice. My Bit For Change*. Retrieved February 26, 2023 from <http://www.mybitforchange.org/2012/zofia>



and-wladyslaw-turowicz-pakistanis-by-choice.

Poland In Pakistan. (n. d.). gov.pl: Website of the Republic of Poland. Retrieved March 9, 2023 from <https://www.gov.pl/web/pakistan-en/bilateral-relations>.

Poland Fast Growing Market for Pakistan. (2022, December 3). The Express Tribune. Retrieved March 5, 2023 from <https://tribune.com.pk/story/2389247/poland-fast-growing-market-for-pakistan>.

Poland Keen to Enhance Trade with Pakistan in IT, Agri Sectors: Ambassador. (2022, January 8). Daily Times. Retrieved March 3, 2023 from <https://dailytimes.com.pk/865771/poland-keen-to-enhance-trade-with-pakistan-in-it-agri-sectors-ambassador>.

Poland Ready to Help Pakistan Generate Power Through Coal. (2013, February 13). The Nation. Retrieved March 6, 2023 from <https://www.nation.com.pk/20-Feb-2013/poland-ready-to-help-pakistan-generate-power-through-coal>.

Poland-Pakistan Trade Volume Reaches over €723m: Polish Ambassador. (2023, February 12). Pakistan Today. Retrieved March 2, 2023 from <https://www.pakistantoday.com.pk/2023/02/12/poland-pakistan-trade-volume-reaches-over-e723m-polish-ambassador>.

Szyrocka, Joanna Rosak., Abbas, Ali Abdullhassan., Akhtar, Humair., & Refugio, Craig. (2021). Employment and Labour Market Impact of Covid-19 Crisis: Analysis in Poland. *Sciendo*, volume 3(1), pp. 108-115.