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The Economic Landscape: Circumnavigating Global Challenges in a Post-Pandemic World

^a Dr. Abid Rashid Gill

^a Editor-In-Chief, Pakistan Journal of Economic Studies (PJES) & Chairperson, Department of Economics, the Islamia University of Bahawalpur Pakistan

Email: abid.rashid@iub.edu.pk

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Corresponding Author's email address: abid.rashid@iub.edu.pk

The COVID-19 pandemic had a severe blow to the global economies in the 2019-20s, and the repercussions are still reverberating in 2024. Moreover, Inflationary pressures, unemployment, disruption in the global supply chain, and environmental issues have cast a shadow over the global economies. To navigate these uncertainties, the government must urgently formulate effective economic policies. Understanding these issues and their long-run implications is crucial to frame a more resilient and sustainable framework.

Inflation is one of the most critical economic challenges that has been prevalent in the post-COVID-19 period around the globe. The disrupted supply chain could not match the surge in consumer demand. Moreover, fiscal stimulus by different governments led to increased prices in various sectors of the economy: food, energy, housing, and healthcare. The central banks responded by tightening monetary policy. These measures also stifle economic growth, reduce private investment, and increase the debt burden for governments and individuals.

The key challenge for central banks is to frame measures to curb inflation without unduly hampering economic growth. This task is exceptionally intricate as different sectors of the economy respond to policy measures in diverse ways. The potential for stagflation: rising inflation and rising unemployment add another layer of complexity, making the task of policymakers increasingly challenging.

Energy transition driven by climate changes and global warming is another critical challenge that global economies face. Climate change damages have pushed governments to adopt decarbonization policies: taxing fossil fuels and subsidies to renewable energies. This transition has both opportunities and challenges for global economies. Green energy, such as solar and wind, and green technologies, such as electric vehicles, are expected to displace millions of workers in the coming decades. The traditional energy sectors, coal, oil, and gas, which are crucial to many economies, will face significant pressures: employment losses, export losses, and tax revenue losses.

Geopolitical sanctions and trade rows between China and Western countries have disrupted the global supply chain and business confidence. Due to subsidy issues, the USA vows to increase tariffs on Chinese exports. These sanctions have led to a decoupling of supply chains in critical sectors such as semiconductors, telecommunications, and pharmaceuticals.

Moreover, technological growth, specifically in automation and artificial intelligence (AI), is reforming labour markets. These innovations can increase productivity and generate new industries. However, they

also raise concerns about job displacement and inequality. Low- and middle-skill jobs are increasingly at risk, while high-skill jobs that entail creativity, critical thinking, and technological expertise are in greater demand than ever. To address these challenges, governments and businesses must invest in education, training, and reskilling programs to prepare workers for the jobs of the future.

Policymakers and businesses must actively seek academic research input to adapt to new economic realities and foster sustainable growth. This collaboration is beneficial and essential for navigating the complex economic landscape. In this regard, The Pakistan Journal of Economic Studies (PJES) invites meaningful and impactful research to be published in its upcoming issues. The Economic Landscape: Circumnavigating Global Challenges in a Post-Pandemic World.

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Moreover, technological advancements, specifically in automation and artificial intelligence (AI), are reforming labor markets. These innovations can increase productivity and generate new industries. However, they also raise concerns about job displacement and inequality. Low- and middle-skill jobs are increasingly at risk, while high-skill jobs that entail creativity, critical thinking, and technological expertise are in greater demand than ever. To address these challenges, governments and businesses must invest in education, training, and reskilling programs to prepare workers for the jobs of the future.

The world economies are at a critical juncture, facing inflation, energy transitions, geopolitical tensions, and technological disruption. Though these challenges are daunting, they also present opportunities for innovation, cooperation, and resilience.

Policymakers and businesses must actively seek academic research input to adapt to new economic realities and foster sustainable growth. This collaboration is not just beneficial but essential for navigating the complex economic landscape. In this regard, The Pakistan Journal of Economic Studies (PJES) invites meaningful and impactful research to be published in its upcoming issues.



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Beyond Economics: The Politico-cultural Implications of Chinese Economic Engagements with Pakistan

^a Abdul Ahad, ^b Abeeda Qureshi

^a MPhil Scholar, Forman Christian College (A Chartered University), Lahore, Punjab, Pakistan. Email: akkhan3734@gmail.com

^b Assistant Professor of Political Science, Forman Christian College (A Chartered University), Lahore, Punjab, Pakistan.

Email: abeedaqureshi@fccollege.edu.pk

ARTICLE DETAILS

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ABSTRACT

Objective: This study intends to explore the possibility of politico-cultural implications of Chinese economic engagements with Pakistan in the wake of CPEC.

Research Gap: The economic engagement between Pakistan and China has achieved a flamboyant zenith in the wake of the Chinese One Belt One Road (OBOR) and one of its flagship projects: the China-Pakistan Economic Corridor (CPEC). While several researchers have highlighted the potential positive and negative aspects of this engagement, there is a lack of research exploring the possibility of politico-cultural implications of these engagements.

Design/Methodology/Approach: Qualitative content analysis of the existing literature on Chinese economic engagements with South East Asia and Africa, and of the salient features of Chinese economic engagements with Pakistan.

The Main Findings: Chinese economic engagements around the world and with Pakistan are not strictly limited to the economic sphere and there can be various politico-cultural implications.

Theoretical / Practical Implications of the Findings: Employs theoretical framework of neo-colonialism and Marxist theories of imperialism for the scrutiny of Chinese economic engagements with Pakistan. It paves the way for future field researches on politico-cultural implications of Chinese economic engagements with Pakistan till date and their critical scrutiny.

Originality/Value: Unlike both overoptimistic and reactionary analysis of Chinese economic engagements with Pakistan, this research attempts to theoretically examine various dimensions of these engagements.



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Corresponding Author's email address: akkhan3734@gmail.com

1. Introduction

Though China and Pakistan are set apart due to many political and ideological differences, e.g., China became independent after the communist revolution, and Pakistan committed itself to Western models of popular democracy. However, these ideological differences get in the way of maintaining cordial ties. This process continued unhampered, even when Pakistan overtly sided with the Western bloc on many ideological fronts, even though the Western block did not recognize China (Sattar, 2010). Pakistan helped America open up to China in the 1970s.

China has also provided loan facilities to Pakistan at critical junctures in its economic history. Contrarily, Pakistani relationship with the Western block, with the US as its leader, have encountered frequent highs and lows (Hussain, 2016). However, a strong perception exists in Pakistan that the USA had embraced Pakistan when needed it, and

abandoned Pakistan when it did not need it anymore. The US interest in Pakistan has also varied over time (Sunawar & Coutto, 2015). This perception resulted in the rise of anti-US sentiments in Pakistan.

China also seems ready to engage with the world more than it has ever done in the past. The Chinese One Belt One Road (OBOR) initiative is one of its textbook examples. A project of Chinese initiative, known as the China-Pakistan Economic Corridor (CPEC), envisages economic activities with Pakistan (Kayani et al., 2013). It is a multi-billion dollar project; which, in its first phase, seeks to develop infrastructure and economic zones in Pakistan.

Some think-tanks and scholars are critics of Chinese economic engagements with the world, which they see as a tacit imperialist project (Muhammad et al., 2017; Lampert et al., 2014; Lumumba-Kasongo, 2011). To support their argument with evidence, they often rely on examples such as the Chinese economic engagement with Sri Lanka (Iqbal & Javaid, 2020). As a prime example of what they commonly refer to as the Chinese debt trap, they often cite the example of Sri Lanka's Hambantota Port, when China initially invested more than 2 billion USD in the Hambantota Port development project. This port and its loss led Sri Lanka into heavy debt of USD 8 billion to China. In a 2016 agreement, Sri Lanka inevitably had to sell 80% of the shares in the port to China for a 99 year lease, the remaining 20% of shares remaining with the Sri Lankan Port Authority (SLPA). Critics see this as a classic example of Chinese imperialistic design (Patrick, 2017). Indicating concern over the nature of Chinese economic relations with other countries, they highlight the subtle imperialist potential of these activities.

In the wake of China Pakistan Economic Corridor (CPEC) projects, China is engaging extensively with Pakistan and many Chinese are coming to Pakistan, starting businesses here. Similarly, many Pakistani students are enrolling in Chinese universities. With this exchange of people, there are plenty of cultural exchange opportunities. Hundreds of students are travelling to the larger Chinese learning institutes every year for educational purposes, and there is a mushrooming of Chinese culture inspired by the Confucius Institutes in Pakistani universities, such as a Chinese TV show named 'Beijing Youth' which is being broadcast on Pakistan's national television (Asif et al., 2021). Many scholars have declared the increase in cultural exchange opportunities as imperative for the success of CPEC, and have suggested potential novel methods of broadening the scope of these cultural exchange opportunities (Jiqiong & Keyu, 2017).

China has maintained that it has never been a colonial power in history and has been the victim of colonialism (Budd, 2021). A group of scholars suggests that China had been the subject of semi-colonialism or quasi-colonialism. Although the territory remained Chinese property, the influence of foreign presences and foreign enclaves, e.g., the British and the Americans, was very effective. This group maintains that with the Treaty of Nanking in 1842, discrimination against China started, and a semblance of semi-colonialism developed in China (Osterhammel, 1986; Goodman et al., 2012). In this semi-colonialism, although China was able to maintain its territory, and Chinese cultural values were less infringed upon when compared to other colonies, there was still a visible atmosphere of imperial control. These included, but were not limited to, the growth of foreign territorial enclaves which were beyond Chinese jurisdiction; discrimination against natives in areas of foreign settlement; stationing of foreign troops within China's mainland; and unfavorable loans and indemnities to be paid as a result of defeats of the Chinese armed forces (Osterhammel, 1986). This colonial experience of China is also sometimes explained as the cause behind the recent close contact of the underdeveloped world with China, and to explain why the global south views China differently from the West (Maru, 2019).

Pakistan emerged out of British India, that was part of a colonial empire. Colonial forces and mentalities played crucial roles in the formation of Pakistan and its future development (Wilder, 2009). Pakistan's decision to side with the Western camp in the cold war resulted in the continuation of a Western influence (Sunawar & Coutto, 2015). This post-independence Western influence was multi-dimensional. However, a plethora of literature highlighted imperial connotations and tried to make sense of them with the help of neo-colonial theory (Shabbir, 2019). At the same time, Pakistan has been a close ally of China and has moved closer to China in recent years. With an increase in the economic strength of China, its economic engagements with Pakistan have also increased (Allauddin et al., 2020). As these engagements are asymmetrical in nature, there exists academic suspicion over the motives of Chinese economic engagements in other regions of the world; and while some existing literature has also tried to question Chinese economic engagements with Pakistan, it is imperative to explore them and their

perception in detail. There are two primary questions to explore: (i) how can the Chinese economic engagements with different parts of the world be studied in terms of imperialistic designs? and (ii) what do Chinese economic engagements with different parts of the world indicate about the politico-cultural implications of Chinese economic engagements with Pakistan? The objectives of this research are to highlight potential politico-cultural implications of Chinese economic engagements, and to subject these engagements and their impacts to critical scrutiny.

Qualitative content analysis of the available academic literature and critical theoretical frameworks are employed and conclusions are drawn from the evidence inferred from them. The following paragraphs provide a detailed account of relevant critical theories for understanding Chinese economic engagements, and this account is followed by an analysis of Chinese economic engagements with Africa, South East Asia and finally, Pakistan.

2. Problematizing China as a Neo-colonial Power

2.1 Critical Theory

With the help of critical theory and theories of economic imperialism, this research deconstructs Chinese economic engagements with Pakistan. Max Horkheimer contends that the traditional paradigms of International Relations tend to legitimise the state of affairs. However, the critical theory allows the deconstruction and rethinking of the present (Horkheimer, 1972). While the Chinese engagements with Pakistan appear to be traditional and benign interactions between two neighbouring states driven by mutual interests, there can be a devil in the details. Critical theory provides a lens to explore those details.

One of its major strengths is its remarkable diversity, which is comprised of many offshoots which have definite unifying points, bringing crucial perspectives into the limelight that classical theories of international relations tend to overlook.

2.2 Post-colonial Theory

The theoretical framework of this article also takes insight from the post-colonial theory. Post-colonialists gained prominence during the twentieth century. The scholars of post-colonialism maintain that the 'post' in post-colonialism does not merely stand for what happened after decolonisation, but also represents how colonialism and its structures have decisively shaped the world (Seth, 2013). However, post-colonialists have deconstructed and highlighted how post-colonial structures have maintained themselves in a supposedly post-colonial world, i.e., in a world of countries that have gained apparent independence from their colonial masters (Abrahamsen, 2007). Post-colonialists faced vociferous criticism over their methods and techniques; many questioned its place as a theory of International Relations. However, lately, the post-colonial theory has been recognised in International Relations and has also shown the lingering colonial structures in the relations between states (Griffiths, 2007).

2.3 Neo-colonialism

While post-colonialism emphasizes on the ways colonialism has shaped the current world, neo-colonialism signifies monetary domination or hegemony over the underdeveloped world by using a capitalist economic structure (Nkrumah, 1965). Instead of direct rule via territorial acquisition, a stronger country exploits by creating a financial dependency. It refers to the use and maintenance of colonial structures and colonial-like influence with the help of more subtle and discreet practices. For instance, in traditional colonialism, there was direct control over the territory, and in neo-colonialism, economic engagements maintain a colonial-like influence. In this new type, neo-colonialism, more emphasis has been given to the non-traditional aspects of colonialism, e.g., financial control (Jian & Donata, 2014). It has also become known as economic imperialism or economic colonialism.

Nkrumah (1965) was able to highlight that the colonial grasp of South Vietnam was in the hands of France, but its neo-colonial master was the United States. This flexibility makes it an effective tool in analysing the Chinese engagements with Pakistan because Pakistan was never a colony of China.

Neo-colonialism, broadly, signifies the engagements and works carried out on and in the former colonies by the non-colonised, predominantly Western, countries. It encompasses all kinds of literary, cultural, political, diplomatic, and economic engagements in which there remains an asymmetry of power (Rutazibwa & Shilliam, 2018). In this research, the theoretical framework built to describe Western engagements with formerly colonised

countries, i.e., neo-colonialism, is extended to China in its dealings with a previously subjugated country, i.e., Pakistan.

In this spirit, Paris (2002), for instance, argued that the peace-building missions undertaken in war-ravaged countries were, in reality, conducted by the developed countries, predominantly by the Western countries up till the 20th century, in the name of rebuilding and reconstructing these countries and leading them towards modern peace. However, the term "Modern Peace" and the method to obtain it came as a dictation from these developed countries. In the name of democracy and free market economics, they pursued a path that reflects the ideology of the developed West and follows the allegedly "right" path shown to them by Western success.

Many authors distinguish colonialism from neo-colonialism based on the manifest motive of both exercises. For instance, many pieces of research support the thesis that the colonial project overtly and practically exploited the resources of the colonised nation and benefitted the home country, e.g., the colonisation of India (Tharoor, 2018). However, the difference it has to neo-colonial politics is that the neo-colonial engagements, such as the peacebuilding missions, have an overt objective to benefit the receiving country (Rutazibwa & Shilliam, 2018). Hence, Neo-colonialism requires more hair-splitting to see the exploitation, intended or unintended, which becomes a part of it.

2.4 Marxist Theories of Imperialism

These theories focus on the economic aspect of imperialism. They broadly maintain that imperialism in the modern world happens with the help of control over financial resources. This control paves the way for other influences, e.g., cultural, psychological, etc. For instance, one such theory is the world systems theory, presented by Immanuel Wallerstein. It is a well-known theory and argues that the economic development and progress in one part of the world makes the simultaneous loss of, or causes control over, another part of the world (Wallerstein, 1987).

With such suspicions, Marxist theories of imperialism provide a relevant framework to analyse these economic engagements. As the economic relationship between China and Pakistan is highly asymmetrical, there are suspicions that it might lead towards a virtual financial control exercised by China over Pakistan.

3 Analysis of Chinese Economic Engagements

3.1 Chinese Engagements with Africa and South East Asia

In one recent and relevant work, Alden (2017) reviews the interaction between China and Africa. In the 1990s, Taiwan initiated a foreign aid policy or, as it is known popularly, a "dollar diplomacy" with the African states. This policy successfully helped Taiwan earn official recognition from some African states (Lee, 1993). Alden (2017) also identified a "desire to exploit commercial opportunities with increased trade" as a motivator behind this recent engagement of China with Africa. Researchers also indicate that in the first half of the 21st century, the people-to-people interaction between Chinese people and African people has increased exponentially, and that due to this engagement drive, China has also started to affect the lives of ordinary Africans in an unprecedented way (Peterson, 2008). It pinpoints that economic engagements have the potential to transcend their economic boundary and become involved in the people's, or cultural sphere.

This leads to multiple crucial insights. Firstly, this apparently economic interaction also has political motivations, i.e., the regional competition with Taiwan. Moreover, researchers have identified a "desire to exploit" as an ingredient of this engagement (Alden, 2017). It means that although, at least apparently, it appears to be hugely beneficial to African countries, it has potential parasitic elements. It also establishes that the impact of this engagement is not limited to the economic domain, but is more far-reaching. For instance, China has penetrated its way into the lives of ordinary Africans. All of them are the ingredients of a neo-colonial exercise (Lumumba-Kasongo, 2011). If the Chinese engagement with Africa has potential neo-colonial components, it is only logical to analyse Chinese financial relations with Pakistan.

Some argue the futility of comparing the engagement with Africa with that of Pakistan. The underlying reason is that the political realities of both regions are fundamentally different (Javaid & Jahangir, 2015). In Africa, there was Taiwan, which motivated politically ambitious engagement with Africa to bring the African countries close to the Chinese view of the conflict, and with the Chinese world view in general. However, the point to be noted is not

Taiwanese presence, but political competition. Although Taiwan is not present in the Pakistani case as it was in the African case, another political competitor of China, perhaps a more serious one, exists here, i.e., the USA. Moreover, a good amount of evidence makes it possible to contemplate that as China becomes an increasingly important player in world affairs, it would try to sway as many countries as possible away from the US camp by offering them the Chinese alternative (Smith, 2011). A possible exercise of China can be to woo Pakistan away from the US camp towards itself by economically engaging with it, as it has pulled the African states into its camp from the Taiwanese camp.

Pakistan and China share a crucial aspect not shared by China and Africa: geographical proximity. The Association of South East Asian Nations (ASEAN) and its relationship with China is a feasible case study. Over time, the engagement of China with these countries has dramatically increased. However, the nature and impacts of this engagement need to be studied diligently. In due time, ASEAN markets started to flood with Chinese imports, and the trade deficit between ASEAN and China increased to colossal levels. This happened due to a deliberate Chinese policy to incentivise its domestic players in this relationship (Chakraborty & Kumar, 2012). Ultimately, the beneficiaries of these engagements are China and the Chinese.

When these countries have recently tried to come out of this cycle of what was becoming Chinese dependency, not only has it become practically challenging for them, but it also received a narrative-building response from China. Chinese researchers are keen to show ASEAN nations as an example of 'hedging alignment' (Kuik, 2016). This broad allegation of hedging is a narrative explanation given by a great power when other countries are trying to re-negotiate their terms of engagement with that great power. Hedging alignment is, by definition, an alignment behaviour shown by some nations which are neither 'balancing alignment' nor 'bandwagoning alignment'. It is a combination of both resistance to power and acceptance of power (Pollack, 1996).

This engagement is invaluable in understanding neo-colonial aspects because maintaining hegemony over the narrative and discourse is part of the neo-colonial exercise. Moreover, the case bears uncanny similarities with the example of China-Pakistan. Firstly, China and Pakistan share the same asymmetrical relationship. The markets of Pakistan lag far behind China in competitiveness, and Chinese engagements can also make Pakistani markets dependent upon imports from China. Secondly, if Pakistan tries to re-negotiate its arrangements with China, it can easily label Pakistan as a country performing hedging alignment to maximise profits from the USA and China, in a possible neo-colonial attempt to establish narrative hegemony.

3.2 Soft Power of Chinese Engagements

These indications of the peculiar nature of Chinese engagements with the world, especially with underdeveloped and developing countries, pose another striking question: whether the Chinese interactions would be limited to the economic sphere, or would there be other dimensions of them too, e.g., cultural. Joseph Nye (1990) popularised the term soft power and, in his analysis of the post-cold war role of the United States, advanced that countries heavily use soft power in the absence of traditional hard power traits. Soft power broadly means how 'attractive' a country appears and has three resources: culture (how much it influences and attracts others), political values, and foreign policy (how much others see it as 'legitimate' and 'moral') (Nye, 1990).

In a recent study of Chinese soft power around the globe, Repnikova (2022) argued that the Chinese theoretical formulation of soft power is relatively different from the one which Nye had in mind. China believes in less rigid boundaries between hard power and soft power, especially in the relationship between material hard power, e.g., job opportunities, and soft power, e.g., the attractiveness of Chinese culture as being more integrated as compared to what was believed by Nye. The authors have also identified the main media for the propagation of Chinese soft power, i.e., the development of Confucius Institutes, international communication, education and training exchanges, and 'public policy spectacles', i.e., narratives focusing on Chinese public policy successes, such as the alleviation of poverty (Repnikova, 2022).

Three crucial insights come out from this recent research. First, the Chinese presence in African nations is the subject of many pieces of research, meaning that in areas in which there is extensive Chinese economic engagement, there can be cultural engagement as well. Second, the authors have argued that Chinese economic interactions are more localised, i.e., the author means that the institutes operating in another country consider the

context in which they are working and include the local population in many prime roles in these institutions. It indicates that the cultural influence of China can be subtle because it attempts to make it look like culture-inclusive locally. Finally, it shows from the comparison that Chinese soft power techniques are more successful in countries known as the 'global south' (Repnikova, 2022).

3.3 Media Perception

Landmark scholarship in the African region has highlighted the presence of Chinese media in Africa (Madrid-Morales, 2016). According to some, media is used by China to increase its soft power and to counter stereotypes against China; both, in turn, result in greater cultural engagement (Leslie, 2016). The term media use includes both the presence of Chinese media in the region for possible propaganda purposes and the coordination with local media that helps portray a more 'positive image' of China and its engagement with the host country (Franks & Ribet, 2009). However, in an alternative expression, some scholars have refuted this obsession with the Chinese intentions in the region. They propose that the purpose of media engagement is to counter stereotypes against China. On the other hand, these countries feel attracted to China due to the presence of a feeling of previous exploitation by the West in the psychology of these people (Zhang et al., 2016). In the existence of such narratives and counter-narratives, it is imperative to explore the content and character of Chinese cultural engagements with Pakistan.

3.4 Possibility of Politico-cultural Implications of the Chinese Economic Activity

The Chinese relations with other countries, particularly with the countries of the Global South, set the context for this scrutiny of Chinese economic engagements with Pakistan. In an insightful research, Afreen and Hashim (2021) considered the case of Chinese Foreign Direct Investment (FDI) in Pakistan and, by analysing it with the help of various other scholars, concluded that it is possible to call the Chinese project and interest a neo-colonial project.

These concerns of Afreen and Hashim are not isolated. Over the period, various scholars have expressed concerns that this project would undermine the sovereignty of Pakistan as an independent nation in the future. Some researchers have taken the liberty to call the project an example of a Chinese 'debt trap' (Colley & van Noord, 2022). However, primary research on the topic remains rare.

3.5 Shortcomings of Over-optimistic Analysis of the Chinese Engagements with Pakistan

A plethora of literature seeking to counter these critiques offered by these scholars and the West has also emerged. Scholars based in Pakistan are responsible for many of these pieces of research, and they often highlight the opportunities CPEC offers Pakistan and its economy (Shaukat & Bakht, 2022; Ali et al., 2021). Amidst growing criticism, Chinese scholars also share this enthusiasm to defend CPEC. An analysis of Pakistani and Chinese counter-critiques of CPEC reveals some common points of emphasis. First is the reiteration that China has never been a colonial power, and does not ever aim to become one. Second is the temptation to ascribe the criticism of CPEC to a US-Indo attempt to sabotage CPEC and, broadly, the BRI, due to their security and regional concerns (Hussain et al., 2022; Zaidi et al., 2022; Safdar et al., 2021).

A deeper analysis can identify that whereas abundant literature exists that seeks to defend CPEC from any criticism that indicates even a slight hint of exploitation or potential exploitation in the project, this literature has some obvious gaps. First of all, the defence provided is, at some levels, reactionary. It seeks to counter the criticism by highlighting the opportunities that CPEC or economic investments from China would offer Pakistan, but neglects the challenges and potential existence of exploitation in the process. In other words, it avoids a conversation with the criticism on points of criticism. Secondly, it might be true that the most vocal critics of the Chinese economic engagements with Pakistan are coming from India and the United States, and the criticism might be stemming out of their respective interests; it is not enough to discredit the points of criticism offered by the Indian and US scholars. A theoretical and practical dialogue with the content of the critique is required to respond to it. It means, most of the academic defence in the Chinese engagements with Pakistan offers an apologetic counter and, at the same time, remains oblivious to the need for scholarly interaction in a dialogue with the criticism.

3.6 Impetus for Looking at Chinese Economic Engagements from a Neo-colonial Perspective

The cultural and neo-colonial implications of these interactions, if any, are not yet very apparent. However, it is logical to study Chinese economic engagements with the underdeveloped world from the same lens that Roland

Paris (2002) used for understanding the peace-building interventions of Western countries. It maintains that the intervention from these Western countries came with a 'liberal bias' and, perhaps, an unconscious attempt to diffuse Western worldview values into these underdeveloped countries. Now, the question is: would the Chinese engagement with underdeveloped countries come with a 'Chinese world view' bias?

It has become clear that although ostensibly, and as propounded by the official Chinese narrative, it is advantageous for the receiving nations (Liang, 2019), a rigorous and critical analysis of the engagements such as the ones undertaken on Western projects to identify neo-colonial aspects, may offer valuable insights that might have skipped the attention of a shallower view. These arguments make a persuasive case for an in-depth study of Chinese economic engagements with other countries, e.g., Pakistan, and ascertain whether aspects of neo-colonialism are present within it, or not.

4. Discussion and Conclusion

The literature discussed above confirms that China is extensively economically engaging with the world. South East Asia, Africa, and now South Asia (particularly Pakistan) are the potential epicenters of its international economic engagements. Almost all of these economic engagements highlight the asymmetrical nature of the relationship, with China being the dominant player. This asymmetry paves the way for critical analysis of potential imperialistic or hegemonic designs.

Although the traditional theory of neo-colonialism has generally been used in the past to scrutinize Western engagements with the third world, the neo-colonial framework is also apt to analyse asymmetrical Chinese economic engagements with the world and their politico-cultural implications as the neo-colonial framework does not require the countries under study to have shared a colonial relationship in the past.

The vast majority of literature suggests that Chinese economic engagements do not remain restricted to economic activity. There are also spillover effects of the Chinese economic activity, e.g., media presence, foreign policy influence, and educational and cultural engagements.

With the same power asymmetry existing in the Chinese economic engagements with Pakistan, analysing it using the lens of neo-colonial theory can help us understand the dynamics of these activities in an innovative and insightful way.

Finally, it is open for future research to analyse the exact politico-cultural implications of the Chinese economic engagements with Pakistan and the perceptions of Pakistanis regarding these engagements.

4.1 Policy Implications for Pakistan

Pakistan should remain cautious of debt dependency. Hence, it should seek favorable loan terms and variegate foreign investment. Moreover, the terms and conditions of current economic engagements should be carefully deliberated upon and properly audited.

Pakistan should protect its local industries to prevent them from Chinese competition. It can consider improving the competitiveness of Pakistani industries and applying tariffs on some Chinese projects in areas where local industry is most vulnerable.

As there exists the possibility of economic engagements spilling over to the cultural domain, it can lead to tensions between Chinese companies, Chinese personnel in Pakistan, and Pakistani citizens. Pakistan should prevent this with the help of an effective media strategy, promoting mutual understanding of Pakistani and Chinese culture and securing fair labor practices.

To prevent negative political implications, Pakistan must maintain a balance with China and its other allies like the United States with the help of interest-based foreign policy and maintain diverse alliances globally.

However, this article highlights that smaller partners also enjoy some leverage in asymmetrical relations. Hence, Pakistan has the prospect of using its leverage over China to get help on international issues like Kashmir, secure foreign investment, and build regional alliances.

4.2 Study Limitations

There is a lack of credible statistics and data on Chinese economic engagements with Pakistan and the rest of the world. Due to the unavailability of primary data, the research had to rely on peer-reviewed secondary literature published in journals of repute. Moreover, the research is not field research and only comes from existing literature on this topic. Nevertheless, aware of these shortcomings, it does not provide a conclusive judgement on the exact politico-cultural implications for Pakistan. It only underscores their possibility, relying on qualitative content analysis of literature and leaves it open for future primary research to determine the specific politico-cultural implications.

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China Pakistan Economic Corridor: Challenges and Opportunities

^a Nabel Akram, ^b Wen Chen, ^c Jialin Ling, ^d Komal Tariq

^a PhD Scholar in Political Communication, Shenzhen University, Shenzhen, Guangdong, China. Email: nabeelakram100@gmail.com

^b Professor in school of Government Shenzhen University Guangdong, China. Email: Chenwen1122@163.com

^c Assistant Professor in Journalism and Communication Department, Shenzhen University, Shenzhen, Guangdong, China. Email: China.326619180@qq.com

^d Senior Social Study Teacher at Beacon House Faisalabad, Pakistan. Email: komaltariq107@gmail.com

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ABSTRACT

Objective: The major objectives of the research are to identify any dangers and challenges related to the development of the China-Pakistan Economic Corridor (CPEC), as well as to shed light on the benefits that Pakistan receives from the CPEC.

Research Gap: Within the scope of the research, various threats and challenges are identified. These include cyber security threats, geopolitical conflicts, and terrorist acts.

Design/Methodology/Approach: In this study, the author used the qualitative research method with exploratory and analytical design which is based on the primary and secondary data sources.

The Main Findings: The China-Pakistan Economic Corridor has the potential to bring about huge economic benefits for both countries; nevertheless, the resolution of security concerns is essential to the success of this endeavor. It is possible to acquire a better understanding of the strategic advantages and anticipated benefits that will accrue to both China and Pakistan as a result of the pursuit of the China-Pakistan Economic Corridor (CPEC) by adopting the rational choice paradigm. Additionally, the study highlights the need of constant diplomatic efforts, strategies for conflict resolution, and collaboration with regional parties in the management and mitigation of security concerns. This is done to guarantee the sustained growth of the (CPEC). Theoretical / Practical Implications of the Findings: The research makes use of Rational Choice Theory as its conceptual and theoretical framework to get an understanding of the reasons and choices that China and Pakistan have made in their pursuit of the China-Pakistan Economic Corridor (CPEC). Rational Choice Theory suggests that governments, international actors, and decision-makers make rational decisions to achieve the best outcome and avoid failure. This theory is used to explain why China invests in the China-Pakistan Economic Corridor (CPEC) and Pakistan becomes a partner of this project. It delves into the reasons why they are in this game.

Originality/Value: The abstracts demonstrate the contribution of the research that has rarely/never been done before.

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Corresponding Author's nabeelakram100@gmail.com

1. Introduction

In the 21st century, a worldwide strategic environment has formed, promoting the growth of regional and global alliances in both economic and strategic domains. This context fosters cooperation among nations in

economic and strategic domains (Anwar, 2010). The China-Pakistan Economic Corridor (CPEC) is a bilateral initiative that will have a transformative impact on the region's political and economic landscape and the global stage. (M. Z. U. Khan & Khan, 2019) This project aims to provide a connection between Kashghar in China and Gwadar in Pakistan. This project will provide substantial advantages for both China and Pakistan. The project is estimated to cost \$46 billion and will be finished by 2030. The One Belt One Road (OBOR) program, spearheaded by China, includes the China-Pakistan Economic Corridor (CPEC) as one of its components. China made its largest overseas investment via the China-Pakistan Economic Corridor (CPEC). Once finished, CPEC is expected to have a significant impact on global economic and strategic policies. This investment is also anticipated to contribute to the prosperity and strength of Pakistan (Abid & Ashfaq, 2015). The project will have a significant impact and provide many trade routes connecting China, Pakistan, Afghanistan, Central Asia, Europe, and the Middle East. The China-Pakistan Economic Corridor (CPEC) is of utmost importance to Pakistan as it would significantly enhance the country's economy. The anticipated results of the CPEC include fostering interpersonal connections and cultural interchange to facilitate inter-civilization communication, as well as coordinating diplomatic tactics to cultivate a friendly and harmonious neighborhood. The China-Pakistan Economic Corridor (CPEC) has significant relevance for Pakistan, China, and the rest of the globe (Rizvi, 2014). Research indicates that CPEC is crucial for global development and is considered the future of the world. The analysis indicates that the China-Pakistan Economic Corridor (CPEC) will have a positive impact on around 3 billion people residing in China, South Asia, and Central Asia. The China-Pakistan Economic Corridor (CPEC) cannot only empower Pakistan and China but also the largest population in the world residing in Asia, including India. However, India has expressed concerns over the CPEC and the strengthening relationship between Pakistan and China (Gill, 2019). Upon completion of the CPEC and its associated projects, Pakistan will serve as a prominent commerce center connecting China, the Middle East, and Africa. Primarily, commerce should include the conveyance of oil from the Middle East to Gwadar, a location positioned on the periphery of the Gulf.

2. Theoretical and Conceptual Framework

In this research, the conceptual and theoretical framework is dependent on the rational choice theory. This theory enlightened the cause of why China is persuaded to make this project, why China is eager to invest, and why Pakistan is in this collaboration to build CPEC. This theory will describe the interdependence of both countries to fulfill their national interests by making CPEC. The CPEC depends on the Rational Choice Theory.

2.1 Rational Choice Theory

The study necessitates the use of rational choice theory to analyze and elucidate the actions and behaviors of various entities such as nations, and international players including intergovernmental organizations, NGOs, and multinational corporations. All of these performers have works that are indescribable, functioning and thinking and reacting much like a human person. The study aims to investigate the decision-making process of the leaders of Pakistan and China, as well as the stakeholders, regarding the China-Pakistan Economic Corridor (CPEC) and other related projects. This decision-making process can be well-understood by the researchers and students of political science and international relations who in turn can make predictions about their behavior towards CPEC. To make the study even better, the rational choice theory will be used to investigate other sides of CPEC.

Balancing Theory and Evidence: A balanced approach involves integrating Rational Choice Theory (RCT) with empirical evidence in a way that each enriches the other. Rather than relying solely on RCT to explain the decisions, use it as a lens through which to interpret the evidence, while allowing the evidence to challenge or refine the theory.

By adopting this balanced approach, the paper would effectively demonstrate the interplay between theory and practice. It shows that while Rational Choice Theory can offer significant insights, real-world scenarios are often influenced by factors that require a broader analytical perspective. This approach ensures that the

analysis is theoretically robust and empirically grounded, leading to a more well-rounded and insightful conclusion.

Rational Choice Theory (RCT) posits that individuals make decisions by optimizing their benefits, typically in terms of utility. Originating from classical economics, it has been influential across disciplines like economics, political science, sociology, and criminology.

2.2 Foundational Works

RCT's roots lie in the works of Adam Smith and Jeremy Bentham, who introduced ideas of self-interest and utility maximization. In the 20th century, John von Neumann and Oskar Morgenstern formalized these concepts through game theory. Gary Becker expanded RCT into non-economic areas, arguing that rational choice underlies a wide range of human behaviors.

2.3 Applications in Various Disciplines

In political science, James Buchanan and Gordon Tullock applied RCT to political decision-making, emphasizing rational calculations in "The Calculus of Consent" (1962). In sociology, Jon Elster defended RCT's value while acknowledging its limitations in capturing complex social behaviors. In criminology, Derek Cornish and Ronald Clarke used RCT to explain criminal behavior as a rational choice to maximize benefits and minimize risks.

2.4 Rational Actor Model

A model used in international relations and political science to explain how states make decisions. It assumes that states act as rational unitary actors, making decisions to maximize their national interest.

Rational choice theory is a social science theory that deals with the behavior of individuals, organizations, and the state in connection to human behavior and social life. The idea can be explained by the logical decision of people and countries as well as their actions and interactions with others. Political interaction can be seen as a form of exchange, where individuals or states engage with each other if the benefits they expect to gain outweigh the costs associated with the interaction. If it fails to do so, the interaction between the two will no longer be feasible. The rational choice theory seeks to elucidate the motivations and decision-making processes that drive actors' behavior (Cornish & Clarke, 2016).

3. Literature Review

The bilateral relations between the two nations have never been put to the test in the way that they are now, Pakistan views China as one of its most valuable and enduring allies. The study must assess the reaction of Pakistan's political stakeholders. When the Author studies Pakistan's political stakeholder's response then there is a big sigh of relief at that point they all agree to build CPEC for the better future of Pakistan. And there is no opposition to this proposal. However, there are a few nationalist groups in Baluchistan (Hafeez et al., 2021). However, the Baloch people raised their voices because they believe they have not received the full benefit of developments in Baluchistan, such as the CPEC and the Gwadar port project. Although they are not opposed to the initiative entirely, they do want their fair part. The Baloch point of view is not opposed to China in this sense. They believe they should be given proper and due benefits or share with the Balouch people (YIGIT & Studies, 2019).

3.1 Bilateral Relations

If we talk about the political stakeholders of Pakistan they all wanted and were in favor of having friendly bilateral relations with China. As earlier our studies described there are no concerns about Pakistan's political parties and their point of view regarding China, this all indicates Pakistan's political stakeholders will preferably maintain or boost their policy toward China, and always make friendly relations with the neighboring country (Mahmood & Askari, 2022).

3.2 CPEC Routes Through Pakistan

The main highway will pass from the Gwadar Port through Turbat, Panjgur, Ratodero, Kashmore, Rajanpur, Dera Ghazi Khan, Dera Ismail Khan, Bannu, Kohat, to Peshawar, up to Hasan Abdal, and Khunjerab, then on to the Pakistan-China border. Nonetheless, currently, there are several alternative routes available in a bid for the segment. The Western government is mentioning an alternative route as the Eastern Route would start from Gwadar and transit through Turbat, Panjgur, Khuzdar, Ratodero, Kashmore, Rajanpur, Dera Ghazi, Multan, Faisalabad, Pindi Bhattian, Rawalpindi, Hasan Abdal, which will go to Khunjerab and China. The emergence of the Eastern Route in the media has propelled the issue of the Western Route, which is the name of the route from the northeastern Balochistan region. This route is proposed to pass through Gwadar- Turbat-Panjgur-Khuzdar-Kalat-Quetta-Zhob-Dera Ismail Khan-Bannu-Kohat-Peshawar-Hasanabdaland onwards to khunjab and then to china. In terms of opportunity cost and compensation for displacement, the Western route appears to be the most efficient and cost-effective option, being the shortest among the alternatives. Conversely, the Eastern route presents a potentially higher financial burden. Many sections along this route would require enlargement and relaying to handle the anticipated traffic volume and making claims that existing portions would save time and money untenable. Additionally, the Eastern route carries the risk of political division, instability, and the potential to undermine the overall Corridor concept(Zhou & Esteban, 2018).

3.3 Eastern Routes

According to the author (Flew, 2012). If the Eastern Route is chosen because of security issues which are related to the Western and Central routes, then these immediate safety benefits may lead to future inter-provincial discord and political instability. Although security is a priority, the best way to deal with unrest is by giving people jobs instead of resorting to military action. Since the project is too important to be delayed any longer, it's necessary to settle this dispute as soon as possible and come up with a solution that will satisfy all provinces. Dera Ismail Khan-Sargodha-Lahore will be connected to the Lahore-Karachi Motorway.

Khuzdar-Ratodero-Sukkur will be the route of connecting with the Lahore-Karachi Motorway.

3.4 Cultural and Social Objectives of CPEC

This way not only the economic benefits are shared more equally but also it leads to national unity and long-term stability. Furthermore, the participation of local communities in the decision-making can be a way to reduce possible conflicts and at the same time get support for the project.

CPEC is not only a road network between two countries, CPEC is a complex system that includes different dimensions and issues. Society is in dire need of intellectuals, researchers, and students from different universities and think tanks to work together on its various dimensions. These dimensions are the logistics, transportation, and infrastructure development which is composed of railway lines, roads, ports, and airports. Apart from that, CPEC is also a political, social, and cultural exchange program that includes skill development and future employment. The other major spheres are agriculture, environment, climate change, and food security. In addition, economic stability and prosperity are also important objectives that want to be achieved through increasing international trade and investment through knowledge sharing. Through cross-border collaboration, we should be able to realize the whole potential of CPEC and at the same time create sustainable growth as well as regional cooperation. The initiative is also a chance for the development of academic and professional life, which will boost the global discussion on development. The better comprehension and the new solutions in these areas will be a great advantage to the long-term success of CPEC. These are the segments of CPEC that are important to discuss and will affect both countries so the need of people to people to contact is essential to deal in these fields (Ullah, Khan, Rahman, & Ullah, 2021).

3.5 External Challenges

India has become the biggest opponent of both Pakistan and China, and it is observed that India does not want China to flourish and does not want China to become South Asian Leader. As far as Gwadar port is concerned, India has some serious reserves on this by having a stance that Indian Ocean will be shadowed

by China and China will create its supremacy in the region. In reaction, India is working on Chahbahar port in Iran to compete with Gwadar port in Iran, and building its relations with Iran and Afghanistan to make influence in the region (Z. A. J. S. S. Khan, 2012).

Definitely, there are very serious unresolved territorial disputes between these three countries, and CPEC will be going through some of these disputed territories, but China unofficially asks India to involved in this corridor(Kuszevska, Nitza-Makowska, & Affairs, 2021). In the course of his trip to China from July 3-8, 2013, Prime Minister Nawaz Sharif emphasized CPEC as a vital economic project directed at benefiting the whole region, even India This shows that both countries were keen to have India in this project and wants trilateral relations for the betterment of the region (Onwuegbuzie & Teddlie, 2003).

Recent literature paves the way to find out the related theories to CPEC which are going to be discussed. The author used the Neo-liberalism theory to illustrate the behavior of respondent states whose economy is going to be hit by this project and the second theory will be Rational Choice theory which will describe that both CPEC countries are interdependent for their benefits and national interests.

The above literature review discussed about the major challenges and opportunities of the China Pakistan Economic corridor. Discussing challenges, the author has concluded that there are two kinds of challenges related to CPEC, like external challenges from India. Middle East (Dubai), Iran, Afghanistan, and most of the biggest are the terrorist activists. Internal challenges like political instability, route controversy, provincial prejudice, and managerial corruption are the main challenges that can weaken this entire project.

4. Research Methodology

In this study, the author used the qualitative research method with exploratory and analytical design which is based on the primary and secondary data sources.

4.1 Exploratory & Analytical Design

Exploratory and analytical study relies on secondary data. It provides a base for the initial groundwork and it is a non-experimental study. The main purpose of the exploratory analytical study is to explore things without manipulating them. The purpose of the study is to link causes and results of the evidence of research. It defines the problems and suggests solutions but its results are not usually useful for decision-making this study provides significant insight into the given situation of the topic where research is being done(Barratt, Choi, & Li, 2011).

4.2 Data Sources

In this research, the author used secondary data sources that is books, journals, periodicals, research articles, newspapers, blogs, etc. have been consulted to get real insight into the dispute.

5. Importance for Pakistan

Pakistan places great importance on the China-Pakistan Economic Corridor (CPEC) from various perspectives, including infrastructural improvement, economic development, and geopolitical orientation.

Firstly, Pakistan's economy experiences accelerated growth due to CPEC. Job creation, heightened industrial activity, and improved trade connectivity are all facilitated by the extensive infrastructure projects under the China-Pakistan Economic Corridor. These projects encompass the expansion of Gwadar Port, the establishment of energy-producing facilities, and the development of transportation networks. China's investment inflows not only bolster economic growth but also address pressing issues such as energy scarcity, creating a more favorable environment for enterprises to thrive(Eichengreen & Tong, 2006). The China-Pakistan Economic Corridor (CPEC) has been a major factor in the improvement of Pakistan's infrastructure and thus played an important part in its long-term development. The CPEC links China's northwest Xinjiang region with the Gwadar Port in southwest Pakistan by creating a net of roads, railways, and energy infrastructure. This strategic link makes Pakistan a major player in both regional and international trade as well as it greatly enhances the internal transit systems. The upgraded infrastructure

under CPEC facilitates the creation of more efficient commercial routes which in turn make Pakistan a more interconnected, competitive, and robust economy.

6. Strategic Significance of CPEC

Besides, the CPEC has political importance too and it changes greatly the geopolitical situation of the region. China considers the CPEC a crucial component of the larger Belt and Road Initiative (BRI), facilitating improved economic routes and connectivity from Pakistan's Gwadar Port to western China. Thanks to this strategically important link, China no longer needs to rely on lengthier and riskier maritime routes to access the Arabian Sea. This development enhances Beijing's geopolitical standing and expands China's economic influence in the area, allowing for diversification of energy imports and reducing the risks associated with traditional sea routes (Chung, 2018).

From Pakistan's perspective, the China-Pakistan Economic Corridor (CPEC) represents a geopolitical advantage that promotes economic expansion. The corridor has closely aligned Pakistan and China, fostering strong diplomatic and economic ties. By addressing critical infrastructure gaps, this alignment not only supports Pakistan's economic progress but also enhances its diplomatic standing internationally (Ismail, 2014). Pakistan gains influence in China's Belt and Road Initiative (BRI) and solidifies its relationship with a major global economic force through CPEC. Furthermore, the corridor elevates Pakistan's geopolitical significance by positioning it as an essential transit hub for both domestic and international trade. Therefore, the strategic importance of CPEC lies in its capacity to alter the balance of power in the area, promote economic interdependence, and expand China and Pakistan's geopolitical influence.

7. Potential Threats and Challenges

The completion of the China-Pakistan Economic Corridor (CPEC) brings about substantial economic prospects, but it also entails possible risks and difficulties. A major concern is the potential for terrorism, particularly in the Baluchistan region of Pakistan, where separatist groups have targeted infrastructure projects associated with the China-Pakistan Economic Corridor (CPEC). These assaults pose a threat to the safety of the employees, hinder the pace of construction, and create an atmosphere of terror. Pakistan has increased the deployment of security troops to safeguard CPEC projects. However, the continual threat continues to pose a significant challenge (S. A. Khan, 2013).

The geopolitical rivalry between India and Pakistan is a big security problem because of the China-Pakistan Economic Corridor (CPEC) that goes through disputed territory. A part of CPEC goes through the disputed Kashmir region, which is famous for its historical instability. This is even more intricate when the possibility of escalation of hostilities between the two countries which can endanger this corridor's success comes into play. The existence of CPEC in this sensitive zone makes the security situation more complicated and thus, requires clever and well-thought-out diplomatic work to reduce the conflict risks. The stability and further development of CPEC should be guaranteed by taking proactive steps to deal with these geopolitical tensions (Daniels, 2013). Besides, there are also worries about the cyber-attacks that may risk the CPEC infrastructure. Being the main project of connectivity which is based heavily on digital technologies and communication networks, CPEC is very vulnerable to cyber-attacks that can break down operations, get access to sensitive data, or even destroy critical infrastructure. Hence, the strengthening of cybersecurity measures is a must for CPEC to be able to withstand these new challenges. The mutual help between China and Pakistan is the key to solving these problems properly. To sum up, CPEC has a lot of security problems such as cyberattacks, political conflicts, and terrorism. The right response to the development of the economic corridor is well-coordinated and strategically planned. Both nations should join forces to strengthen security measures and deal with these different risks, thus making CPEC a real regional project (Burgos Cáceres & Ear, 2012).

8. Discussion

Rational choice theory, the key notion in economics and political science, gives useful information on how individuals and states make their decisions by rational calculation of costs and benefits. This structure is

very helpful in explaining the reasons and choices behind the China-Pakistan Economic Corridor (CPEC). China sees the huge investments in CPEC as a wise decision to protect its economic and strategic interests for years. Thus, by helping the economic development of Pakistan, China not only gets a reliable partner and market for its goods but also creates a strategic way to get into the Arabian Sea through Gwadar Port. Pakistan is the most suitable country to engage in CPEC because it fits perfectly into its rational economic decision-making process aimed at solving development challenges. The more China invests in and brings its knowledge to Pakistan, the less these infrastructure problems which are mainly related to energy and transportation will be. This logical decision is made because of the possibility to get economic growth, job creation, and improved trade connectivity. Besides, using the CPEC project which is a part of China's Belt and Road Initiative with Pakistan as its participant. It will be an additional strategy to expand the economic and geopolitical alliances for Pakistan beyond this region. Therefore, rational choice theory is a tool for understanding the measured choices of both China and Pakistan in implementing CPEC. These decisions are made for common interests and strategic reasons. The two sides, China and Pakistan have both done a lot to ensure the safety of CPEC facilities and personnel in response to security threats. The Pakistani government has increased security forces along the corridor, especially in areas like Balochistan province which is where the attacks are most likely to happen. The improved coordination between the Chinese and Pakistani security forces leads to a single and efficient reaction to all possible threats. Besides, the main causes of regional conflicts that are being tackled include socioeconomic disparity and dissatisfaction to form a more stable environment for the China-Pakistan Economic Corridor. The use of diplomatic methods to involve the regional players and solve the problems with India is also vital for this corridor. Hence, the China-Pakistan Economic Corridor between China and Pakistan is a good example of how to sensibly solve security problems while building up an integrated economy.

9. Conclusion

The Pakistani government has increased the number of security forces along the corridor, especially in such places as Balochistan province where attacks are more probable. The cooperation between Chinese and Pakistani security forces has been enhanced which is why they can act as one when there are any possible threats. Besides that, the main causes of regional conflicts such as socio-economic disparities and grievances are also being addressed to provide a more stable and suitable development environment for the China-Pakistan Economic Corridor. The diplomatic actions that are to be taken to bring the regional stakeholders together and reduce the tension with India will also play a key role in the security and success of this corridor. Hence, China and Pakistan's cooperation on CPEC is a perfect example of their comprehensive approach to economic development which also takes into account the security issues in rational and strategic ways. This flexible strategy requires continuous diplomatic efforts, efficient conflict resolution mechanisms, and a deep knowledge of regional situations. The attainment of the balance between the security that is so necessary and at the same time, economic development needs constant cooperation, flexibility, and a firm resolves to deal with the root causes of instability. The China-Pakistan Economic Corridor will be determined by the way how effectively China and Pakistan can work with other regional actors to control and resolve these security issues.

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Mapping the Drivers of Women's Health Empowerment Disparities: Evidence from Pakistan

^a Zopash Khan, ^b Muhammad Jamil, ^c Amber Imtiaz

^a Lecturer, Kashmir Institute of Economics, The University of Azad Jammu & Kashmir, Muzaffarabad, Azad Kashmir, Pakistan.

Email: zopash.khan@ajku.edu.pk

^b Professor, Ghulam Ishaq Khan Memorial Chair (SBP), Kashmir Institute of Economics, The University of Azad Jammu & Kashmir, Muzaffarabad, Azad Kashmir, Pakistan. Email: m.jamil@ajku.edu.pk

^c Assistant Professor, Kashmir Institute of Economics, The University of Azad Jammu & Kashmir, Muzaffarabad, Pakistan. Email: amberabbasiajk@yahoo.com

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ABSTRACT

Objective: The present study aims to quantify women's health empowerment in the first stage and determine the factors affecting it in the second stage. The study also highlights regional differences in women's health empowerment through spatial mapping.

Research Gap: The role of women cannot be denied for high economic growth in modern economic literature. Improving the health and wellbeing of all individuals, particularly women is a global goal under the SDGs. Poor health status and lack of healthcare facilities not only affect women's well-being negatively but also affect economic growth through the reduction in their productivity. Pakistan is one of the few countries where women face issues in health empowerment. Health empowerment is one's ability to make healthcare decisions. The study is novel in nature to quantify health empowerment and factors affecting it.

Design/Methodology/Approach: The study employs the data from the Pakistan Demographic and Health Survey (PDHS) for this purpose. Descriptive and Ordinary Least Square method have been used for the analysis. To check correlation among variables, Principal Component Analysis is done. Spatial Analysis is performed to estimate regional differences in women's health empowerment.

The Main Findings: Regression analysis suggest that women's empowerment, age and education have significant impact on health poverty. Women residing in urban areas face less barriers to health care access as compared to women residing in far flung areas.

Theoretical / Practical Implications of the Findings: The findings of the study suggest empowering women through provision of educational opportunities, access to economic resources and autonomy through social and culturally sensitive intervention.

Originality/Value: Preceding studies have not quantified women's health empowerment. This study is groundbreaking in identifying factors affecting health empowerment of women. Additionally, it provides spatial analysis of situation of health empowerment in the country.

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Corresponding Author's email address: zopash.khan@ajku.edu.pk

1. Introduction

Sustainable development and inclusive growth are not possible without gender equality and women's empowerment (Bayeh, 2016; Mishra et al., 2020). It requires a level playing field for women in legal rights, access to education, financial services, and healthcare (Kochhar et al., 2018). Higher gender equality leads to better allocation of a valuable resource (female labor), which enables economic growth (Bertay et al., 2020). In this

regard, women's empowerment and gender equality is vital for economic growth and development goals. Empowerment is a multidimensional concept, and its definition varies substantially. It is commonly derived by indicators such as decision-making, financial inclusion, educational and job opportunities, health conditions, and mobility. Women empowerment is just not an outcome, but a variable that affects other development goals. Improvement in health and nutrition status is connected to women's empowerment (Cornwall, 2016; Wei et al., 2021).

Women's access to and control over resources affects their health status, which consequently impacts their ability to be responsible for their healthcare needs (Sahn & Younger, 2009; Mabsout, 2011; Ross et al., 2015). However, women face multiple barriers which include a lack of transportation, financial resources, information, and cultural and social barriers in developing countries. These factors deteriorate women's health status. Deterioration in health results in a decline in their productivity (Lee et al., 2021), which reduces economic growth (Arora, 2001).

Pakistan is among a few countries in the world where the gender gap in health still exists. The country has closed 94.4 percent of the gender disparity in health (National Gender Policy Framework, 2022). Women constitute 49.5% of the total population of the country. Men and women don't have the same kind of health facilities in Pakistan (Rizvi et al., 2014). The disparity in the provision of health services affects almost half of the population of the country i.e. women. Furthermore, this deprivation is due to socio-cultural factors and a lack of facilities and health infrastructure in the country. These factors determine health poverty among women in the country.

Health empowerment is the capacity of a person to make his/her health decisions. Women's health empowerment in Pakistan is complex issue with deep rooted social and cultural factors. Norms and religious practices often dictate women's health empowerment by impacting herk of mobility and decision making. Lack of mobility However, earlier research has not quantified health poverty among women in Pakistan. Therefore, this study aims to quantify women's health empowerment and the factors affecting it. This study shall also diagnose regional differences in women's health empowerment through spatial mapping. The study is organized into five sections. The literature review is discussed in Section 2. Section 3 presents data and methodology. We, then, present and discuss the results in Section 4. In Section 5, the study is concluded with policy implications.

2. Literature Review

In developing countries, health disparity among gender remains a concern. Men and women don't have equal access to healthcare services (Azad et al., 2020). Women face various well-documented barriers to health access. Inclusion of the women in the financial decisions of the household affects women's reach to healthcare services (Habib et al., 2021). In patriarchal societies, men usually control household spending including healthcare. Women's role is limited to domestic chores management. This control over spending makes women's health depends on the men of the household. Girl's health is usually neglected because they have to leave the house due to marriage. Cultural practices and norms in some societies place the burden of household tasks on women and discourage them from land holdings and ownership. These barriers consequently affect women's empowerment (Asaolu et al., 2018).

In primary healthcare, location, distance, and transport availability act as a hurdle in healthcare accessibility for women (Panzai et al., 2017). Moreover, women face significant challenges in accessing health care services. These barriers include a lack of transportation, financial resources, information, and cultural or social barriers (Habib et al., 2021).

Women in previous studies have also revealed social and cultural barriers to getting proper health treatments which include not getting permission or money to go to the hospital and their unwillingness to go alone to the health facility etc., which indicates less autonomy in decision-making (Asaolu et al., 2018; Htun et al., 2021). Another factor, Technology, also plays a vital role in building women's capacities and resources. Information Communication Technology (ICT) intervention aids women in the provision of health services, health literacy, and other domains which empower women (Mackey & Petrucka, 2021).

Moreover, empowerment of women also affected by the women's mobility (Mainuddin et al., 2015). Their freedom of mobility makes them more empowered (Abrar-ul-haq et al., 2017). Women as household heads have

greater autonomy in decision-making and are more mobile than other women. Furthermore, women who earn more are also more mobile (Baig et al., 2018). Therefore, freedom of mobility reflects the empowerment of women.

According to existing literature, Education, in general, and health literacy, in particular, are important factors affecting healthcare access to women (Nwogwugwu, 2019; Azad et al., 2020; Htun et al., 2021; Tavananezhad et al., 2022). Health literacy and women empowerment are two important components of women's health improvement strategies (Tavananezhad et al., 2022). They define health literacy as “acquisition of required cognitive and social skills to enable women to access, understand, appraise, and use the information needed to maintain and enhance their health conditions”. Educated and self-reliant women are more empowered. (Muhammad et al., 2021) Therefore, women's health empowerment can significantly be improved by educational interventions (Sabouri et al., 2022).

Furthermore, exposure to mass media, access to information, and economic empowerment not only improve the economic conditions of the women, but their health conditions as well (Nwogwugwu, 2019; Abbas et al., 2021; Seidu et al., 2021; Lassi, Ali, & Meherali, 2021; Sserwanja et al., 2022). Empowered women have better access to healthcare services and decision-making authority in health-seeking (Nwogwugwu, 2019). Such women can make better decisions for their children as well (Mainuddin et al., 2015).

Moreover, Qureshi and Sheikh (2007) assert that four power institutions of the society i.e. family, community, the health care system, and the state should do joint efforts to provide equal access to health care to women in Pakistan.

3 Data and Methodology

3.1. Data

For the analysis purpose, the present study has used data from Pakistan Demographic and Health Survey (PDHS, 2017-18). PDHS provides the latest comprehensive data on health indicators of women and members of their households at the national level. A survey has been conducted by the the ICF, funded by USAID and Pakistan National Institute of Population Studies. Data from 50,495 ever-married women were taken for analysis. To construct our output variable, Health Poverty Index, we considered three barriers to access health care faced by women. These barriers include (i) the person who decides about the respondent's health care, which reflects decision-making regarding the health of women (HP_D1), (ii) distance from the health care facility (HP_D2), and (iii) the Availability of medicines (HP_D3). Data on the availability of medicines were available for 27436 women in the data set. Therefore, we computed two health poverty indexes. First, Health Poverty Index (HP_O) was computed using all observations and two barriers to access to health care i.e. HP_D1, and HP_D2. Whereas second index (HP_O1) was computed using 27,436 observations and three barriers which also included HP_D3. HP_O and HP_O1 take the value 1 when the woman is deprived of health care access, and 0 when she is not deprived.

Women empowerment index (WEI) is computed using ten variables from the data set, which can be grouped into five dimensions i.e. (i) Decision making (ii) employment, (iii) technological empowerment (iv) financial empowerment, and (v) mobility. Decision-making is evaluated based on four categories (person who usually decides on household purchases for daily needs, person who decides how to spend respondent's earnings, autonomy to sell the house, and autonomy to sell the house). Employment is assessed by: (whether respondents are working or not). Another dimension, technological empowerment, is analyzed by three items (owning a mobile phone, using the internet, and using the mobile phone for financial transactions), technological empowerment is determined using: (whether the respondent has an account in a bank or any other financial institution). Finally, women's mobility is checked through a variable (person who decides about visits to family and relatives). WEI takes the value 1 when a woman is not empowered and 0, when she is empowered in the above dimensions. Furthermore, other socio-demographic variables such as the age of the respondents and their educational attainment are also used in the analysis. Out of 50,495 women, 33163 women have no education or have not completed primary. 8749 women have completed the primary level of education. 3,903 women have completed secondary, and 4,680 women have received education higher than secondary education.

The frequency present in Table 1 suggests that out of 50,496 women in the selected sample, 52% of the women cannot make a decision regarding their healthcare. These decisions are taken by their husband or other family

members, whereas 48% of the women can make health care decisions for themselves. 49 % of the women in the available data set consider the distance from the healthcare facilities as a barrier to healthcare access, whereas 51% of the women don't face such a barrier. Table 1 suggests that 74% of the women don't have access to medicines and 26% of the women have access.

Table 1: No. of Deprived and Non-deprived Women from Health Care Access

Health Poverty Index	Deprived (1)	Not deprived (0)	Total
HP_O	15,170 (30%)	35,325 (70%)	50,495
HP_O1	8,638 (31.5%)	18,798 (68.5%)	27,436
Health Empowerment dimensions			
Person who decides about respondent's health care (HP_D1)	26,059 (52%)	24,436 (48%)	50,495
Distance from health care facility (HP_D2)	24,789 (49%)	25,706 (51%)	50,495
Availability of medicines (HP_D3)	20,407 (74%)	7,029 (26%)	27,436

Source: Authors' Estimation

Statistics shown in Table 2 for the dimension of women's empowerment indicate that 57% of women are not empowered to make decisions regarding their lives. These decisions are taken by other family members. However, other 43% of the women have the liberty to make their decisions. Moreover, as per the stats presented in Table 1, 85% of the women in a dataset are not employed, whereas 15% were employed, which is quite low. Women constitute 49% of the total population of the country. Low participation in the labor force depicted from our sample is another cause of not being empowered in general and health in particular. The technological empowerment dimension suggests that 61% of the women don't have access to technology i.e. phone, internet, or don't use them for financial transactions. However, 39% of the women in the data have access to technology and are technologically empowered.

The fourth dimension, financial empowerment suggests that 94% of the women in the data set don't have a bank account, whereas only 6% of the women have a bank account. This estimate shows poor financial empowerment among women and their dependency on other family members. Furthermore, 61% of the women don't have the liberty to make the decision regarding their mobility, which is quite a high percentage. They have to seek permission or be accompanied by someone to go to any place. These indicators suggest the situation of women's empowerment in Pakistan.

Table 2: No. of Women Empowered and Not Empowered in different dimensions.

Women Empowerment Dimensions	Not Empowered (1)	Empowered (0)	Total
i. Decision making (WE_D1)	29,007 (57%)	21,488 (43%)	50,495
ii. Employment (WE_D2)	43,020 (85%)	7,475 (15%)	50,495
iii. Technological empowerment (WE_D3)	30,592 (61%)	19,903 (39%)	50,495
iv. Financial empowerment (WE_D4)	47,225 (94%)	3,270 (6%)	50,495
v. Mobility (WE_D5)	30,787 (61%)	19,708 (39%)	50,495

Source: Authors' Estimation

Table 3 presents the relationship between the women empowerment index with barriers to healthcare i.e. person who decides about respondents' healthcare needs (HP_D1), distance to a healthcare facility (HP_D2), and availability of medicines (HP_D3). Cross Tabulations suggest that a significant number of women face barriers such as decision-making regarding health care. 59% of women are empowered as per the women empowerment index but don't have the liberty to decide about their healthcare needs, which is a significant amount. 23.5 % of women are not empowered in any domain.

Table 3: Relationship of Women Empowerment Index with Decision Making, Distance and Availability of Medicine as Barrier to Healthcare Access

		WEI		
		0	1	Total
HP_D1	0	16,177 (41)	8,259 (76.5)	24,436
	1	23,524 (59)	2,535 (23.5)	26,059
	Total	39,701	10,794	50,495
HP_D2	0	20,049 (50.5)	5,657 (52.4)	25,706
	1	19,652 (49.5)	5,137 (47.6)	24,789
	Total	39,701	10,794	50,495
HP_D3	0	5,511 (26.1)	1,518 (23.9)	7,029
	1	15,568 (73.9)	4,839 (76.1)	20,407
	Total	21,079	6,357	27,436

Source: Authors' Estimation

Moreover, 49.5% of the women who are empowered consider distance as a barrier to accessing healthcare. 50.5% of empowered women don't consider distance as a hurdle to accessing healthcare. Statistics regarding the availability of medicine indicate that 73.9% of empowered women face difficulty getting medicines. Whereas, 26.1% of the empowered women do not face problem in getting medicines. 76.1% of the deprived women don't have access to medicines. These statistics present deteriorated situation of women's health in the country.

Table 4 suggests that an increase in the educational attainment of women results in a decline in the percentage of women facing various barriers. This indicates that women getting higher education leads to less deprivation from healthcare.

Table 4: Relationship of Education with Decision Making regarding Healthcare, Distance and Availability of Medicine as Barrier to Healthcare Access

		Education				
		No Education or less than primary	Primary Completed	Secondary Completely	Higher	Total
HP_D1	0	13906 (42)	4927 (56)	2,397 (61)	3,206 (68.5)	24,436
	1	19257 (58)	3822 (44)	1,506 (39)	1,474 (31.5)	26,059
	Total	33163	8749	3,903	4,680	50,495
HP_D2	0	14097 (42.5)	5298 (61)	2,641 (67.6)	3,670 (78.4)	25,706
	1	19066 (57.5)	3451 (39)	1,262 (32.3)	1,010 (21.6)	24,789
	Total	33163	8749	3,903	4,680	50,495
HP_D3	0	4661 (22)	1331 (34.9)	492 (37.8)	545 (47.2)	7,029
	1	16501 (78)	2487 (65.1)	810 (62.2)	609 (52.8)	20,407
	Total	21162	3818	1,302	1,154	27,436

Source: Authors' Estimation

3.2. Methodology

After computing the index for health poverty and women empowerment, Principal Component Analysis (PCA) was done to check the correlation among variables of the health poverty index (HP_D1, HP_D2 & HP_D3). Further, following logit models presented in Equation 1 and Equation 2 were formulated to analyze the impact of the explanatory variables on the outcome variables.

$$HP_0 = \alpha_0 + \alpha_1 WEI + \alpha_2 Age + \alpha_3 Edu + U_1 \quad (1)$$

$$HP_1 = \beta_0 + \beta_1 WEI + \beta_2 Age + \beta_3 Edu + U_2 \quad (2)$$

Where, HP_0 represents the first Health Poverty Index, HP_1 represents the second Health Poverty Index, WEI represents the Women Empowerment Index, Age represents the age of the respondent, and Edu represents the educational attainment of the respondent.

4. Discussion and Conclusion

PCA has been done to check the correlation among variables on Health Poverty Index. To estimate the impact of explanatory variables on outcome variables, explanatory variables have been regressed on Health Poverty Index. Results are discussed in the next sections.

4.1. Principal Component Analysis

Principal Component Analysis results suggest that principal components are uncorrelated. The first component has a variance of 1.2620 explaining 42% of the total variance. The second principal component has a variance of 0.944 explaining 31% of the total variance. Both components are uncorrelated as they don't explain the same information. Values of PCA are presented in Table 5.

Table 5. Principle Component Analysis of HP_D1, HP_D2 & HP_D3

Table of Principle Component Analysis of HP_D1, HP_D2 & HP_D3				
Component	Eigenvalue			
Comp1	1.2620			
Comp2	0.9448			
Comp3	0.7930			
Principle Components (Eigenvectors)				
Variable	Comp1	Comp2	Comp3	Unexplained
HP_D1	0.6137	-0.4466	0.6511	0
HP_D2	0.6574	-0.1676	-0.7347	0
HP_D3	0.4372	0.8789	0.1907	0

Source: Authors' Estimation

4.2. Regression Analysis

For the regression analysis, health poverty is taken as the outcome variable, whereas women empowerment, age, and education are taken as explanatory variables. Logistics regression estimates presented in Table 6. Logit models are used when dependent variable is a binary variable. Both Health poverty Index (HP_O , HP_O1) are binary variables have value 0 and 1. Estimates suggest that women's empowerment has a statistically significant impact on health poverty. Empowering women results in a decline in health poverty and women bear fewer barriers to health care. When women have greater control over their lives, they are more likely to make informed decisions about their health and seeking care. Furthermore, age has a statistically significant impact on health poverty.

Table 6: Effect of Women Empowerment, Age and Education on Health poverty (HP_O)

	Coefficient	P-value
WEI	-.2394***	0.000
Age	-.0079***	0.000
Educational attainment	-.0745***	0.000
Constant	.7298***	0.000

Source: Authors' Estimation

Coefficient estimates suggest that with an increase in age, women face fewer barriers to health care. These results are aligned with (Mumtaz & Salway, 2005; Habib et al., 2021), which suggested that younger women tend to face more socio-cultural restrictions as compared to older women. Lack of knowledge and financial constraints about their health conditions at the younger age aggravates the situation for young women.

Education is another important variable, which suggests that highly educated women are less deprived of healthcare access as compared to uneducated women. Muhammad et al. (2021) suggested that educated women are more empowered. Our results also suggest that an increase in the level of education of women results in a decline in health poverty by empowering women in other dimensions. Educated women are more likely to have health literacy and higher understanding of health care needs which enables them to make more informed decision.

Data for the availability of medicine was available for selected observations. Therefore, another index for health poverty (HP_O1) was computed using 27,436 observations and considering three barriers to accessing healthcare. Estimates in Table 7 are aligned with the results of the previous index. Women's empowerment, age, and educational attainment have a statistically significant effect on health poverty. Empowerment of women results in a decline in health poverty and makes the situation better for women, as previously suggested, young women face more hurdles, and an increase in age and educational attainment results in a decline in hurdles in health care.

Table 7: Effect of Women Empowerment, Age and Education on Health poverty (HP_O1)

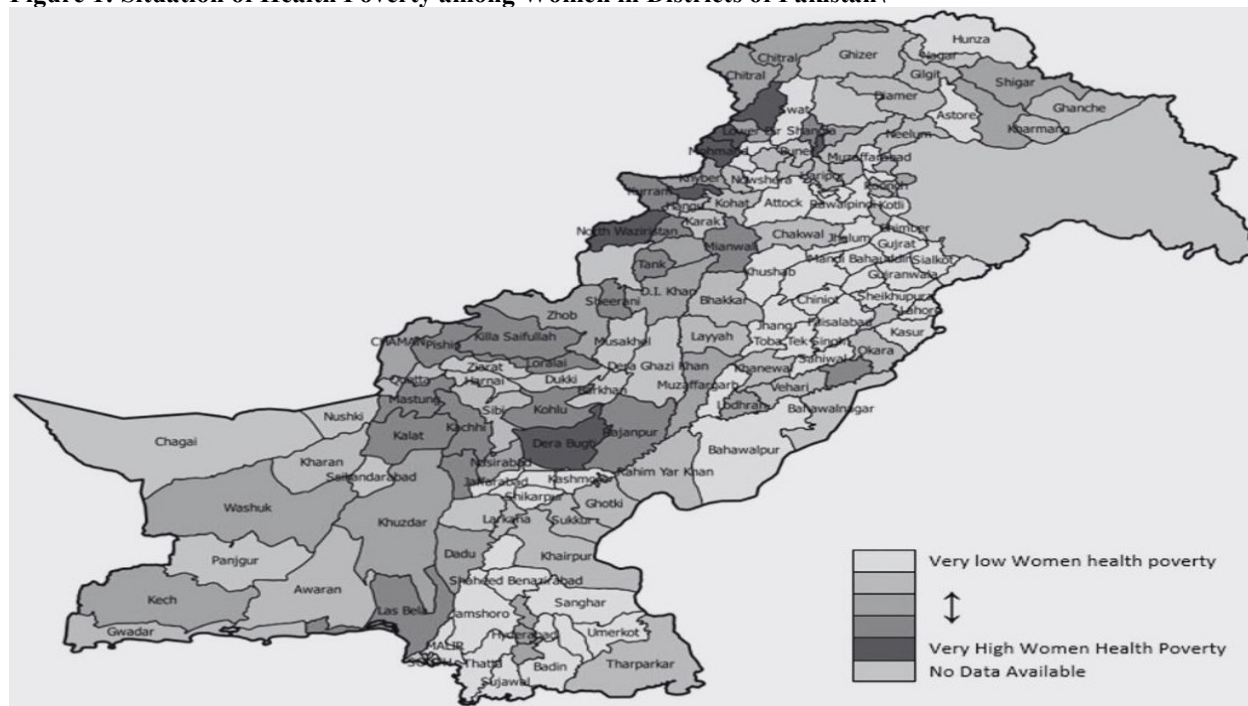
	Coefficient	P-value
WEI	-.2234***	0.000
Age	-.0076***	0.000
Educational attainment	-.0754***	0.000
Constant	.6995***	0.000

Source: Authors' Estimation

4.3. Spatial Analysis

QGIS has been used to evaluate the regional difference in health poverty and women empowerment in Pakistan. Figure 1 presents the situation of health poverty among women across districts of the country. Figure 2 presents the situation of women's empowerment across various districts of Pakistan.

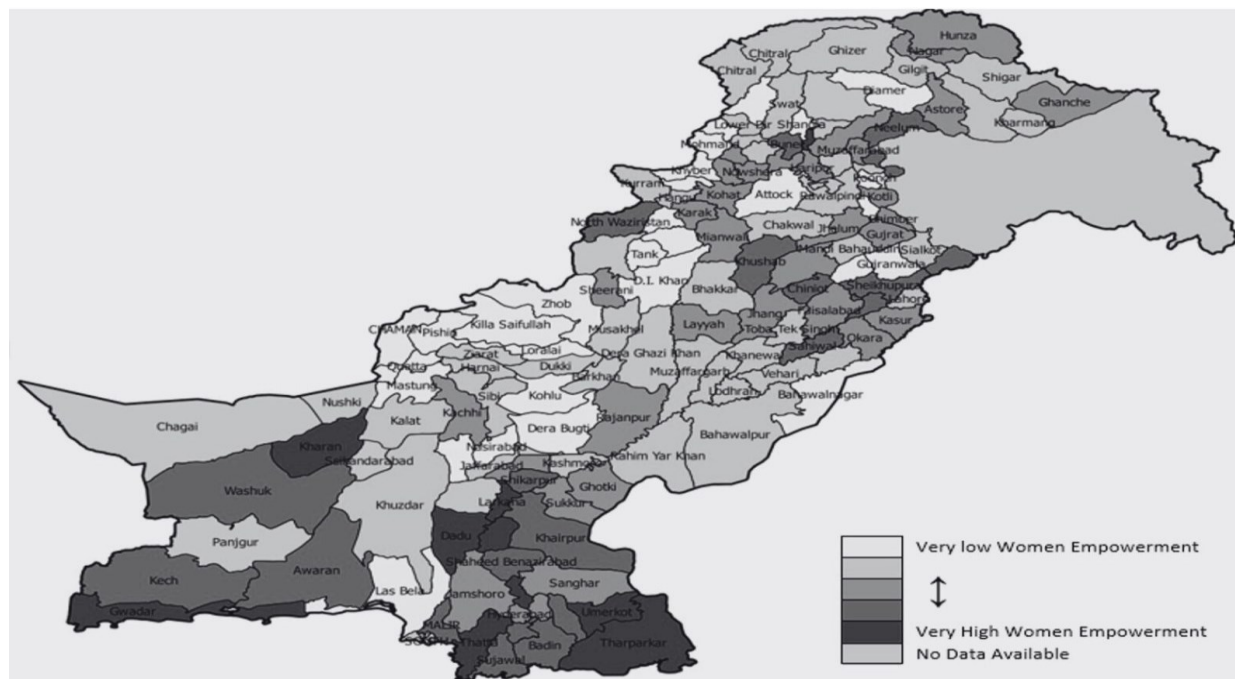
Figure 1: Situation of Health Poverty among Women in Districts of Pakistan



Source: Author's Compilation Based on Data

Spatial analysis of Pakistan presents that out of 143 districts in a data set, health poverty among women is highest in district Dera Bugti, followed by South Waziristan, FR Bannu, and Upper Dir district. However, health empowerment among women is highest in Narowal, Chiniot, and Kasur districts. Furthermore, women in urban districts of Karachi, Lahore, and Islamabad face fewer barriers as compared to women in rural districts such as Tor Ghar, Tank, and Pak Pattan. These estimates of health empowerment align with women empowerment estimates. Areas, where women are more empowered, are the same areas where health poverty is low among women. Data for a few districts were not available. Therefore, it is concluded that women face fewer barriers or health poverty when they are empowered in other domains such as decision-making, employment, technological empowerment, financial empowerment, and mobility.

Figure 2: Situation of Women Empowerment across Districts of Pakistan



Source: Author's Compilation Based on Data

5. Conclusion

This paper has quantified health poverty among women in Pakistan and the factors affecting it. The situation of women's health empowerment across districts in Pakistan is also discussed in the study. The data set was taken from PDHS 2018-19. We computed two indexes for health poverty and women empowerment index to understand the impact of women empowerment, age, and educational attainment on health poverty among women. Women face barriers at multiple levels to access health care. Three significant barriers include the decision to spend on her health care needs, distance, and availability of medicine. Data on medicine was available for 27,436 observations. Therefore, two health poverty indexes were computed. The first index was computed by taking all observations and two barriers. The second index was computed using selected observations and three barriers to health care. Furthermore, the women empowerment index was computed by selecting ten variables and putting them in five categories. These categories are decision-making, employment, technological empowerment, financial empowerment, and mobility. Cross tabulations show that percentage of deprived women in each category is more than 50% and is highest in financial empowerment. 94% of the women in the country are not financially empowered. These estimates present the worrisome situation of women's empowerment in the country. The health poverty index also suggests that a large number of women in the country are deprived of healthcare and face these barriers.

Furthermore, regression analysis suggests that women's empowerment, age, and educational attainment have a significant impact on health poverty. Empowering women and educational interventions can improve health and poverty conditions in the country. Young women have poorer health conditions as compared to older women. With the increase in age, health poverty declines. Spatial analysis has also been done using QGIS. District-wise averages of health poverty suggest that women in district Dera Bugti face most barriers to accessing health care and thus have poor health conditions. Women in urban districts such as Karachi, Lahore, Islamabad, Narowal, etc. have better health access. These averages align with women empowerment averages. Areas, where women are empowered, are the same areas where health poverty is low.

Therefore, Health care access and empowerment are closely linked in the case of women. Empowering women is significant to improve health outcomes by addressing the underlying social, cultural, and economic challenges. Women who have better education, access to economic resources, and enjoy autonomy are more likely to have better health outcomes. Equal access and the use of digital technologies are central to the empowerment of women and girls. However, improvement in the current situation of health care services requires interventions, which are

gender sensitive and culturally appropriate. It requires interventions that consider the experiences and needs of women to address the cultural and social barriers they face.

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Exploring Potential, Achievements and Problems in Pakistan's Sports Sector

^a Uzma Zia, ^b Abu Bakar Sadiq, ^c Samina Naveed

^a Senior Research Economist, Pakistan Institute of Development Economics (PIDE), Islamabad, Pakistan. Email: uzma@pide.org.pk

^b M.Phil. Scholar, Pakistan Institute of Development Economics (PIDE), Islamabad, Pakistan. Email: absidiq5851@gmail.com

^c Assistant Professor, National University of Science and Technology (NUST), Islamabad, Pakistan. Email: samina.naveed@S3h.nust.edu

ARTICLE DETAILS

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ABSTRACT

Objective: The objective of this study is to assess the potential, performance, and achievements of the sports sector of Pakistan

Research Gap: Although attention is paid to sports industry and sports activities internationally but there is a notable research gap in the facilitation and development of the in-house sports industry, particularly in terms of industrial growth and academic research.

Design/Methodology/Approach: This study uses mixed methods to assess sectoral export potential, focusing on intensive and extensive margins. Employing the Amiti and Freund (2008) technique, it delivers a dynamic analysis of export market changes, supported by key informant responses and secondary data.

The Main Findings: Findings show that the export growth of Pakistan's sports goods industry from 2010 to 2020 has been highly volatile, marked by periods of increase and decline. Despite a few strong growth years, the overall export value showed a decrease, largely due to a reliance on existing products, indicating a lack of innovation in goods. The COVID-19 pandemic caused significant losses in 2020. However, the sector's potential for revival remains strong, supported by its reputation for quality products. The growth is witnessed from intensive margins in the industry while the sports industrial cluster/EPZ needs due attention.

Theoretical / Practical Implications of the Findings: Pakistan's sports goods industry must focus on innovation and product diversification to boost exports. Developing industrial clusters and Export Processing Zones (EPZs) can enhance growth, while improving supply chain resilience is essential for industrial management. Capacity building of the workforce is essential for supporting competitiveness. Influencing the sector's strong reputation through effective branding and marketing can help capture new markets.

Originality/Value: This research is original and finds decomposed margins in sports sector in Pakistan and realizes the potential, need for innovation, investment and robust policy support.

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Corresponding Author's email address: uzma@pide.org.pk

1. Background

Industrial development plays a role in the economic development while providing employment opportunities ensuring improved utilization of domestic skills & resources. It is not a question of innovation and R & D, but recognition that something being exported should be produced competitively at domestic level. Industrial export growth is always in focus for a country to achieve some competitive levels in international trade but a thought-provoking issue for developing countries is the need to reduce their reliance on customary export products while increasing export of new products.

Export diversification becomes important for developing countries and Pakistan is no exception to it, as it develops export competitiveness by widening the of export products, thus reducing dependence on customary exports that have an inclination of decreasing terms of trade (Ekman- Ozcelik and Erlat, 2013). Therefore, export diversification can be accomplished by altering the share of prevailing products (intensive margins) and moving towards new products in the export portfolio (extensive margins) to meet competition needs internationally.

Overall clusters enhance operational efficiency through specialization, enhance technology spillovers, bring innovation (Arif and Asadi, 2011), build synergies across firms & associated institutions, bring better marketing coordination opportunities (Sonobe and Otsuka, 2006), diffusion of best practices through human skills & better technology, increase productivity through employment generation, encourage value added exports, facilitate market internationalization (Sonobe and Otsuka , 2006) and profit margins thus promote exports. Many industrial clusters exist in Pakistan contributing to its trading sector.

In Pakistan the recent industrial policies i:e Strategic Trade Policy Framework: STPF 2015-2018; STPF 2020-2025 have shown special focus on export diversification. It is seen, in number of small countries having flexible economic policies, clusters or export processing zones have contributed to boost exports (Hone, 1971). Industrial clusters in various countries, merged with special economic zones, have seen to contribute meaningfully to gross domestic product, employment, exports enhancement, and attracting foreign investment. As according to Zeng (2011) the special economic zones have brought in novel expertise and adopted up-to-date management practices. Pakistan is now moving towards digitalization, technology adoption, and innovation in all sectors where coordination of clusters and export processing zones is important. Presently, there exist several industrial clusters relating to various industries in Pakistan. Amongst which there exist sports goods cluster in Sialkot which is of our interest in this study.

The central objective of the study is to discover the Pakistan's sports sector performance (sports goods industry, sports industrial cluster/EPZ) while assessing its export potential, current performance, and achievements. The "sports goods industry" is chosen because the sports goods sector is extremely resourceful and export oriented but appears to be working in a slower mode (in terms of export growth). The "sports industrial cluster/EPZ" is considered to assess performance of public-private partnership. The study will find the intensive margin of trade (growth of exports in already exported goods¹) and the extensive margin (growth of exports in new goods) to get insights for future sports goods exports.

Despite of adopting some technology in sports goods industry, the performance of the "sports sector" remained sluggish. The novelty has been built in the study by provoking thoughts about paying attention to the sport twins i:e sports goods industry and sports activities/games in Pakistan.

The study is organized as follows: Section two shows present outlook of sports industry: section three highlights the literature review; section four sets out conceptual framework, data and methodology, section five presents Key results, and section six then proceeds to conclude & develop recommendations on strengthening the sports sector.

2. Sports Goods Industry Outlook- Share, Volume and Potential

Pakistan's sports goods industry, plays a dynamic part in international sports trading. Although the industry is based on small industrial cluster, but exporting its products to different countries all over the world. In spite of having potential, the sports goods industry in Pakistan confirms a decline (negative growth of 9.04 percent) in terms of exports (Pakistan, 2018-19). Recently the sports goods again showed a drop both in volume and value by 29.7 and 23.2 percent, respectively (Pakistan, 2020-21).

The sports industry contributes in economy in multiple ways and almost 95 percent of total industry's production takes place in Sialkot. Firms in this industry are largely the small to medium sized enterprises which include about 360 formal and 10, 000 informal units (IGC, 2013). Being a sports goods production hub since years, this cluster is

¹ Old products

an example of agglomeration economies². “The cluster is located in 20 Kilometer radius of city of Sialkot while having several production plants in surrounding areas³ (TDAP Report, 2020). It is highly labor-intensive industry with basic infrastructure facilities, a dry port, and an international airport, it has become a major export center for the manufactured sports goods.

Pakistan’s sports goods have gained worldwide recognition over time; however, the industry has not been successful in gaining a justifiable rising share in global sports exports. Pakistan’s share in global world sports exports is less than 1 % as compared to a significant share owned by leading competitors in this industry like China, Taiwan, USA and Germany. China’s share in global sport goods export is 56 % which make it the leading exporter in this sector followed by Taiwan and USA with a share of 6 and 3 percent (SMEDA, 2021). Currently the Export Promotion Zone Authority (EPZA) in Pakistan listed active EPZ and the Sialkot Export Processing Zone is focused mostly due to sports goods. The product wise sports goods at Sialkot EPZ are manufactured to fulfil international sports goods demand. Because of the good quality of sports goods Pakistan’s sports articles have gained international reputation solely and have become a good source of earning foreign exchange. In the past, Pakistan’s sports goods industry contributed 1.51% in total exports, with the major export of footballs, almost achieving 43% of the sector's total export (Zafar et al., 2017).

Table 1: Exports with Top Five Export Destinations of Pakistan’s Sport Goods

Destination	Exports 2015(US\$ million)	Exports 2016(in US\$ million)	Exports 2017(in US\$ million)	Exports 2018(in US\$ million)	Exports 2019(in US\$ million)	Exports 2020(in US\$ million)
Germany	47.693	50.099	44.959	47.168	40.680	26.846
USA	51.645	40.403	42.913	58.223	55.601	46.530
U. K	36.031	31.386	28.361	32.044	28.426	19.645
Netherlands	16.469	18.059	16.914	19.015	18.984	20.058
Spain	14.582	12.786	12.345	14.053	15.004	12.342

Source: UN Comtrade

Top Five Destinations of Pakistan’s Sport Goods are shown in table 1. The Sports goods are mainly exported to Germany, USA, UK, Netherland and Spain. The exports in US dollar million is shown for the years 2015-2020.

Table 2: Shares of Sports Goods Exports in Total Exports of Pakistan

Year	Total Exports(\$Million)	Sports Goods Exports (\$Million)	Share of Sports Goods in Total Export (%)
2015	21837.32	339.40	1.55
2016	21487.20	320.61	1.49
2017	21349.17	306.95	1.44
2018	24056.12	338.04	1.40
2019	27542.76	308.01	1.12
2020	27979.20	241.31	0.86

Source: UN Comtrade & WDI

Table 2 displays shares of Sports goods exports in total exports of Pakistan. A clear decline in share can be observed from 1.55 to 0.86 from 2015-20. Similarly, table 3.4 below depicts sports sector product wise value & volume in 2018-2020.

Pakistan’s export performance in this sector has been dreary during the recent past, as on average during the last five years, the country has witnessed negative growth trends with the exception of only two years (2016-2020).

² Local economy where a large number of industries and services are présent in close proximity to one another and benefit from the cost reductions and efficiency gains.

³ Wazirabad Road, Marala road, Daska road Pasrur road and Small Industrial Estate, Sialkot

The exports have also declined by 13.7 % during 2020-2021 (Pakistan Economic Survey, 2021). The category of sports goods in Pakistan which constitute major share in total sport's goods export is "inflatable balls" and Pakistan is also one of the major exporting countries of this category in the world's exports. The sport industry presently caters to almost 60 % of world demand of "hand stitched inflatable balls" which constitute a production of almost 39 million balls annually. Pakistan has been the largest exporter of footballs for various mega events and supplied "Telstar 18 footballs" in FIFA World cup 2018, and "Brazuca for the Soccer" World Cup of 2014. However, this category/product of inflatable balls has also witnessed a decline both in terms of quantity and value by 29.7 and 23.2 percent, respectively during 2020-2021 (Pakistan, 2020-21). Besides this, Pakistan's export performance in other key sports goods like "articles of gymnastics/athletics, fishing apparatus, and funfair tokens" are lackluster and far behind its competitors (SMEDA,2021). In addition, some other constraints faced by the industry are: absence of better managerial skills, absence of succession plans, lack of policy initiatives and general policy ambiguity stemming from Government decisions (SMEDA,2021). For a resilient and sustainable sport goods industry, there is a need to resolve these issues so that industry can pick up its lost growth momentum and become a competitive global export industry.

Table 3: Product Wise Value & Volume of Sports Goods

Commodity Code	Commodity	2018 Trade Value (US\$)	2019 Trade Value (US\$)	2020 Trade Value (US\$)
89471	Fishing-rods, fishhooks & other line tackle; fish-landing nets, butterfly nets & similar nets; decoy birds (further than those of heading 896.5/898.29) & alike hunting/shooting requisites, n.e.s.	376971	223662	349298
89472	Ice-skates & roller-skates (embraces skating boots with skates)	1253	94269	603924
89473	Snow-skis & other snow-ski tools	301773	137849	433875
89474	Water-skis, surfboards, sailboards & other water sport tools	12602	10165	27234
89475	Golf tools	199887	222585	671585
89476	Tennis, badminton/similar rackets, whether/not strung	3958914	5565168	8110483
89477	Gloves, mittens & mitts, particularly designed for sports use	121220727	84137701	63303314
89478	Objects & tools for general physical exercise, gymnastics/athletics.	4285825	4281098	8027838
89479	Sports goods, n.e.s.	207687573	213338823	159786641

Source: UN Comtrade & WDI

Overall performance of sports industry shows marginal improvements and hence bear a decline in its export share. These facts from secondary data clearly indicates that Pakistan's sport goods have world-wide reput and firms have worked individually on expansion and market internationalization.

2.1 Regulatory Structure of Sports Good Industry Management

The presence of several bodies, authorities and associations for sports industry is a big support for sports goods industry. Trade Development Authority of Pakistan (TDAP), Sports Industries Development Centre (SIDC), Regional Business Center (RBC) – Small & Medium Enterprises Development Authority (SMEDA), Sialkot Chamber of Commerce & Industry (SCCI), Pakistan Sports Goods Manufactures & Exporters Association (PSGMEA). As the Sports good industry is mainly targeting its exports without much facilitation by the government. Presence of such authorities are mainly the reason of keeping this industry moving for exporting goods but there is a need to move for extensive margins and export diversification.

Sialkot Export Processing Zone⁴ is an important body established through a MoU between Export Processing Zone Authority (EPZA) and Punjab Small Industries Corporation (PSIC). It started working in 2005 and is established

⁴ Located at Sialkot EPZ at Sambrial on Sialkot Wazirabad Road. 37 operational units.

on area of 238 acres. All operational facilities are provided by EPZA adopting formal rules / procedures. Utilities (Electricity, Gas & Telecommunication) are being provided to SMEs in that area. Value of exports from this cluster is US \$ 21.030 million in 2019-20, and cumulative export is US \$ 58.278 million⁵. The EPZ helps in attracting investments in sports industry along with other industries⁶ present in that area (EPZA website, 2021)⁷. The important sports goods produced in Pakistan are reported in (Anex). These goods are famous exports and enjoy market recognition all over the world. With time, the Sialkot cluster enjoys connection with major world level brands (Adidas, Nike, Puma, Select, Lotto, Umbro, Wilsons) and supply sporting goods to these international icons (IGC, 2013).

3. Literature Review

This section is designed to highlight prospects of sports sector of Pakistan. The availability of literature on the sports sector, its performance, and achievements across the world mentioned by Afraz et al. (2014), IGC (2013), Zafar et al., (2017), SMEDA report (2021) shows that some attention is paid to sports industry and sports activities internationally, but in-house problems exist which shows the industry needs some serious facilitation.

3.1 Sports Goods Industry in Sialkot

The history of the sports industry in Sialkot dates back 200 years. For the first time, the foundation of an industry was laid to produce sports goods for the British army. Gradually, the factory expanded its production from cricket bats, polo and hockey sticks to more sophisticated products like sportswear and improved sports items. Sialkot is now considered as the hub of sports goods production in Pakistan, having formed a cluster consisting of small and then medium-sized firms with 360 or more formal and 10,000 or more informal units, and approximately 95% of sports goods production takes place in the city of Sialkot (Zafar et al., 2017).

Moreover, the sports industry experienced a transition at the time of independence and then successfully expanded its production of (sports) goods, while major product manufacturing technological shifts in the sport industry occurred during the 1980's, which discouraged Pakistan's exporters of sports goods. Due to this technological change, Pakistani exporters fully relied on the imports of the composites, and hence the manufacturers were unable to survive at that time. As a result, they had to shut down their setups and left the industry (Khan and Khalique, 2014). After that the remaining exporters made efforts to excel at their own. Currently, there are five major categories of sports goods manufactured in Pakistan composed of "articles and equipment for physical exercise, gymnastics, and athletics; articles and equipment for fishing; sports gloves; articles and accessories for billiards; and articles for funfairs". The sports industry is a vital source for the economy of Pakistan by providing employment opportunities directly and indirectly. A total of about USD 177 million in total sports products were exported during 2020. Of these, 70% of the contribution towards the sport goods exported was from inflatable balls (SMEDA, 2021).

The sports industry is confronting with a myriad of issues and challenges which restrain the growth of these firms. Not only that, but these firms are also unable to change their status from small and medium-sized to large sized manufacturing firms. The issues include a shortage of energy/power, technological issues, and skilled labor issues. Moreover, the effect of COVID-19 on the export of sports goods was witnessed due to meagre industrial production during 2020-21, as the export of sports goods dropped from \$222.7 Billion in 2019-20 to \$192.2Billion, which shows a negative change of about 13.7% (Pakistan, 2020-21)⁸.

Pakistan's government is focusing on the development and growth of industries to achieve sustainable economic growth. Unfortunately, they ignored the sports industry, which is a much more competitive industry and has the potential to contribute more to economic growth. Globally, the sports industry of Pakistan is a well-reputed and has achieved good fame, but this industry is unable to convert this opportunity into long-term and sustainable growth for the country. Although the sports industry is playing a very important role in the economic growth of Pakistan through its major contribution to export growth, but yet its own flourishing remains contracted. A survey by

⁵ Other industries also included.

⁶ Surgical goods, leather products & garments, furniture, imitation jewelry

⁷ <https://epza.gov.pk/>

⁸ Pakistan Economic Survey

Zafar et al.(2017) pinpointed that in the sports sector, the main constraint to the growth of small firms is their inability to bring innovation and diversification to their product lines. Moreover, firms that have produced a variety of products and changed themselves in accordance with global demand have achieved higher growth. Diversification of products into new and existing products spurs export growth.

Furthermore (Zafar et al., 2017) found the issues and challenges facing the sports industry in Pakistan. They also focused on the contribution of the sports goods industry to the growth of economy. According to the study, the sports sector, despite being an important base of economic growth in Pakistan, is facing a number of challenges, including a lack of skilled labor, technology, infrastructure, waning government interest, and a power shortage. If the government really wants to improve the performance of this sector, then it should focus on the aforementioned constraints along with ensuring subsidy and credit facilities to the exporting firms in the sports industry at least.

On the other hand, (Khan and Khalique., 2014) conducted several interviews with stakeholders from small and medium manufacturing firms of sport goods. They identified the constraints faced by these firms. During the interviews, it was revealed that these small and medium-sized businesses are not borrowing from commercial banks due to the high interest rates. The management practices, specifically in small and medium firms, are dispensed by the possessor, which is another obstacle to the growth of that specific firm. The chief but inefficient labor force contributes to the firms' low productivity. To add to this, innovation and investment in R&D are lacking in Pakistan's sports industries and their inability to diversify their products according to the global demand pattern. The most serious problem which affects firm efficiency and productivity is the shortage of energy. The study done by Afraz et al. (2014) considered the engineering sector which also undertakes sports goods industry.

Concluding the review of literature, it is observed that Pakistan's share of sports goods exports has deteriorated. The sector has also recorded the high negative annual growth of exports as compared to its entrants specially noted for articles of gymnastics/athletics, articles /equipment for fishing, and funfair items.

3.2 Industrial Clusters & Export Processing Zones

As the industrial clusters in Pakistan share traits of networking by establishing links between local enterprises (public, private), as well as supporting organizations (e.g., local governments, research institutions NGOs, export processing zones). Industrial clusters enhance access to markets and help to improve information flows. The rapid advances in communication technologies can be expected adding to more profit margins. It is important to assess the linkages among industrial cluster and EPZ.

3.2.1 Performance of Export Processing Zones

There is some literature which provides evidence of decreasing degree of export intensity in developed or developing economies (Crespo and Worz,2005). Some studies focus on increasing industrial specialization (Aiginger and Davis, 2004; and Brulhart, 1998). According to Madini (1998) export processing zones are suitable to promote export promotion and frames the general structures of these zones. Having some shared common features, export zones are also distinguished by public/private ownership, by management, facilities, and services they offer. Zones can play an active role if properly managed with new amendments, and liberalization agendas.

Export Processing Zones (EPZs) tend to exert a positive effect on the welfare in the host country through higher wages offered to the local workers (Akhtar, 2003). Additionally, (Sivalingam, 1994) and (Warden, 1999) provide credible evidence using various case studies in explaining the advantageous effects of EPZs. After following a strict Import Substitution Strategy (ISS), Pakistan moved towards export promotion in the 1980s and the first EPZ was established in Karachi in 1989. Seven Special Economic Zones (SEZ) were established between the period 1983 to 2005 (Naeem, et al., 2020). Later in the SEZ Act in 2012, Pakistan encouraged six industrial estates and offered them the prominence as SEZs (Khan, 2019)⁹.

Another key research critically analyzes Pakistan's sports policy, focusing on its design, development, delivery, and public evaluation. Evaluating the period 2019–2021, the research highlights key trends and challenges faced by

⁹ Industrial Estates (Bhalwal, Multan (Phase-II), Rahim Yar Khan and Mianwali , Rawalpindi and Dera Ghazi Khan).

sports organizations in a politically unstable setup. The study finds that administrative inefficiencies and the devolution of the Pakistan Sports Board, following the 18th constitutional amendment, have hindered effective policy implementation. Moreover, a lack of public and private investment, along with inequitable fund distribution, has limited the role of sports in socio-economic development. The authors concluded that Pakistan's sports policy and structures fall short of international standards and require significant reforms (Ali et al., 2023).

In addition to this, Ahmad et al. (2023) estimated Pakistan's export potential for both new and existing products, along with potential destination markets, using a nonparametric approach based on demand, supply, and some ease factors. Their findings reveal a significant number of new export products (extensive margin) and existing products (intensive margin) with untapped export potential. They estimate the unrealized export potential to be \$2 billion at the extensive margin and \$5 billion at the intensive margin. The identified new products span a range of value-added, semi-finished, and intermediate goods.

This study adds value by addressing the underexplored margins in-house sports industry, providing insights into its challenges and new prospects. It encourages policy agendas to support industrial growth, enhance competitiveness, and promote R&D options within the sector. The study aims to encourage sustainable practices for SMEs to improve productivity and market access. By filling a gap in literature, it also contributes to the wide-ranging understanding of the sports industry's potential for country's development.

4 Theoretical Framework

Export diversification is evident for economic growth, however customary trade theories mostly emphasize specialization. Adam Smith & David Ricardo advocate for specialization in areas of comparative advantage, while the Heckscher-Ohlin theory suggests focusing on factor intensity. However, modern trade theories now emphasize the part of export diversification in driving economic progress. Various studies offer ways to decompose trade growth (e.g. Hummels and Klenow, 2005; Felbermayr and Kohler, 2006; Prusa and Besedes, 2007). This study aims to see the decomposition of fluctuations in export market and its decomposition will be compatible with the technique used by Amiti and Freund (2008) and draws dynamic analysis over the period of study. Modern literature has emphasized the part of export diversification and market internationalization in economic progress. Thus the concept of diversification can be studied in more detail with intensive and extensive margins of sports good industry. These margins explore how importantly they are contributing for economic growth. Keeping in the scenario built on Pakistan's sports sector, this study looks for intensive and extensive margins in products exports. Feenstra's (1994) innovative work on measuring import prices by accounting for the introduction of new goods resulted in an index of variety growth, which has been extensively utilized in subsequent research. Based on this work, the technique has also been used to find China's export growth (Amiti and Freund, 2008).

As discussed, the objective of the study is to discover the sports sector (sports goods industry, sports industrial cluster/EPZ, sports activities/games) of Pakistan while assessing its export potential, performance, and achievements.

4.1 Mixed Methods Approach

The overall methodology is designed as initiating with quantitative part for the assessment of intensive and extensive margins of sports sector makes this study unique so as to get to know how much old & new products are producing margins. Second part is conducting few qualitative interviews with exporters, chamber of commerce, and exploring secondary data facts from webinars, and reports.

4.1.1 Quantitative Assessment:

For the quantitative analysis, (Amiti and Freund, 2008) decomposition methodology is used, focusing on the value¹⁰ of exports. This approach is ideal for analyzing a country's export growth over time, as it breaks down growth into three components from one year to the next, rather than comparing countries. Following (Amiti and Freund, 2008), we have applied this decomposition to assess year-to-year export growth in three ways:

¹⁰ It does not consider the shares in the import market.

- Intensive Margins shows increase in the export of existing product¹¹
- Disappearing goods shows the decrease in the export growth¹²
- Extensive Margins shows the new goods¹³

Formally writing in equation form we have

$$\frac{\sum_j x_{t,j} - \sum_j x_{t-1,j}}{\sum_j x_{t-1,j}} = \frac{\sum_{j \in I_t} x_{t,j} - \sum_{j \in I_t} x_{t-1,j}}{\sum_j x_{t-1,j}} + \frac{\sum_{j \in I_t^N} x_{t,j}}{\sum_j x_{t-1,j}} - \frac{\sum_{j \in I_t^D} x_{t-1,j}}{\sum_j x_{t-1,j}} \quad (1)$$

(Export Growth) (Intensive margin) (Extensive margin)

Extensive margins as demarcated by (Freund, 2008) are the modification of “the New Goods component and the Disappearing Goods component.”

Whereas, IN_t is the goods exported by the country in the current time period t (excludes previous year goods and considers new products); ID_t refers to goods that were exported in the previous year but are not exported in the current year (disappearing products); I refers to the products exported in both the years (current and previous); $X_{t,j}$, $X_{t-1,j}$ refers to the values of the exports of “product j ” in the current year t and the previous time period $t-1$, respectively.

The product exports data in terms of values is taken for sports industry of Pakistan. Data are taken from UN Comtrade. However, the study has done decomposition of export values from 2010-2020. Data for all product exports at 5-digit level of SITC Rev4¹⁴ classification are collected.

4.1.2 Qualitative and Secondary Data Assessment

For the qualitative assessment, the study moved towards having few interviews from key stakeholders of Sports industry. Purposive sampling has been done. We also searched secondary sources including data sources, local and international media sources, PIDE¹⁵ webinar discussions to get accurate knowledge of the issue.

4.2 Empirical & Quantitative Assessment

Another objective of this study is to analyze the extensive and intensive margins in the export growth of Pakistan's sports goods industry. The quantitative method is adopted to address this aim.

4.2.1 Extensive and Intensive Margins

This section presents some note-worthy results for sports goods. Decomposition of the export growth of sports goods (SITC 5- Digit), is adopted, to find margins (extensive and intensive margins) for 2010-2020. With effective export diversification, Pakistan can have improvement in its global terms of trade for sports goods and develop a more dynamic export sector.

Table 4: Intensive-Extensive Margins of Export Growth- Sports Goods

Division 89, Sports Goods(5-digit)					
Share of export growth					
Year	Export growth (%)	Intensive (%)	Extensive (%)	New (%)	Disappearing (%)
2011	5.67	5.68	-0.0004	0	0.0004
2012	1.69	1.68	0.0110	0.0111	0
2013	-2.77	-2.77	0.0005	0.0005	0
2014	10.42	10.42	0	0	0

¹¹ The increase in product export growth in both years.

¹² Products exported in the base year but not in the final year.

¹³ Increase in export because of the export of the new products.

¹⁴ SITC classification gives more meaningful results in product data.

¹⁵ PIDE is a think tank producing research material on several economic and policy issues.

2015	-7.31	-7.31	0	0	0
2016	-5.53	-5.53	-0.0028	0	0.0028
2017	-4.25	-4.25	0.0008	0.0008	0
2018	10.12	10.12	0	0	0
2019	-8.88	-8.88	0	0	0
2020	-21.65	-21.65	0	0	0
2010-2020	-23.95	-23.96	0.0070	0.0070	0

Note: All the values are in the percentage form.

Source: Author's contributions

Table 4 shows that export growth of sports goods increased by 5.67 percent in 2011. In 2012, the percentage increase in the export growth of sports goods was only 1.6 percent compared to the previous year. Export growth was negative during 2013, but it showed high growth of up to 10.42 percent during the year 2014. Again, a decline was observed as it was -7.31, -5.53, and -4.25 percent during 2015, 2016, and 2017 respectively. During 2018, once again, the growth of exports increased by 10.12 percent as compared to the previous year but decreased during 2019 (-8.88%) and 2020 (-21.65%). The finding of negative growth rate in 2020 is consistent with the figure mentioned by SMEDA (2021). The export growth rate showed several ups and downs in Pakistan's sports goods industry.

If we consider the export growth of sports goods during the period from 2010 to 2020, it is evident (from the table 5) that the growth of exports decreased to -23.95 percent (in value terms). It is also indicated that the contribution to the export growth of sports goods is mainly from intensive margin while a little contribution is from extensive margins. Looking at the "new" and "disappeared" goods, it appeared they have very little contribution in margins from new goods. This addition of new goods to the sports goods remained negligible. In particular, Pakistan's export of sports goods is moving around these 10-12 goods only, confirming the growth was basically from intensive margins. For the period 2010-2020, the export of sports goods (in value terms) increased because of the increase in the existing goods, not because of the new goods. This shows lack of investment, innovation, and lack of policy support in the industry.

The decline in the export growth of sports goods during 2020 is the effect of COVID-19 which have badly affected the business in sports industry. The repercussion of COVID-19 on the sports industry was severe and it also halted the sport events in the whole world for a while. The industry is running in losses as shown in results and consistent with the findings of Manzoor et al., (2021). There is a decrease of about 23 percent in the exports of Pakistan's existing sport goods and products.

The "sports goods industry" has shown fluctuations in export growth since 2010 as this industry is forward looking, and entrepreneurial as indicated by Afraz et al., (2014). In 2011, the export growth is witnessed as 5.6, in 2014 export growth is 10.4, while in 2018 the sector again showed growth in exports reported as 10.12. This shows that the sector has potential to revive its export growth rate due to its fame, quality products and presence of raw material in the same cluster.

5 Key Findings

5.1 Qualitative Aspect- Evidence for Sports Goods Industry

This section targets to spotlight the position of the sports goods industry (Sialkot cluster) by analyzing content through secondary sources. Despite of having potential in sports sector, the performance remained mixed in terms of export growth. As seen in section 3 (table 3) the export growth is declining, so this leads us to discover the key reasons that causes slow growth in this industry. The qualitative part of the study and secondary evidence has identified the causes behind the decrease in export growth. Sialkot's sports industry, as discussed in PIDE, (2021) despite being the hub of sports goods manufacturing for decades, Sialkot's sports industry has not evolved into a significant conglomerate. There are several issues that prevent the process of growth as also identified by Ali et al. (2023). Despite being famous internationally, the in-house performance of industry is not very impressive.

Infrastructure and energy shortages: Major problems are the unavailability of sufficient physical infrastructure, and energy shortages. These factors force the existing firms to use their resources in an arranging necessary

infrastructure and energy needs. In fact, this prevents them to focus on their products, and invest much in sports related products (PIDE, 2021).

Lack of human resource development: The industry is more labour intensive; hence the labour needs to learn skills. Shortage of training associations for technical training of labor is another constraining factor. Some institutes exist under public sector but lacks quality training which doesn't produce skilled labor. Another constraint is that some government bodies harass the businesses (as reported by businesses) through discriminatory regulations and heavy taxation (PIDE, 2021).

In-country regional discrimination: Another concern is the regional discrimination as the entrepreneurs of big cities (Lahore, Karachi, Faisalabad etc) enjoys special grants from public sector while Sialkot the sports hub has not been privileged. The SMEs in Sialkot needs public sector attention so that small entrepreneurs can get equal chances to grow (PIDE, 2021). They need loans, investments, or ease of doing business.

Issues of allied industries: There are some issues of allied industries, for example, the relocation of tanneries (industrial base) to safe industrial sites due to environmental considerations. Relocation of the industry takes 2-3 years due to the shift of heavy machinery. When due facilitation is not provided from the public bodies, the process may become difficult for entrepreneurs, and may harm the exports of sports sector (PIDE, 2021).

No domestic market and no prominent branding: The view of industrialist captured from a secondary source leads us to think there is no domestic market for sports, and no prominent branding for sports. When it comes to exports, lesser product diversification exists.

High production cost & freight charges: The industry faces very high freight charges for both air and sea freight shipments along with lack of availability of containers. Decrease in flight operations and increase in transit time is an added challenge. Due to high courier, sea freight and air freight rates, the exports of small industries are suffering. High production costs due to increase in prices of raw materials, electricity and gas bills. Congestion at destination airport and seaports, considerable increase in air and sea freight prices, and shipping schedules are not being followed by the shipping lines. Problems are faced in importing raw materials (like artificial leather, latex, inks, foams, fabrics and garment accessories) as too much transit time is taken by the shipping line as well as the airlines.

Policy measures expected from government: Policy measures are expected from government to boost sports industry such as provision of incentives on electricity and gas bills to export oriented companies of Sialkot; timely execution of DTLT (drawback of local taxes and levies) and launch of one window operation to resolves the issues faced by the industry.

Employability is affected due to high failure rate in establishing new business: The sport goods industry being an intrinsic part of Pakistan's economy and a good source of employment to 300,000 to 350,000 skilled and unskilled laborers. Additionally, the sector signifies roughly 1.42 percent of the country's total export base (Afraz et al., 2014). Despite of being important sector for Pakistan's economy, it is encountered with complications due to inadequate growth prospects. For instance, as mentioned by Afraz et al. (2014) establishments in Sialkot are working as commercial exporters' facing high failure rates due to lack of direction.

Concluding this section, goods produced in Sialkot are mainly cricket bats, footballs and other accessories, lawn tennis, table tennis balls, various types of tennis rackets, squash and badminton and other sports goods. The industry faces problems as there are energy and infra structure shortages, high production costs, lack of new policy measures which affect the sector's performance and competitiveness. The businesses are in direct contact with international firms, even the cost saving technologies are available and applied in manufacturing of these goods. Still the industry needs a push from the government and domestically this market needs to be established. The industry needs, for the exportation of sports goods, are decrease in airfreight & sea freight rates, easy availability of containers, provision of incentives on electricity and gas bills for export-oriented companies.

5.2 Achievements of Sports goods/ products

Despite being at neglect, some products of Pakistan gained international fame and the following are the key achievements and international media highlights.

Box 1-Achievements by Pakistan: International Media Highlights

- ◆ Russia used Pakistan's famous thermo-bonded footballs in 2018 world cup. (reported by Al-Jazeera)
- ◆ Russian Ambassador (Alexey Dedov) to Pakistan in 2018 confirmed the use of Pakistan-made footballs for the World Cup contests.
- ◆ In 1982, Forward Sports (sport equipment company) received first order and Pakistani firm will be making the World Cup footballs. hosted by Spain. (Reported by Saudi Gazette)
- ◆ Forward Sports makes footballs and remained the official footballs provider during World Cup (2014- Brazil).
- ◆ "When millions of football lovers cheer on their favorite teams at the 2018 FIFA World Cup to be held in Russia, Pakistanis will have a special reason to rejoice, although the 198th-ranked football nation will not be participating in the mega event". (Reported by Aljazeera before FIFA 2008)
- ◆ "Pakistan's famous footballs used in the World Cup matches, making over 200 million Pakistanis feel their presence in the event". (Reported by Aljazeera)
- ◆ "All the major giant international sports brands like Adidas, Nike, Puma, Select, Lotto, Umbro, Wilsons etc. are sourcing their supply of footballs from this (Sialkot) export-oriented city and hub of sports goods production. Most of the sports goods are exported to foreign countries and a reasonable amount of foreign exchange is earned in addition to provision of jobs to thousands of workers in the country". (Reported by Saudi Gazette)
- ◆ Sialkot produces almost 40 percent of the world's soccer balls. Sialkot-produced balls were a part of World Cup competitions till 1982. (Reported by Joe Pinsker - The Atlantic)
- ◆ In past, Pakistan remained supplier of hand-stitched soccer balls for nearly all the world cups (1990s to 2010).

Source: August 14, 2018 <https://saudigazette.com.sa/article/541091>

February 3, 2018-<https://www.aljazeera.com/sports/2018/2/3/russia-to-use-pakistans-footballs-in-2018world-cup>

<https://www.theatlantic.com/business/archive/2014/07/one-city-in-pakistan-produces-nearly-half-of-the-worlds-soccer-balls/373802/> July 2, 2014

<https://www.aa.com.tr/en/asia-pacific/pakistani-footballs-to-shine-again-in-2018-world-cup/1053180>

5.3 Potential of Pakistan's Sports Goods Industry

Traditionally, Pakistan produced hand stitched footballs. In 2013 Forward Sports transferred to producing thermo-bonded footballs, where the panels are fused together using heat instead of traditional stitching (Box 2). The local manufacturers from Pakistani companies worked hard and exported 42 million footballs ahead of FIFA world cup 2014. Now Pakistani manufacturers compete with their Chinese counterparts on the basis of high-quality end products. Forward Sports company was given the task of making footballs for the mega event- tournament FIFA World Cup 2018. Pakistan has witnessed potential in sports industry and developed some infrastructure. At one time the need of airport was also felt there and it is a reality today (see table 5).

Box 2-Moving Towards High Quality, Sophisticated Technology & Achievements

- ◆ Pakistan initially produced hand stitched footballs. Latter switched to thermo bonded balls in 2013.
- ◆ Local manufacturers from Pakistani companies compete with their Chinese equivalents due to their quality finished products.
- ◆ "Huge football production business is being transferred from China to Pakistan because of the quality we are providing to the world," view of Pakistan Readymade Garments Manufacturers and Exporters Association, reported in Al Jazeera.
- ◆ Masood's Sports company remained contracting manufacturer of global sports apparel giant Adidas. The company worked for Adidas and provided large stuff for the World Cup. The company's a capacity is to make approximately 700,000 footballs on monthly basis.
- ◆ Forward Sports company was given the task of making footballs for the mega event- tournament - Fifa World Cup 2018.
- ◆ Previously, thermo-bonded balls made in Pakistan attached the panels through heat - the up-to-date technology embraced by Adidas and transmitted to Forward Sports in 2013. (Reported by AA- Asia Pacific).

Table 5: Export Potential in Pakistan's Sports Industry

Measures taken by Industry	Potential in Sports Industry	Impact
Good quality products	❖ Compete with other counterparts	❖ Reached worldwide fame ❖ Demand of football in FIFA World cup ❖ Industry earned profits ❖ Employment opportunities provided to skilled workers
Innovative	❖ Thermo bonded balls ❖ Moved to high quality	❖ Earned profits ❖ Earned fame worldwide

❖ Technology improvement

Customer satisfaction	❖ Capacity to produce and deliver	❖ Time to time getting orders from foreign countries
Good quality, durable & safe products	❖ Skilled workers producing good quality products	❖ Durable and safe goods, hence foreign companies prefer to buy with sports market in Pakistan
		❖ Earning foreign exchange
Developed supply chains & export market access	❖ Several SMEs exist in Sialkot	❖ Market is performing well internationally rather than domestic market
	❖ Skilled labor available	❖ Earning foreign exchange
	❖ Availability of Airport	❖ Source of employment of people
	❖ Timely delivery of products	

Source: Author's analysis (drawn on the basis of qualitative information)

In a nutshell, the above analysis shows the export growth of Pakistan's sports goods industry from 2010 to 2020 has been highly volatile, marked by periods of increase and decline. Despite a few strong growth years, the overall export value decreased by -23.95%. This fluctuation is largely due to a reliance on existing products, indicating a lack of innovation and investment in new goods. The COVID-19 pandemic further exacerbated the industry's struggles, causing significant losses in 2020. However, the sector's potential for revival remains strong, supported by its reputation for quality products and the availability of raw materials. To realize this potential, increased investment and robust policy support are essential.

6. Conclusion

The aim of the study is to assess the potential, performance, and achievements of the sports sector (Sports goods industry, sports industrial cluster/EPZ) in Pakistan. Mixed methods technique is adopted to explore useful information.

The “sports goods industry” is chosen because of the forward looking, inventive and export destined nature but appears to be working in a mixed and slower mode. Even though, adopting technology in sports goods industry, the performance of the “sports sector” remained mixed in terms of growth. The “sports industrial cluster/EPZ” is considered to assess performance public private partnership which is missing. Many industrial clusters exist in Pakistan contributing to its trading sector. Although the industrial cluster is small, but this industry is managing to export its products to various countries worldwide. Pakistan's sports stuff has gained recognition due to better quality and have become a good source of earning foreign exchange. Football is one of the major products of this industry. At times, the sports goods industry contributed to total exports of Pakistan, with the major export of footballs. In recent years, the sports goods again showed decline both in quantity and value. This mixed performance was the motivation behind designing this study to find out sports industry prospects.

The study also evaluated the intensive and extensive margins of the sports goods industry. By adopting a decomposition technique, it has shown the appearing and disappearing goods in current years. Findings show the presence of goods in particular year and enable the policy makers to adopt suitable policy measures for new appearing goods. Similarly, in case of disappearing goods, findings give us a clear indication of goods for which government can carry on further strategies and investments. The presence of sports cluster highlights the importance of sports sector but due to lack of coordination among public-private and regulatory bodies this sector is lagging behind.

The study concludes that Pakistan government didn't focus export opportunities of sports goods industry which has an adverse impact on market internationalization, regional integration and employment. In fact, domestically it appears as a neglected sector and needs to get boosted. Firms are integrating individually and due facilitation is direly needed for the sports industry.

6.1 Recommendations

In the sports goods industry, it is recommended to build more capacity, expansion of the industrial base, provision of energy & infrastructure to make sports products competitive worldwide. The government should facilitate the industry by providing ease of doing business, smooth production operations and introduce new technology. As the sector is labor intensive, hence a clear policy guideline for inducting or training human resource is required.

In fact, domestically, Sports goods industry remained neglected and needs to get boosted through well thought initiatives, provision of export financing, ease of doing business and building supply chain resilience. By adopting suitable steps at domestic level, the industry will be able to improve its performance as this industry has a hidden potential.

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How has the duty drawback policy impacted the exports of surgical goods from Pakistan?

^a Navees Ahmad

^a International University of Japan, Niigata, Japan. Email: navees@iuj.ac.jp

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ABSTRACT

Objective: The Government of Pakistan, through its SRO No. 711(1)/2018 introduced the Duty Drawback scheme to increase the exports from the country. This research gauges the effect of the Policy of Duty Drawback scheme on exports of particular surgical goods from Pakistan.

Research Gap: Most of the research on the Duty Drawback Scheme has holistically covered its impact on a country's exports, failing to measure the impact at the microenterprises level, like small and medium-sized enterprises. However, unprecedented to others, this research has gauged the effects of duty drawbacks on a specific small and medium sector i.e. surgical sector of Pakistan.

Design/Methodology/Approach: To gauge the effectiveness of the Duty Drawback Scheme, the research utilized the Difference in Difference (DID) estimation technique and the inverse weight of propensity score using Firthlogistic regressions. For estimation used panel data for each of these 51 surgical goods pooled over 2017 and 2021. These fifty-one surgical goods are classified as treatment groups while others as control groups. The data is fetched from the database of the official website of Trade Map, and International Trade Centre UNCTAD/WTO.

The Main Findings: The estimation of the research demonstrates that the Duty Drawback Policy has significantly increased the annual exports of treated surgical goods compared to control surgical goods. Thus, the policy has a potential positive influence on increasing the country's exports.

Theoretical / Practical Implications of the Findings: The outcome of the study reveals that the Duty Drawback Policy provides favorable support for enhancing the exports of surgical goods from Pakistan. Therefore, the policy should be applied to the production of remaining surgical items, as well as to similar manufacturing organizations, to boost the country's exports.

Originality/Value: This research provides a line of direction to policymakers for the formulation of future policies and decision-making. Furthermore, the research contributes to the literature for future studies on similar nature topics.

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Corresponding Author's email address: navees@iuj.ac.jp

1. Introduction

The exports are utilized as a key tool for the growth of developed economies (Fan et al., 2015). Economies utilized different tools to enhance their exports (Quaye et al., 2017). Duty drawback programs, frequently used in trade policies, provide rebates and exemptions on duties to allow exporters to obtain imported inputs at global prices while safeguarding other economic sectors. Such programs are particularly common in developing countries with high levels of protection (Ianchovichina, 2004).

The economy of Pakistan is struggling toward stabilization due to a shrinking export bill and an increasing import bill each year. Numerous studies explain that exports boost a country's economic growth and play a crucial role in

economic stabilization and development (Mohamed, 2023; Sobirov et al., 2023). Export-oriented economies tend to be well-developed.

To enhance the exports the Government of Pakistan also introduced the Duty drawback scheme as a tool to increase the exports of Surgical goods. This research gauges the effect of the Policy of Duty Drawback scheme levied by the Government of Pakistan through its SRO No. 711(1)/2018 on the increase in exports of surgical goods. Using the Difference and Differences model along with inverse weights through the Propensity Score, it tested whether the Duty Drawback policy has a positive or negative effect on the exports of Surgical Goods from Pakistan. The research examined data on surgical goods for 2017 (one year before the policy) and 2021 (the year when the policy ended).

Industrial development plays a role in the economic development while providing employment opportunities ensuring improved utilization of domestic skills & resources. It is not a question of innovation and R & D, but recognition that something being exported should be produced competitively at domestic level. Industrial export growth is always in focus for a country to achieve some competitive levels in international trade but a thought-provoking issue for developing countries is the need to reduce their reliance on customary export products while increasing export of new products.

Export diversification becomes important for developing countries and Pakistan is no exception to it, as it develops export competitiveness by widening the of export products, thus reducing dependence on customary exports that have an inclination of decreasing terms of trade (Ekman- Ozcelik and Erlat, 2013). Therefore, export diversification can be accomplished by altering the share of prevailing products (intensive margins) and moving towards new products in the export portfolio (extensive margins) to meet competition needs internationally.

Overall clusters enhance operational efficiency through specialization, enhance technology spillovers, bring innovation (Arif and Asadi, 2011), build synergies across firms & associated institutions, bring better marketing coordination opportunities (Sonobe and Otsuka, 2006), diffusion of best practices through human skills & better technology, increase productivity through employment generation, encourage value added exports, facilitate market internationalization (Sonobe and Otsuka , 2006) and profit margins thus promote exports. Many industrial clusters exist in Pakistan contributing to its trading sector.

2. Background of Study

The Duty Drawback scheme is considered to be an important trade promotional tool, to give impetus to the export of a country. The duty drawback means reimbursement of local taxes, customs duties for input materials to produce exported items, and levies on the exports to exporters. Many countries like China, and South Korea have opted for duty drawback schemes to mitigate the expenses incurred by the exporters like taxes, and customs duties, in producing export proceeds.

The Government of Pakistan intended to increase its exports by adopting duty drawback models similar to those used by China and Korea. Pakistan's surgical sector plays a vital role in the country's exports due to its uniqueness and market competitiveness. However, some surgical equipment relies on imported raw materials, which creates challenges in competing in international markets. Therefore, the Ministry of Commerce of Pakistan took the initiative to give duty drawbacks on the exports of surgical goods to increase their exports. The policy has been devised at Harmonized System Code (HS Code) at 8 digits representing each surgical product.

This paper gauged the effect of the policy of the Duty Drawback scheme on the increase in exports of surgical goods and found that the policy significantly increases the exports of surgical goods in Pakistan. As per the policy, 51 surgical products are subjected to duty drawbacks at some rates. This paper comprises of Introduction, background, literature review, data and methodology, preliminary results and discussions, conclusions, and policy recommendations.

3. Literature Review

The impact of Duty Drawbacks on exports has been discussed quite often in research. However, I have gone through a number of articles that have gauged the effect of the duty drawback on the exports of countries. Moreover, there are mixed findings by the authors.

The policy of duty drawback has a significant effect in improving the competitiveness of exports, but the welfare is still ambiguous (Elena, 2002). Findings from China also show that duty drawback does not help in export promotion (Mah, 2007). Msoni (2018) examined the effect of the duty drawback scheme on Zambian exports from 2008 to 2016 by utilizing the ARDL approach, finding a long-run relationship between the exports and the scheme. However, the study revealed that the duty drawback scheme did not promote exports, likely due to rent-seeking behaviors and inefficiencies in the scheme's administration.

Nasrin and Yusuf (2023) critically examined the Bangladesh Customs Duty Drawback Regulations, highlighting significant loopholes in the Customs Act of 1969 and the VAT Act of 2012. Their study, based on qualitative research methods, revealed inadequacies such as the absence of operational customs rules for duty drawback, lack of clear instructions regarding the stability of Input-Output Coefficients, and the absence of acknowledgment for duty drawback within the VAT and SD Act.

Hatta (2018) explores an ideal tariff system in a small open economy with limited resources, focusing on the role of duty drawback to increasing the exports and utilization as a tool of trade policy. The research demonstrates that the best mixture of tariffs and duty drawbacks for a specific revenue level is not the same. Additionally, it establishes that if the optimal import tariff rates are positive when there is no duty drawback, they will remain positive even after the duty drawback rate is introduced.

On the other hand, evidence from Columbia shows that giving duty drawback has significant impacts on a country's exports and gives impetus to exported quantities. Using a comprehensive DID method with a comprehensive firm-country-product-year level database, López (2022) estimates the effect of input-duty reductions on export outcomes. The findings reveal that reducing input duties enhances export quantities and diversifies product varieties, particularly for goods not directly benefiting from the policy.

Mariel and Minner (2015) examine how more tariffs and difficult customs measures influence global automotive production strategies, emphasizing the role of duty drawbacks in reducing overall duty expenditures when imported raw materials are used in the production of goods for export. Their study develops a mixed-integer model to optimize production capacity and duty management in multi-stage processes. The findings of the study reveal the substantial financial effects of duties and drawbacks, offering insights into effective production network design.

Regional trade agreements (RTAs) play a role in enhancing trade by reducing tariffs and other trade barriers. However, firms operating under alternative tariff regimes, such as duty drawback (DD) systems, may experience different trade effects when RTAs come into force. Hayakawa et al. (2024) explore this dynamic by examining how firms in Thailand adjust their import behavior when switching from a DD regime to an RTA regime. Study findings suggest that the presence of DD regimes can significantly influence the magnitude of RTAs' impact on trade, particularly in economies where firms are already benefiting from other tariff reduction mechanisms.

Lee and Yim (2015) investigate the impact of Korea's export assistance mechanisms, focusing on export insurance, trade exhibitions, and duty drawback systems. Utilizing time series analysis, their empirical findings reveal that export insurance and trade exhibitions do not significantly influence export levels. In contrast, the duty drawback system is shown to have a favorable and notable impact on export promotion.

Bangladesh's Ready-Made Garments (RMG) industry thrived due to an elaborate incentive package of duty drawbacks in the 1990s (Rahman & Chowdhury, 2020). Many countries offer duty drawbacks during a tariff conflict and voluntarily implement duty drawbacks to avoid export taxes. The welfare cost of the global tariff war could be greater without duty drawbacks (Lashkaripour, 2021).

Based on the review of research articles, it is evident that there are mixed views on the effect of duty drawbacks on the exports of a country. Thus, some avenues have yet to be traversed to find a correlation between exports and duty drawbacks.

Moreover, the researchers have utilized different types of models in estimating the effect of duty drawbacks and other similar regulations on exports. To name a few: Difference in Difference, First Difference, simple OLS regression, etc. It is noteworthy to state that most of the research on the topics has covered the outcome of duty drawback on the exports of a country holistically, failing to measure the impact at the microenterprises-level like small and medium-sized enterprises. However, unprecedented to others, this research has gauged the impact of duty drawbacks on a small and medium sector i.e. surgical sector of Pakistan. This is owing to the fact that small and medium enterprises are considered an engine of growth for an economy. Therefore, a positive impact of duty drawback will have a domino effect on large-scale enterprises that utilize inputs from these small and medium enterprises in the production of their export-related items.

In addition, no previous research has been conducted on duty drawback policies in Pakistan, leaving a gap in the literature. Furthermore, each country has unique economic, geographic, and industrial characteristics, so research on other countries may not be directly applicable to Pakistan's circumstances. Therefore, this study will provide valuable insights for policymakers and contribute to the academic literature.

4. Data and Methodology

4.1 Data

The research uses panel data for the exports of surgical goods. The policy of duty drawbacks implemented by the Ministry of Commerce of Pakistan contains fifty-one (51) surgical goods. The research uses the panel data for each of these 51 surgical goods pooled over 2017 and 2021. These fifty-one surgical goods are classified as treatment groups. On the other hand, the other surgical goods (control group) that are not subjected to the policy of duty drawbacks have their export values pooled for the years 2017 and 2021. This comprises the control group in our research. Moreover, the data is fetched from the official website database of Trade Map, International Trade Centre UNCTAD/WTO which is an open source of world trade data at country, product, and even region level.

4.2 Methodology

To investigate the connection between export trade and corporate technological innovation among listed companies in China, Zhou et al., (2021) employ a multiphase difference-in-differences (DID) model. Ferguson & Forslid (2019) used the DID model for estimation to assess the trade promotion policy via the Norway foreign service. Zhang et al., (2020), who investigated the influence of environmental policies on export behavior in China utilized the DID estimation technique. To assess the productivity of China's tax rebate policy on its textile exports to the USA, Bao et al., (2017) preferred DID techniques, similarly, Cheng et al., (2021) preferred the DID regression technique over others to test diverse effects of finance on firm exports in the context of China's export deregulation following WTO accession. Thus, this study is also going to use the DID technique for estimation.

$$\text{exportvalues}_{it} = \beta_0 + \beta_1 * \text{treatment}_i + \beta_2 * \text{post_policy}_t + \beta_3 * \text{DID} + \varepsilon_{it} \quad (1)$$

Where, exportvalues_{it} is dependent variable) that refers value of annual exports of surgical goods i in year t in 1000 US Dollars. treatment_i is the group dummy variable for the surgical goods that undergo the duty drawback policy and it takes the value of 1 for the goods that are treated and 0 for the control surgical goods, that do not take treatment. post_policy_t is the period dummy variable i.e. =1 for the post duty drawback policy period of year=2021. DID is the interaction term of treatment_i and post_policy_t , and measures the average treatment effect of the policy. ε_{it} is error term.

The research uses the DID econometric models along with the inverse weight of propensity score using Firthlogistic regressions (Puhr et al., 2017) to predict the values of the treatment group and find a nonlinear relationship between the treatment and exchange rate and duty drawback. Initially, the treatment variable is regressed on the explanatory variables' duty drawback, and exchange rate by using Firthlogistic regressions, later on, the propensity score is calculated based on the estimated Firthlogistic regressions. Finally, the inverse of the predicted probabilities (pscore) is done for assigning weights to each observation. This was done to check for a nonlinear relationship between the dependent variable (treatment dummy==1) and explanatory variables: exchange rate and duty drawback.

These weights are then used in the DID model for gauging the effect of the policy of duty drawback in increasing

exports of surgical goods. The equations are as under:

$$\text{Logit (P (treatment=1| X1=exchange rate, X2=duty drawback) = f (\beta X \text{ exchange rate, duty drawback})$$

Where, treatment is the group dummy variable for the surgical goods that undergo duty drawback policy, its value is 1 for the treatment group and 0 for the control group. exchange rate is exchange rate is the annual proportion of Pakistan rupee in US dollars for the years 2017 and 2021. duty drawback is the rate of duty reimbursement given to each surgical good in percentage. $f (\beta X \text{ exchange rate, duty drawback})$ is the Firthlogistic function that takes into the account exchange rate and duty drawback rate and predicts probabilities for treatment==1 and to check nonlinearities

After predicting probabilities (score) through logistic regression and taking their inverse weights the second DID model is given as follows:

$$\text{exportvalues}_{it} = \beta_0 + \beta_1 * \text{treatment}_i + \beta_2 * \text{post_policy}_t + \beta_3 * \text{DID} + \beta_4 \text{ weight} + \varepsilon_{it} \quad (2)$$

Where, exportvalues_{it} is value of annual exports of surgical goods i in year t in 1000 US Dollars. treatment_i is the group dummy variable for the surgical goods that undergo duty drawback policy and it takes a value of 1 for the goods that are treated and 0 for the control surgical goods. post_policy_t is the period dummy variable i.e., =1 for the post duty drawback policy period of year=2021. DID is the interaction term of treatment_i and post_policy_t , and measures the average treatment effect of the policy. Weight is inverse weight of pscore calculated through logistic regression.

5. Results and Discussion

Table 1: Impact of Duty Drawback Policy on Exports of Surgical Goods from Pakistan Using DID

	(1)	(2)
	DID without Weighted Propensity Score	DID with Weighted Propensity Score
treatment	6355.3 (7629.0)	-13758.9** (6782.8)
Post_policy	-630.0 (7629.0)	2984.1 ((6428.8)
DID	1780.6 (10789.0)	21894.8** (9337.0)
Weight		267801.0*** (29270.0)
Cons	834.0 (5394.5)	-2780.1 (4554.4)
No. of observations	204	204
Prob>F	0.608	0.00
	F (3200) =0.61	F (4,199) =21.58
Std error in parenthesis=	*p<.10	**p<.05 ***p<.01

Source: Author's Estimations

Table 2: Comparison of the Two Models (DID with and without Weighted Propensity Score)

If treatment==1 firthlogit treatment exchange rate duty drawback

Initial:	Penalized log-likelihood	=	-139.6451
Alternative:	Penalized log-likelihood	=	-146.04757
Rescale:	Penalized log-likelihood	=	-139.6451
Interaction 0:	Penalized log-likelihood	=	-139.6451

Interaction 1:	Penalized log-likelihood	=	-73.5597	
Interaction 2:	Penalized log-likelihood	=	-73.4790	(not concave)
Interaction 3:	Penalized log-likelihood	=	-73.33	(not concave)
Interaction 4:	Penalized log-likelihood	=	-73.3199	
Interaction 5:	Penalized log-likelihood	=	-73.2512	
Interaction 6:	Penalized log-likelihood	=	-73.1974	
Interaction 7:	Penalized log-likelihood	=	-73.1974	
Interaction 8:	Penalized log-likelihood	=	-73.1974	
		No. of obs	=	204
		Wald chi2(2)	=	21.28
Penalized log-likelihood =	-73.1974	Prob > chi 2	=	0.0000

treatment	coefficient	Standard error	Z	P > Z	[95% confidence interval]	
Exchange rate	154.491	47.80879	3.23	0.001	60.78751	248.1945
Duty drawback	3.0898	.6698029	4.61	0.000	1.777031	4.40261
cons	-13.9041	4.280179	-3.25	0.001	-22.39319	-5.515195

Source: Author's Estimations

Table 3: Showing Firth Logistic Regression

Source	SS	Df	MS	Obs No.	=	204
Model	9.0611e+10	4	2.2653e+10	F(4, 199)	=	21.58
Residual	2.0894e+11	199	1.0499e+09	Prob>F	=	0.0000
Total	2.9955e+11	203	1.4756e+09	R-square	=	0.3025
				Adj R-sq	=	0.2885
				Root MSE	=	32403
exportvalues	Coefficient	Std.err	T	p> t 	[95% conf. interval]	
Treatment	-13758.85	6782.821	-2.03	0.044	-27134.28	-383.4234
Post_policy	2984.062	6428.811	0.46	0.643	-9693.273	15661.4
DID	21894.77	9337.036	2.34	0.020	3482.545	40307
Weight	267801	29269.95	9.15	0.000	210081.9	325520.1
cons	-2780.121	4554.429	-0.61	0.542	-11761.26	6201.015

Source: Author's Estimations

It is noted that the regression results as per model no.1 show insignificant results. The coefficients on treatment post_policyt DID are also insignificant. This shows that the policy of duty drawback on average does not have a significant impact on the increase of exports of the treated group compared to the control group. It is clear from the outcomes that the goodness of fit of Model 1. is very small i.e. 0.68 may not adequately capture the complexity of the relationship between the duty drawback policy and exports.

However, the economic significance implied that there is a significant impact of the policy intervention as the exports of surgical goods of the treated group have increased. Furthermore, owing to the small sample size, the study moved to an advanced model 2.

In model 2, the study used difference and difference with the weighted propensity score to remove potential bias and improve the precision of the estimates. The estimation result showed an improved model with an improved goodness of fit as evident from the F-Statistic value of 21.58 provides a more robust framework to measure the impact of the policy. Based on the regression results from Model No. 2, it is interpreted that the policy of duty

drawback has a positive and significant effect on the exports of surgical goods and this is aligned with many earlier studies (Lee & Yim, 2015; Mariel & Minner, 2015; Park, 2012). The coefficient on DID shows the value of 21894.8 which is significant at a 5% significance level keeping other explanatory variables constant, owing to the duty drawback policy of Pakistan. The treated group in the surgical sector experienced an increase in the value of 21894.8 in US\$1000 as compared to the control group. This increase is attributed to the implementation of the duty drawback policy, which helps exporters by reimbursing a portion of the duties paid on imported raw materials used for production. Overall, the Duty Drawback scheme boosted the exports of surgical goods and played a crucial role in stabilizing the economic growth of Pakistan.

6. Conclusion and Policy Recommendations

To conclude, it is stated that a number of research have been carried out to fathom the impact of duty drawback policy on exports. However, there have been mixed views on the impact, some support the fact that the policy plays a quintessential role in increasing the exports, while others downplay this view. Moreover, different models have opted to check the view.

In this research, by conducting research through differences in difference, the results came out to be insignificant. Furthermore, by using a concoction of Difference in differences with weighted Propensity, the model was improved with higher goodness of fit and significant values with positive impacts of policy on the annual export values. Thus, the model, illustrates that the duty drawback policy has significantly increased annual exports of treated surgical goods as compared to the control surgical goods.

The study's findings indicate that the duty drawback scheme enhances the export of surgical items and has a favorable impact. Therefore, policymakers should extend the duty drawback policy to cover other low-export surgical items, as well as similar manufacturing sectors, to further boost the country's exports. Additionally, the scope of the duty drawback scheme should be expanded to other manufacturing industries, such as sports goods, garments, leather, and information technology, to help transform Pakistan's economy into an export-oriented one.

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