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Strategic Evaluation of China's Foreign Assistance in Vocational and Technical Education: A Case Study of the China-Pakistan Economic Corridor

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Abstract: This study examines China's foreign assistance and cooperation strategies in vocational and technical education (TVET) with a focus on the China-Pakistan Economic Corridor (CPEC) and associated projects. It highlights key initiatives such as the Punjab Tianjin University of Technology and the "Luban Workshop," which reflect China's commitment to advancing vocational education in Pakistan. Through a detailed analysis, the study identifies the effectiveness of these projects in meeting educational needs, the challenges faced, and the strategic alignment with broader initiatives like the Belt and Road Initiative (BRI) and Pakistan's Vision 2025. Findings reveal that while significant progress has been made in improving educational quality and infrastructure, challenges remain in sustainability, market alignment, and support mechanisms. The study concludes with recommendations for enhancing future TVET projects, emphasizing the need for robust collaboration, sustainability, and flexibility to address emerging challenges. This research contributes valuable insights into international cooperation in vocational education and offers guidance for policymakers and practitioners involved in similar initiatives.

Keywords: CPEC, Vocational and Technical Education, Belt and Road Initiative, International Educational Cooperation, Technical Assistance, Educational Sustainability,

I.Introduction

The world is currently experiencing a new wave of significant development, transformation, and adjustment, with countries increasingly interconnected in their economic and social development. The global governance system and international order are undergoing rapid changes. Simultaneously, the global economy is facing profound adjustments, with rising protectionism and unilateralism, leading to setbacks in economic globalization. Multilateralism and free trade systems are under threat, and numerous unstable and uncertain factors persist, intensifying risks and challenges. The outbreak of the COVID-19 pandemic in 2020 further exacerbated these challenges, impacting the international community significantly. Amidst this complex international environment, China has persevered under immense pressure, steadily advancing the Belt and Road Initiative (BRI) [1]. This initiative has contributed positively to global stability and prosperity while fostering China's economic development.

Pakistan, the first Islamic country to establish diplomatic relations with China, is a close neighbor, friend, and "iron brother" to China. The diplomatic relationship between the two countries is termed an "all-weather strategic cooperative partnership" and is colloquially referred to as "Pak-Cheen Dosti" (Pakistan-China friendship). In 2015, China and Pakistan jointly launched the China-Pakistan Economic Corridor (CPEC), a flagship project and a model initiative under the BRI. This project aims to achieve full connectivity and mutual benefits for both nations through comprehensive and multifaceted cooperation [2].

Since the inception of CPEC, educational cooperation between China and Pakistan has grown significantly. Numerous Pakistani schools and institutions have initiated various educational and cultural exchange programs with their Chinese counterparts, fostering a significant number of ambassadors of friendship between the two countries. Concurrently, the progress of CPEC has prompted many Chinese enterprises to focus on Pakistan, providing support for infrastructure and various sectors, thereby creating a significant demand for vocational and technical talents [3].

The cooperation in vocational education between China and Pakistan has entered a new phase, highlighted by cross-border educational projects such as the Punjab Tianjin University of Technology in Pakistan and the "Luban Workshop" in Lahore. Notably, China's cumulative aid to Pakistan exceeds one-third of its total foreign aid [4]. However, the implementation and promotion of aid and cooperation projects under the BRI, including specific cross-border educational projects and the construction of the "Luban Workshop," rely heavily on in-depth cooperation in the vocational and technical education sector between the two countries.

As China's external aid and investment projects in Pakistan and other countries progress, there is a growing demand for local skilled workers and technical talents, necessitating effective support from China for vocational and technical

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education aid and cooperation projects. Nonetheless, a gap exists between the needs and supply in China's aid and cooperation, significantly affecting the effective implementation and development of these projects, thus becoming a problem and challenge in Sino-Pakistani cooperation [5].

Pakistan, with a population of 230 million, has a significant youth demographic, with 63% of its population under the age of 35. However, the overall educational attainment is generally low, and there is a shortage of skilled labor. Each year, approximately 2.4 million young people enter the job market, yet the country's vocational education and technical training institutions suffer from severe shortages in teaching resources [6]. During the 2018-2019 period, there were 430,000 students enrolled in technical and vocational education programs, supported by 18,000 teachers [7]. This represents a substantial increase from 315,000 students in 2013. Nevertheless, the proportion of students in vocational and technical education remains very low, accounting for less than 20% of the annual new entrants to the job market. This discrepancy is attributed not only to the significant gap between the demand and supply of qualified graduates but also to the mismatch between the skills and training provided and the actual requirements of the employment market [8].

To address the bottleneck in vocational talent training, the Pakistani federal government has recently implemented measures to promote youth training education through grants and direct investments. In 2016, the federal government allocated $220 million to establish the "Prime Minister's Youth Training Scheme," which aims to provide skills training to approximately 200,000 educated but unemployed youth. Additionally, the government invested $25 million in various technical and vocational training programs in collaboration with the private sector [9]. Pakistan's development trajectory necessitates extensive vocational skills training, yet the country has few professional vocational technical institutions capable of providing such training. This presents an opportunity for Chinese vocational institutions to expand their international operations and engage in training initiatives [10].

Research on vocational education in Pakistan within China is relatively limited. A search on China National Knowledge Infrastructure (CNKI) for the topic "Pakistan vocational education" yields 19 articles, many of which do not closely relate to vocational education in Pakistan. A refined search using "vocational education" as a keyword returns only four papers: "The Implementation and Implications of Pakistan's National Skills Strategy," "An Analysis of the Development of Vocational Education Policy in Pakistan," "A Review of Pakistan's National Vocational Qualification Framework," and "Analysis and Implications of Pakistan's National Vocational Qualification Framework." The first three papers were authored by the same individual, and the fourth closely aligns in content with the third [11]. These papers primarily provide an overview of Pakistan's vocational education and national vocational qualification framework, lacking significant depth and breadth in terms of research personnel and content. This indicates a substantial gap in the depth of domestic research on Pakistan's vocational education, suggesting ample room for further study. No related master's or doctoral dissertations were found in this area, indicating a lack of systematic research.

In contrast, international research on vocational education in Pakistan is more systematic and in-depth. A Google Scholar search for "Pakistan vocational education" yields approximately 100,000 results. When the search is narrowed to "Pakistan vocational education under the Belt and Road Initiative," the results still number around 6,980 [12]. These studies analyze and research various aspects of Pakistan's vocational education from different perspectives, including Sino-Pak vocational education cooperation, industry demand, school development, national policy evolution, functional characteristics of vocational education, challenges and issues in vocational education development, faculty development, and case studies.

Based on the literature search results, there is a clear imbalance between domestic and international research on Pakistan's vocational education. Therefore, this study aims to enrich the domestic research landscape on Pakistan's vocational education by providing up-to-date research materials on this subject.

II. Methodology

This study employs a multi-faceted research methodology to analyze China's strategies in foreign assistance and cooperation in vocational and technical education (TVET), with a particular focus on the China-Pakistan Economic Corridor (CPEC) and related initiatives. The methodology encompasses a blend of qualitative and quantitative approaches, including case studies, interviews, surveys, and a review of relevant literature. This comprehensive approach ensures a nuanced understanding of the effectiveness, challenges, and strategic implications of these cooperative projects.

2.1 Research Design

The research design is structured to address the primary objectives of the study, which are to evaluate the effectiveness of China’s TVET aid and cooperation projects in Pakistan, assess the alignment of these projects with the recipient country’s needs, and identify best practices for future initiatives. The study follows a mixed-methods approach, integrating both qualitative and quantitative data to provide a robust analysis of the subject.

2.2 Data Collection

Literature Review: A thorough review of existing literature related to China's foreign assistance in TVET, the Belt and Road Initiative (BRI), and vocational education in Pakistan is conducted. This review includes academic articles, policy documents, and reports from international organizations. The literature review provides a foundational understanding of the historical context, current trends, and theoretical frameworks relevant to the study.

Case Studies: Two key case studies are examined in detail:

Punjab Tianjin University of Technology: This case study focuses on the cross-border educational collaboration between China and Pakistan. Data is collected from official reports, institutional records, and project documentation to assess the implementation, outcomes, and impact of this educational initiative.

Luban Workshop: This case study explores the "Luban Workshop" project, including its objectives, operational framework, and achievements. Data is gathered from project reports, interviews with stakeholders, and site visits to evaluate the effectiveness and challenges of this vocational training initiative.
Interviews: Semi-structured interviews are conducted with key stakeholders involved in China-Pakistan TVET projects. These include project managers, educational administrators, Chinese and Pakistani faculty members, and representatives from relevant governmental and non-governmental organizations. The interviews provide insights into the implementation processes, challenges faced, and perceived impacts of the projects.
Surveys: Surveys are distributed to students, graduates, and employers associated with the TVET projects. The surveys gather quantitative data on the perceived quality of education and training, the relevance of skills acquired, and the employment outcomes for graduates. This data helps in assessing the alignment of TVET programs with industry needs and employment market demands.
Field Visits: On-site visits to vocational training institutions and project sites in Pakistan are conducted. These visits allow for direct observation of the facilities, equipment, and teaching methodologies employed in the TVET programs. Field visits also facilitate informal discussions with students and faculty, providing additional context and understanding of the operational challenges and successes.

2.3 Data Analysis

Qualitative Analysis: The qualitative data from interviews, case studies, and field visits are analyzed using thematic analysis. This involves coding the data to identify recurring themes, patterns, and insights related to the effectiveness and challenges of the TVET projects. The analysis aims to understand the nuances of project implementation, stakeholder perspectives, and the impact on vocational education in Pakistan.
Quantitative Analysis: The quantitative data from surveys are analyzed using statistical methods to identify trends, correlations, and patterns. This analysis focuses on evaluating the outcomes of TVET programs, including the quality of training, employment rates of graduates, and the alignment of skills with industry needs. Statistical tools such as descriptive statistics, correlation analysis, and regression analysis are employed to interpret the survey data.

2.4 Evaluation Framework

An evaluation framework is developed to assess the success and impact of the TVET projects. The framework includes criteria such as:

- Alignment with Recipient Needs: Evaluating how well the projects address the vocational and technical training needs of Pakistan.
- Quality of Education and Training: Assessing the standards of education, equipment, and faculty involved in the projects.
- Sustainability and Scalability: Analyzing the long-term viability of the projects and their potential for expansion or replication in other contexts.
- Impact on Local Workforce: Measuring the effectiveness of the training in improving employment outcomes and addressing skill shortages in the local labor market.

2.5 Limitations

The study acknowledges several limitations, including potential biases in self-reported data from interviews and surveys, the challenge of obtaining comprehensive and up-to-date information from all stakeholders, and the constraints imposed by the COVID-19 pandemic on field visits and data collection activities. These limitations are addressed through triangulation of data sources and methods to ensure the reliability and validity of the findings.

2.6 Ethical Considerations

Ethical considerations are paramount in conducting the research. Informed consent is obtained from all participants in interviews and surveys, ensuring their voluntary participation and the confidentiality of their responses. The study adheres to ethical guidelines in data collection, analysis, and reporting, maintaining transparency and integrity throughout the research process.

III. Vocational and Technical Education and Training in Pakistan

3.1 Overview of Vocational and Technical Education and Training in Pakistan

The National Vocational & Technical Training Commission (NAVTTC) serves as the highest governing body for vocational and technical education and training (TVET) in Pakistan. NAVTTC is primarily responsible for policy formulation, standardization, and regulation of TVET, as well as international cooperation and the implementation of national training programs. The commission's headquarters are located in Islamabad, and it operates several key departments, including Planning and Development, Skills Standards, and Curriculum. NAVTTC also has branch offices in various provinces and regions across Pakistan [13].
As of the end of 2018, Pakistan had a total of 3,798 vocational institutions, comprising 1,275 public institutions and 2,523 private institutions. Approximately 433,000 students were enrolled in these institutions, with male students making up 65.9% and female students 34.1% of the total enrollment. The major focus areas of vocational education and training in Pakistan include the services sector, hospitality industry, construction industry, agriculture and livestock, and manufacturing sector. A significant ongoing project in Pakistan aims to provide training for unemployed youth [14].

3.2 Pakistan's National Vocational Qualification Framework (NVQF)

The National Vocational Qualification Framework (NVQF) of Pakistan, launched in March 2015, was developed after extensive consultations with all key stakeholders in the Technical and Vocational Education and Training (TVET) sector. This framework was designed to introduce competency-based courses within TVET institutions, a move facilitated by the

National Vocational & Technical Training Commission (NAVTTC) under the TVET Sector Support Program (SSP). The SSP received support from international partners, including the European Union, the Embassy of the Kingdom of the Netherlands, the Federal Republic of Germany, and the Royal Norwegian Embassy. The German Federal Ministry for Economic Cooperation and Development (BMZ) commissioned the program, which was implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GiZ) GmbH in close collaboration with NAVTTC [15].

During the initial two-year pilot phase, the introduction of National Vocational Qualifications (NVQs) across Pakistan provided valuable insights and feedback from TVET service providers and institutions. This feedback highlighted the need to revise the NVQF's primary document and support manuals to streamline procedures and processes related to the development, assessment, and management of NVQs. In a joint workshop in November 2016, stakeholders decided to consolidate the existing 11 operational manuals into three comprehensive manuals: "Development of NVQs," "Assessment of NVQs," and "Management of NVQs." These revisions aimed to further refine the framework's procedures and enhance its implementation [16].

The second phase of the TVET SSP involves developing new NVQs and revising existing qualifications to create a comprehensive structure from levels 1 to 4. This phase also focuses on human resource development, aiming to build the capacity of management and assessment bodies and training institutions to efficiently implement NVQs [17].

The NVQF structure encompasses eight levels, with qualifications ranging from National Vocational Certificates at levels 1 to 4, a Diploma at level 5, and graduate and postgraduate qualifications at levels 6 to 8. Certification for levels 1 to 5 falls under the purview of Qualification Awarding Bodies (QABs), while universities accredited by the Higher Education Commission (HEC) handle the certification of qualifications at levels 6 to 8. Each level within the framework is defined by specific descriptors outlining the expected outcomes in terms of knowledge, skills, and responsibilities. These descriptors guide the leveling of competency standards and the development of assessment guides, curricula, and learner materials [18].

Figure 1: The National Vocational Quali cation Structure (Source:https://www.psc.org.pk/national-vocational-qualification-framework-nvqf/)

3.3 Challenges Facing Pakistan's Vocational and Technical Education and Training (VTET)

Pakistan's Vocational and Technical Education and Training (VTET) system faces two primary challenges: improving "quality" and increasing "quantity." With a population of approximately 220 million and a growth rate of around 2.2%, Pakistan's workforce is projected to reach 236 million by 2050. According to the National Vocational & Technical Training Commission's (NAVTTC) "2018 National Skills Strategy," there are 14 urgent priority areas for development. These include standardizing skills certification, obtaining international accreditation for VTET institutions, providing skills training for youth in underdeveloped regions, implementing training for high-skilled workers and apprenticeships, and certifying over 2,000 training institutions and vocational instructors. The strategy aims to produce 170,000 skilled and certified professionals [19].

To achieve these goals, Pakistan has initiated over 1,300 projects across 227 vocational institutions nationwide, focusing on in-service training, capacity building, and assessment and evaluation, supplemented by skills competitions at regional, provincial, and national levels. However, the dual improvement in the "quality" and "quantity" of VTET is crucial for Pakistan's economic development and remains a pressing challenge [20].

Field visits, discussions with company representatives and teachers, and on-site investigations have revealed several additional issues hindering the rapid development of Pakistan's VTET system. First, the collaboration between schools and enterprises and the integration of education and industry are inadequate. There are systemic and implementation-level challenges, such as the lack of top-level design and mechanisms for school-enterprise cooperation, and poor interaction between businesses and educational institutions [21].

Second, the effectiveness of the apprenticeship system is limited, with minimal impact. Although Pakistan, as a Commonwealth country, adopted an apprenticeship model similar to that of the United Kingdom, the lack of industry

guidance, appropriate social and educational environments, and concrete implementation frameworks have restricted the system's reach and efficacy over the years [22].
Third, there is a significant mismatch between the supply of trained graduates and the demand from local and Chinese enterprises involved in aid and investment projects in Pakistan. This supply-demand imbalance has persisted long-term, creating a major bottleneck in the system [23].
Lastly, the shortage of funds poses a severe constraint. For years, the funding available for Pakistan's VTET has barely sufficed to keep the system operational. The lack of continuous investment in capital, equipment, and infrastructure significantly hampers the potential for future development and enhancement [24].

IV. Chinese Cooperation in Pakistan's Vocational and Technical Education

In recent years, China has provided significant assistance and cooperation to Pakistan in the field of vocational and technical education. Two prominent projects include the Punjab Tianjin University of Technology and the "Luban Workshop" project in Pakistan.
Punjab Tianjin University of Technology was established through a cross-border educational collaboration between Tianjin University of Technology and Education, Tianjin Polytechnic University, Tianjin University of Urban Construction, and the Technical Education and Vocational Training Authority of Punjab, Pakistan. The university officially opened in March 2018 in Lahore and comprises three colleges: the College of Engineering Technology, the College of Textile Engineering Technology, and the College of Construction Engineering. The university offers seven programs, including Mechanical Engineering Technology, Textile Engineering Technology, and Civil Engineering. Chinese faculty and administrative staff were dispatched to Pakistan to manage and teach at the university. The institution aims to provide exchange and training programs for teachers and students, educate international students, and train advanced technical personnel for Pakistan by adopting the Chinese educational model [25].

Figure 2, the inauguration ceremony of the Punjab Tianjin University of Technology in Lahore.(Source: http://www.cnr.cn/tj/jrtj/20180327/t20180327_524178257.shtml)

The "Luban Workshop" project, another key initiative, represents a proactive exploration of internationalization in Chinese vocational education. Launched in July 2018 in Lahore, this project is a joint effort by Tianjin Modern Vocational Technology College and the Technical Education and Vocational Training Authority of Punjab. The workshop occupies an area of 560 square meters and includes vocational training and specialized Chinese language training areas. The primary programs offered are Mechatronics Technology and Electrical Automation Technology. The "Luban Workshop" aims to train Pakistani professionals in these fields, serving the needs of Chinese enterprises in Punjab's industrial parks and supporting the China-Pakistan Economic Corridor (CPEC) [26].

Figure 3, Launching Ceremony of the 'Luban Workshop' Project (Source https://www.sohu.com/a/242548262_284449)

These projects are part of a broader strategy under the Belt and Road Initiative and the development of the China-Pakistan Economic Corridor. They represent significant steps toward the internationalization of Chinese vocational education and a solid move toward practical cooperation between China and Pakistan. However, as

international projects, they are susceptible to various complex factors, such as shifts in the global political landscape, the challenges of managing cross-border initiatives, and the impacts of the COVID-19 pandemic. Moving forward, it is crucial to focus on post-implementation support, maintaining the momentum of cooperation, and ensuring the sustainable development of these initiatives. Continuous evaluation, problem-solving, and proactive measures are essential to achieving long-term success and sustainability [27].

V. Analysis of China's Strategies in Foreign Assistance and Cooperation in Vocational and Technical Education

The "China-Pakistan Economic Corridor Long-Term Plan (2017-2030)" aligns China's Belt and Road Initiative (BRI) with Pakistan's Vision 2025, underscoring key areas of cooperation such as connectivity, energy, and industrial parks. This strategic alignment necessitates a deeper and more comprehensive approach to vocational and technical education and training (TVET). It sets a higher benchmark for both the quality and quantity of skilled professionals required to support and advance these cooperative projects [28]. Effective foreign assistance and cooperation in TVET involve a multifaceted approach that includes strategic planning, investment in high-quality equipment, efficient resource allocation, and the strategic use of the time lag between China and the recipient country. Additionally, leveraging international platforms and adopting established global knowledge systems and best practices are crucial components of this process [29].

Systematic Design of Aid and Cooperation Projects

The effectiveness of TVET aid and cooperation projects relies heavily on a well-structured and systematic design that ensures sustainability and impact even after the initial phase of implementation. Many of China's TVET aid projects are designed around specific professional disciplines, which can lead to issues of fragmentation if there is insufficient planning in areas such as infrastructure, machinery, maintenance, consumables, technology transfer, and faculty training. To mitigate these issues, it is essential for projects such as cross-border technical universities and "Luban Workshops" to integrate both "hard power" elements—such as the provision of advanced equipment and infrastructure—and "soft power" elements, including technology transfer, human resource development, and management support. This integrated approach ensures that these projects not only deliver immediate benefits but also build long-term capacity and resilience in less developed environments. Maintaining systemic integrity and facilitating the projects' ability to operate independently in varying contexts is critical for their sustained success [30].

Accurate Project Positioning

Accurate positioning of aid and cooperation projects is pivotal for their effectiveness and impact. Projects must be carefully aligned with the recipient country's needs, economic conditions, and industrial context to ensure their relevance and success. Historical instances of aid projects have sometimes shown a misalignment with these factors, leading to challenges in promoting vocational education and training effectively. This misalignment can result in difficulties in stimulating industrial growth or meeting market demands. Furthermore, the quality and support for equipment and facilities are crucial for the successful implementation of these projects. Equipment procured domestically and then transported internationally often faces challenges such as insufficient after-sales service, maintenance, technical support, and availability of spare parts. The COVID-19 pandemic has exacerbated these issues by causing delays in international procurement and transportation, highlighting the critical need for robust support systems to maintain equipment functionality and project effectiveness [31].

Technical Support and Faculty Training

The provision of ongoing technical support and faculty training is essential for ensuring the long-term success of TVET projects. Effective aid in this area requires a phased transfer of skills and responsibilities to local professionals and educators, enabling smooth project continuation beyond the period of external assistance. The gradual withdrawal of Chinese technical personnel and faculty must be strategically planned to ensure that local staff are adequately prepared to take over responsibilities and sustain the project's operations. This process is crucial for ensuring the project's sustainability and for fostering local expertise and capacity in the recipient country [32].

Leveraging the Time Lag Between Technological and Economic Development

Utilizing the time lag between China's technological and economic development and that of the recipient country is a strategic element in the success of aid projects. Developed countries often leverage this time lag by providing aid in areas where recipient countries lack advanced technology or expertise. This approach not only supports the recipient countries' development but also fosters mutual exchange and growth. By addressing gaps in technology and expertise, China can facilitate significant advancements in the recipient country's industrial and social sectors, benefiting both the donor and recipient countries through enhanced cooperation and shared development goals [33].

Utilizing International Platforms Like the WorldSkills Competition

International platforms such as the WorldSkills Competition play a critical role in assessing the effectiveness of TVET systems, selecting skilled professionals, and fostering international cooperation. China's participation in and success at these competitions provide valuable opportunities for evaluating and enhancing TVET aid and cooperation initiatives. These platforms enable the effective transfer and adaptation of international best practices and methodologies, contributing to the continuous improvement and innovation of TVET programs. By engaging with these global competitions, China can further refine its strategies and approaches, ensuring that its international TVET assistance is both impactful and aligned with global standards [34].

VI. Conclusion

This study provides a comprehensive analysis of China's strategies in foreign assistance and cooperation within vocational and technical education (TVET), with the following important conclusions.

1. Strategic Alignment and Impact

The strategic alignment of China's TVET projects with the broader objectives of the Belt and Road Initiative (BRI) and Pakistan's Vision 2025 is evident. The Punjab Tianjin University of Technology and the "Luban Workshop" projects illustrate a targeted approach to addressing specific vocational training needs in Pakistan. These projects have significantly contributed to enhancing educational opportunities, fostering technical skills, and supporting the development of a skilled workforce in alignment with CPEC's goals. The integration of advanced Chinese educational models and technical expertise has played a crucial role in this process [35].

2. Effectiveness and Challenges

The effectiveness of these TVET initiatives is notable, with positive outcomes in terms of educational quality, infrastructure development, and capacity building. However, several challenges persist. These include issues related to project sustainability, the mismatch between training provided and market demand, and the need for ongoing technical support and faculty training. The COVID-19 pandemic has further complicated these challenges, highlighting the importance of adaptive strategies and robust support mechanisms to ensure the continued success and sustainability of the projects [36].

3. Recommendations for Future Initiatives

To enhance the effectiveness of future TVET projects, several recommendations are proposed:

- Enhanced Collaboration: Strengthening the collaboration between educational institutions and industry stakeholders to ensure that training programs are closely aligned with labor market needs. Developing mechanisms for continuous feedback and adjustment can help bridge the gap between education and employment [37].
- Sustainable Practices: Focusing on the sustainability of projects by investing in local capacity building, technology transfer, and infrastructure maintenance. Ensuring that local institutions are equipped to manage and continue the initiatives independently is crucial for long-term success [38].
- Adaptation and Flexibility: Adapting project strategies to address emerging challenges and changes in the global and local contexts. This includes addressing the impacts of the COVID-19 pandemic and other potential disruptions [39].

4. Contribution to Research and Practice

This study contributes to the understanding of international cooperation in vocational education and provides valuable insights for policymakers, educators, and practitioners involved in similar initiatives. By identifying both successes and areas for improvement, the research informs future strategies and practices in TVET cooperation. It also highlights the need for a more nuanced and contextually aware approach to international educational assistance [40].

5. Areas for Further Research

Future research should explore the long-term impacts of these TVET projects on local economies and workforce development. Additionally, comparative studies of similar initiatives in other countries could provide further insights into best practices and strategies for effective international cooperation in vocational education [41].

In conclusion, China's TVET initiatives in Pakistan represent a significant effort to enhance vocational training and support economic development through the China-Pakistan Economic Corridor. While challenges remain, the positive contributions of these projects underscore the potential for successful international cooperation in vocational education. Through continued adaptation, collaboration, and investment, these initiatives can further contribute to the growth and development of vocational and technical education in Pakistan and beyond [42].

References

[1] "The Fourth China Vocational Education Innovation Development Conference Focuses on 'Belt and Road' Vocational Education," Henan Education (Vocational and Adult Education), no. 12, pp. 2, 2017.

[2] Q. Zhang, "China-Pakistan Economic Corridor Promotes the Popularity of Technical Talents: The Right Time for China's Vocational Education to 'Go Global'," China Foreign Investment, no. 17, pp. 40, 2017.

[3] "Inauguration Ceremony Held at Punjab Tianjin University of Technology," CNR News, [Online]. Available: http://www.cnr.cn/tj/jrtj/20180327/t20180327_524178257.shtml. [Accessed: 04-Jun-2021].

[4] "The 'Luban Workshop' on the China-Pakistan Economic Corridor is Completed and Put into Operation," Sohu News, [Online]. Available: https://www.sohu.com/a/242548262_284449. [Accessed: 04-Jun-2021].

[5] F. Liu, "Research on China's Assistance to Pakistan under the 'Belt and Road' Initiative," South Asian Studies, no. 1, pp. 125-147, 152, 2020.

[6] C. Wang, "Exploring New Models of Vocational Education Cooperation between China and Pakistan," China Economic Times, 09-Aug-2017, p. 7.

[7] "Significant Achievements in the Development of Luban Workshop in Our City," Tianjin Daily, [Online]. Available: http://jy.tj.gov.cn/JYXW/TJJY/202011/t20201106_4042647.html. [Accessed: 04-Jun-2021].

[8] Y. Zhang and X. Chen, "Research on the Forms of Vocational Education Cooperation between China and Countries along the 'Belt and Road'," Vocational Education Research, no. 9, pp. 22-26, 2016.

[9] China (Tianjin) Research Center for WorldSkills Competitions, China's Ten Years of WorldSkills Competitions, Beijing: China Labour and Social Security Publishing House, 2020, p. 62.

[10] Y. Janjua and M. Irfan, "Situation Analysis to Support the Programme Design Process for National Skills Strategy of the Islamic Republic of Pakistan," [Online]. Available: https://mpra.ub.uni-muenchen.de/38153/1/MPRA_paper_38153.pdf. [Accessed: 07-Jan-2024].
[11] Ministry of Planning, Development & Reform, "Pakistan Vision 2025," [Online]. Available: https://www.pc.gov.pk/uploads/vision2025/Pakistan-Vision-2025.pdf. [Accessed: 12-Jan-2024].
[12] B. Ansari and X. Wu, "Development of Pakistan's Technical and Vocational Education and Training (TVET): An Analysis of Skilling Pakistan Reforms," Journal of Technical Education and Training, vol. 5, no. 2, pp. 52-64, 2013.
[13] Senate of Pakistan, "National Vocational and Technical Training Commission Act, 2011," [Online]. Available: http://navttc.gov.pk/wp-content/uploads/2020/10/NAVTTC_Act2011.pdf. [Accessed: 05-Jan-2024].
[14] National Vocational and Technical Education Commission, "Skilling Pakistan: The National Skills Strategy 2009-2013," [Online]. Available: http://navttc.gov.pk/wp-content/uploads/2020/10/NSS2009-2013.pdf. [Accessed: 06-Jan-2024].
[15] C. Martinez-Fernandez and K. Choi, "Skills Development Pathways in Asia: Employment and Skills Strategies in Southeast Asia Initiative (ESSSA)," [Online]. Available: https://www.oecd-ilibrary.org/docserver/5k94hdlll7vk-en.pdf?expires=1641521964&id=id&accname=guest&checksum=FFEB9F44E33762DEA242F6BEF944F5AF.
[Accessed: 07-Jan-2024].
[16] X. Zhao and L. Zhang, "A Review of Pakistan's National Vocational Qualifications Framework," Journal of Wuhan Vocational and Technical College, vol. 19, no. 1, pp. 71-75, 2020.
[17] M. Guder and A. Tahir, "Human Resource Development (HRD) in Technical & Vocational Education & Training (TVET) of Pakistan," [Online]. Available: http://www.skillingpakistan.org/files/228165/HRD_Policy_28.12.12.pdf. [Accessed: 19-Jan-2024].
[18] International Labour Organization, "Pakistan State of Skills," [Online]. Available: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/genericdocument/wcms_742212.pdf.
[Accessed: 12-Jan-2024].
[19] S. A. Shah and M. Z. Khan, "Comparative Analysis of TVET Sector in Pakistan," [Online]. Available: http://tvetreform.org.pk/wp-content/uploads/downloads/pse/Comparative%20Analysis%20of%20TVET%20Sector%20in%20Pakistan.pdf. [Accessed: 07-Jan-2024].
[20] S. A. H. Naqvi, M. Ahmad, and G. R. Siddiqui, "Role of National Vocational and Technical Training Commission (NAVTTC) in the Implementation of National Skills Strategies (NSS) 2009-2013," Pakistan Journal of Distance and Online Learning, vol. 5, no. 2, pp. 235-246, 2019.
[21] L. Xie, "Strengthening Internal Quality and Efficiency to Strive for Equitable and Quality Vocational Education," Chinese Vocational and Technical Education, no. 27, pp. 5-11, 2020.
[22] X. Wang and Z. Yan, "Analysis and Countermeasures of China's Vocational Education Governance Capacity," Hebei Vocational Education, vol. 6, no. 1, pp. 11-14, 27, 2022.
[23] Q. Xie, "Analysis and Implications of Pakistan's National Vocational Qualifications Framework," Vocational Education Forum, no. 6, pp. 162-169, 2019.
[24] P. Cui, "Research on the Image of Contemporary Chinese Vocational Education: Based on the Text Analysis of People's Daily from 1949 to 2018," Vocational and Technical Education, vol. 40, no. 24, pp. 33-37, 2019.
[25] Central People's Government of the People's Republic of China, "Notice of the State Council on Issuing the Implementation Plan for the Reform of National Vocational Education," [Online]. Available: http://www.gov.cn/zhengce/content/2019-02/13/content_5365341.htm. [Accessed: 03-Feb-2022].
[26] E. Zhao, "Integration of Industry and Education with Greater Efforts," People's Daily, 14-Jun-2018.
[27] S. A. H. Naqvi, A. Zeeshan, and K. J. Assi, "Analyzing the Functioning of NAVTTC's Centers of Excellence for Implementing National Skills Strategy in Pakistan," Elementary Education Online, vol. 20, no. 2, pp. 647-652, 2021.
[28] C. Wang, "Exploring New Models of Vocational Education Cooperation between China and Pakistan," China Economic Times, 09-Aug-2017, p. 7.
[29] Y. Zhang and X. Chen, "Research on the Forms of Vocational Education Cooperation between China and Countries along the 'Belt and Road'," Vocational Education Research, no. 9, pp. 22-26, 2016.
[30] F. Liu, "Research on China's Assistance to Pakistan under the 'Belt and Road' Initiative," South Asian Studies, no. 1, pp. 125-147, 152, 2020.
[31] China (Tianjin) Research Center for WorldSkills Competitions, China's Ten Years of WorldSkills Competitions, Beijing: China Labour and Social Security Publishing House, 2020, p. 62.
[32] Y. Janjua and M. Irfan, "Situation Analysis to Support the Programme Design Process for National Skills Strategy of the Islamic Republic of Pakistan," [Online]. Available: https://mpra.ub.uni-muenchen.de/38153/1/MPRA_paper_38153.pdf. [Accessed: 07-Jan-2024].
[33] "The Fourth China Vocational Education Innovation Development Conference Focuses on 'Belt and Road' Vocational Education," Henan Education (Vocational and Adult Education), no. 12, pp. 2, 2017.
[34] Ministry of Planning, Development & Reform, "Pakistan Vision 2025," [Online]. Available: https://www.pc.gov.pk/uploads/vision2025/Pakistan-Vision-2025.pdf. [Accessed: 12-Jan-2024].
[35] B. Ansari and X. Wu, "Development of Pakistan's Technical and Vocational Education and Training (TVET): An Analysis of Skilling Pakistan Reforms," Journal of Technical Education and Training, vol. 5, no. 2, pp. 52-64, 2013.

[36] Senate of Pakistan, "National Vocational and Technical Training Commission Act, 2011," [Online]. Available: http://navttc.gov.pk/wp-content/uploads/2020/10/NAVTTC_Act2011.pdf. [Accessed: 05-Jan-2024].
[37] National Vocational and Technical Education Commission, "Skilling Pakistan: The National Skills Strategy 2009-2013," [Online]. Available: http://navttc.gov.pk/wp-content/uploads/2020/10/NSS2009-2013.pdf. [Accessed: 06-Jan-2024].
[38] C. Martinez-Fernandez and K. Choi, "Skills Development Pathways in Asia: Employment and Skills Strategies in Southeast Asia Initiative (ESSSA)," [Online]. Available: https://www.oecd-ilibrary.org/docserver/5k94hdlll7vk-en.pdf?expires=1641521964&id=id&accname=guest&checksum=FFEB9F44E33762DEA242F6BEF944F5AF.
[Accessed: 07-Jan-2024].
[39] X. Zhao and L. Zhang, "A Review of Pakistan's National Vocational Qualifications Framework," Journal of Wuhan Vocational and Technical College, vol. 19, no. 1, pp. 71-75, 2020.
[40] M. Guder and A. Tahir, "Human Resource Development (HRD) in Technical & Vocational Education & Training (TVET) of Pakistan," [Online]. Available: http://www.skillingpakistan.org/files/228165/HRD_Policy_28.12.12.pdf. [Accessed: 19-Jan-2024].
[41] International Labour Organization, "Pakistan State of Skills," [Online]. Available: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/genericdocument/wcms_742212.pdf.
[Accessed: 12-Jan-2024].
[42] S. A. Shah and M. Z. Khan, "Comparative Analysis of TVET Sector in Pakistan," [Online]. Available: http://tvetreform.org.pk/wp-content/uploads/downloads/pse/Comparative%20Analysis%20of%20TVET%20Sector%20in%20Pakistan.pdf. [Accessed: 07-Jan-2024].