

Aden Container Terminal's Future: Opportunities, Threats, and the Role of Private Sector Participation

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المستخلص

تبحث هذه الدراسة في دور الشراكات بين القطاعين العام والخاص (PPPs) وأثرها في تحسين الكفاءة التشغيلية ودعم الميزة التنافسية للموانئ البحرية، وبشكل خاص محطة عدن للحاويات اليمنية. تسلط الدراسة الضوء على العقبات والأفاق التي يواجهها ميناء عدن، الذي يعاني من ضعف الكفاءة التشغيلية في مرافق والبنى التحتية للخدمات العامة الناجمة عن عوامل متعددة مثل تعدد الإدارات وعدم كفاية الخبرة التقنية. تؤكد الدراسة على الأهمية الاستراتيجية للشراكات بين القطاعين العام والخاص في جذب الاستثمارات الخاصة، وتسهيل نقل التكنولوجيا الجديدة، وتعزيز الكفاءة من خلال الممارسات الإدارية المعاصرة. حللت الدراسة حالات محددة من خلال إطار تحليلي وصفي من خلال استخدام مصفوفة التحليل الرباعي SWOT، مع تحديد العوامل الداخلية والخارجية التي تؤثر على جدوى الشراكات بين القطاعين العام والخاص في محطة عدن للحاويات، بما في ذلك المزايا الجغرافية والبيئية السياسية المعقدة. خلصت الورقة إلى أهمية وجود شراكة مناسبة مع القطاع الخاص المتخصص، ولكنها أيضًا اقترحت إجراء مزيد من البحوث حول الآثار الاقتصادية لمشاركة القطاع الخاص ومراجعة الأطر القانونية لتحسين دمج الشراكات بين القطاعين العام والخاص في إدارة الموانئ والعمليات، بهدف تعزيز مكانة عدن كمركز تجاري إقليمي.

الكلمات الدالة: مشاركة القطاع الخاص، التنافسية، محطة حاويات عدن.

Abstract:

This study examines the function of Public-Private Partnerships (PPPs) in improving the operational efficiency and competitive advantage of maritime ports, particularly the Aden Container Terminal in Yemen. The study examines the obstacles and prospects encountered by the Port of Aden, marked by inefficiencies in public service facilities and infrastructure stemming from variables such as administrative plurality and insufficient technical expertise. It underscores the strategic significance of PPPs in attracting private investment, facilitating the transfer of new technology, and enhancing efficiency via contemporary management practices. The research examines particular case studies through a descriptive-analytical framework and SWOT analysis, identifying critical internal and external factors affecting the viability of PPPs at Aden Container Terminal, including geographical benefits and a complex political environment. The paper concluded the importance in having appropriate partnership with the specialized private sector, however, it has also suggested further research on the economic impacts of private sector

involvement and reviews of legal frameworks to better integrate PPPs into port management and operations, aiming to bolster Aden's position as a regional trade hub.

Key words: Private Sector Participation, Competitiveness, Aden Container Terminal.

1- Introduction:

The shipping industry became a highly competitive industry (Tijan, et al., 2021). The combination of fierce competition, high capital intensity, and complete dependability on the global economy and oil price resulted in three major trends within the container shipping industry; increasing demand for larger container ships, the establishment of container shipping alliances, and the emergence of slow steaming. Containership sizes have significantly increased in the last two decades (UNCTAD, 2018). It has come a long way in its development since the beginning of containerization in the mid-1950s, with the world's largest containership currently reaching a staggering 24,000 TEUs as an Evergreen containership. Therefore, ports should increase their competitive position by attracting larger ships.

Competition in the port sector has significantly increased in recent years due to the dynamic environment shaped by numerous and interconnected forces influencing port operations. To survive and succeed, it has become imperative for ports to keep pace with advancements and modernization in maritime transportation and port services. This necessity has led many countries to seek strategic partnerships with the private sector, which specializes in port management and operations. Such collaborations aim to leverage the private sector's capability to provide modern management and inject the necessary financial liquidity for investing in advanced maritime ports and introducing modern technologies.

Different types of partnerships have emerged with the private sector, which differ from one country to another according to the nature and requirements of the country. Perhaps the most widespread and extensive type is Landlord PPPs (Habsi, et al., 2022).

2- Literature Review:

2.1 The importance of private sector participation

Many countries especially developing ones are facing the problem of inefficiency in the performance the public services facilities and infrastructure due to the large loss of output and the lack of the optimal use of labor, and the presence of many other problems encountered by governments in their management of the public utilities, such as administrative pluralism, lack of technical expertise, low levels of wages and lack of independence and the lack of effective anti-corruption mechanisms, in addition to the negative effects of the environmental caused by public utilities, due to negligence and poor maintenance, operation, and management (Chen & Guo, 2020).

The reasons and motives for the partnership with the private sector are summarized in the following points (Rashed & Shah, 2021):

- Weak efficiency of the government administration and its public sector in managing the utility and the public facilities, which was reflected in the high cost of public services with the deterioration.

- The infrastructure facilities hold paramount importance as they are critical drivers of economic growth and global competitiveness. Given the substantial investments required for infrastructure development, coupled with the governments limited financial resources and administrative challenges, it is clear that enhancing and optimizing these essential facilities cannot be achieved without effective collaboration with the private sector.
- Reduction of the financial burden placed on the governments to meet the increasing demand for public utility services and products, by finding additional alternative sources for financing the projects through the private sector, which will contribute to reducing the public expenditure.
- Participation with the private sector participation in infrastructure projects is an important direction to attract private investments, either national or foreign.
- The transfer of advanced technology from abroad through foreign investors and transfer of the modern management methods and techniques, whether from the national or foreign private sector.
- Time and cost reduction required for the establishment of new facilities, and energies and transferring the risks and burdens of projects to the private sector, which is capable of bearing and managing these risks.
- Improve efficiency in operating projects and respond quickly to the consumers' needs considering the private sector flexibility in moving and the advantage of the opportunities, making decisions, and responding quickly to any sudden problems, all are factors missed in government administration.

2.2 Previous studies focused on the private sector partnership in seaports:

(Wanis, et al., 2021) has analyzed the effectiveness of the PPP contribution to Maghreb Ports in achieving the United Nations SDGs goals, and it could benefit from their strategic location. Although its seaports suffer from lack and or insufficient infrastructure and superstructure this is due to their ownership structure as most of them are public port models, the research aims to describe sustainability and its dimensions in the seaport sector.

(Nezzari, et al., 2021) have examined the partnership with the private sector in the infrastructure projects, with the case study of the Central Port in Algeria. The researchers stated that the infrastructure projects are supportive of sustainable development, and the partnership between the public and private sector is one of its tools, given the existence of a financing gap, to reach a diagnosis of its reality in Algeria. The research concluded that the lack of funding and the weakness of the private sector negatively affected that. The research warned of the need to accompany the private sector while providing continuous incentives to the foreign investor to make the partnership in the central port project succeed to support development.

The research concluded that despite the great efforts of the public sector, especially the national one, to establish infrastructure projects and provide funds and equipment for their completion, the reality of infrastructure projects did not reach the set goals, especially the stage of lack of financial resources, which greatly impeded the continuation of the completion of projects, and this is what necessitated the participation of the private sector to contribute in supporting the developmental efforts. The researcher explained that the Algerian central port is distinguished from the rest of the

ports as it is a unique project of its kind in all fields, whether in terms of providing job opportunities, estimated at 200,000 jobs, in addition to the port's ability to compete with the rest of the ports located in the Mediterranean. The researchers also explained that the Algerian partnership model with the Chinese is a successful model for financing and setting up this project. The researchers also recommended the need to continue improving the legislative and regulatory framework for partnership in the field of infrastructure, which simplifies procedures between the public and private sectors.

While (Al-Omari & Hamid, 2022) have addressed the impact of the partnership between the public and private sectors on the infrastructure in Iraq, concerning the experience of the General Company for Iraqi ports. Furthermore, the research concentrated on infrastructure financing through effective partnership methods between the public and private sectors in the field of infrastructure. Whereas, the study's goal was to develop a successful solution and partnership methods, for enhancing the infrastructure development from both economic and developmental perspectives. The research identified the port transport sector as a specific area with weak infrastructure due to low absorptive capacity. However, they have proposed new methods for rehabilitating and developing port infrastructures through partnership systems and methods focusing on the benefits of the Partnership between the public and private sectors on the development of port infrastructure, increase of the annual capacity, and improve the competitiveness with other ports. The research identified various challenges, including weak infrastructure services due to economic, political, and security instability, as well as insufficient oversight and the absence of a legislative and legal framework regulating relations between contracting parties. Despite the obstacles, the research highlighted that Iraqi ports have witnessed rapid development to meet the requirements of growth and global trade volume.

(Capt.Al-Safaani, 2022) This study of the participation of the private sector and its impact on the performance of seaports, a case study was the port of Hodeidah, which is considered one of the most important studies that shed light on the participation of the private sector in Yemeni seaports and its role in developing and enhancing the performance of Seaports, despite the lack of Arab studies that dealt with the participation of the private sector in seaports in particular, The study aimed to identify the participation of the private sector and its impact in developing the performance of Yemeni seaports. The study methodology depended on the descriptive analytical approach; however, a questionnaire was distributed as the main tool for collecting the data concerning this study. It consisted of (40) items and the tool was applied to (200) Employees from all administrative levels, including (130) Hodeidah Port employees and also (70) private sector investors participating in Hodeidah Port, and by adopting some statistical methods to analyze data through the Statistical Packages Program (SPSS). The study reached several results, most notably: that the private sector participation was at a high level for all dimensions, at a rate of (76.40%), and in the seaport performance, it was also at a high level for all dimensions, at a rate of (77.40%). The study concluded with several recommendations, most notably: modernizing legislation and laws in the field of investment in the maritime transport sector, the participation of the private sector in modernization, creating a single electronic window to facilitate procedures and providing

the required services to customers, and finally involving the private sector to establish investment projects.

(A. M. Youssef, 2023) has examined in his research paper the privatization in Egypt, the researcher has clarified the positive aspects and the negative aspects, as well as reviewed the privatization of the maritime sector in Egypt and what are the pros and cons that will be reflected in the Egyptian economy as a result of privatization in addition to the impact of the privatization on the efficiency and performance of the maritime sector. However, opposition to the idea of privatization concluded through the research that privatization will increase the capital of companies as well as increase the financial liquidity in the state's public treasury, and also reduce the financial burden on the state's general budget. The research has relied on the survey to find out the pros and cons of privatization in the maritime sector in Egypt and has reviewed the experiments of the Sokhna Port and East Suez Canal port. The researcher has concluded that privatization should not be a sale of assets, but a privatization of public administration and liberation from rigid rules and regulations and it has a positive impact on the maritime sector in Egypt.

(Alshabi, et al., 2023), have analyzed in his research paper the feasibility for the application of Public private partnership (PPPs) at the port of Aden. However, the researchers have highlighted that the port of Aden has faced several challenges, including the ongoing conflict in Yemen, inadequate infrastructure, and insufficient financial resources. These challenges have hindered the port's growth and development and as a result, the Port's potential has not been fully realized. The researchers have used SWOT analysis to determine strengths, weakness, threats, and opportunities for applying the PPPs in Ports around the world, whereas the research has concluded that it is worth noting that PPPs in ports also face challenges and risks, such as contractual and regulatory complexities, political and social opposition, and financial risks. Therefore, careful planning, management, and evaluation are critical to ensure the success of such partnerships.

2.3 Research Gap and Contribution:

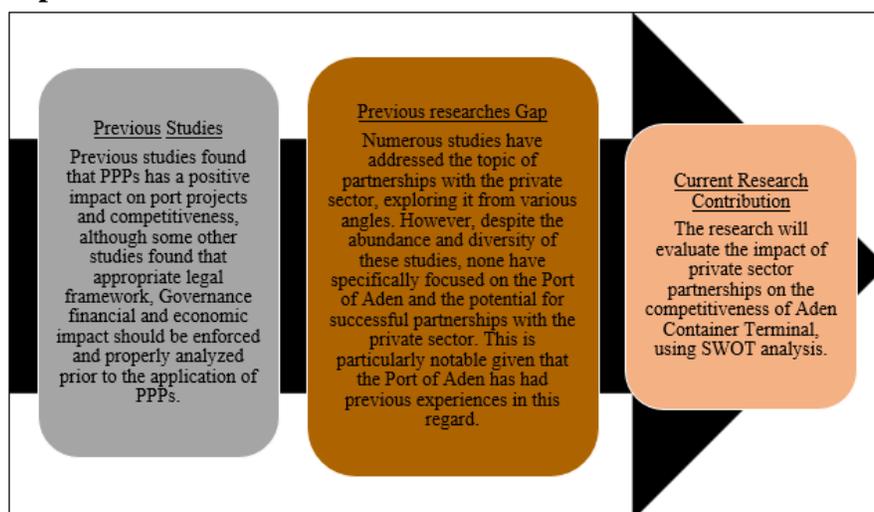


Figure (1) Research Gap and Contribution.

Source: By the Researcher 2024.

3- Research Problem:

Aden Container Terminal's groundbreaking public-private partnership, expected to revive the Port of Aden, which ended prematurely after four years. This study investigates the causes of this early dissolution, in compared with successful regional models and analysis the internal and external factors at the Port of Aden for the feasibility of new Public Private Partnership in future.

4- Research Aims:

This research aims to identify internal and external factors that influence the decision to pursue PPPs for Aden container terminal, however from the main research Aim, numerous of objectives are concluded as follows:

1. To analyze the existing obstacles and opportunities for the Port of Aden, focusing on inefficiencies in public service facilities and infrastructure.
2. To assess the impact of administrative plurality and lack of technical expertise on the operational effectiveness of the Port of Aden.
3. To explore the strategic importance of PPPs in attracting private investment and facilitating the transfer of new technologies.
4. To utilize a descriptive-analytical framework and SWOT analysis to identify key internal and external factors influencing the viability of PPPs at the terminal.

5- Research Methodology:

The methodology used is the descriptive-analytical approach, which involves collecting data and information related to the Port of Aden from various sources and analyzing them using the SWOT analysis tool (Strengths, Weaknesses, Opportunities, and Threats). This approach focuses on describing the current state of the port and interpreting the internal and external factors affecting its performance. The goal is to provide a comprehensive perspective that supports the development of strategic recommendations based on the analysis results.

6- Swot Analysis:

The researcher relied on the personal interviews with the key management in the port of Aden and his personal experience as a senior commercial manager for Aden container Terminal with a 25 years' work experience, in addition to the annual reports and the marketing strategic plan for Aden Container Terminal for the year 2024, which prepared by the Port of Aden and Aden container terminal commercial department.

Furthermore, some inputs from the electronically distributed survey were used to assess the effectiveness of the partnership with the private sector in the management, operation, and development of Aden Container Terminal. The SWOT analysis focused on analyzing the internal and external environment together, identifying shortcomings and weaknesses, and highlighting the strengths that distinguish Aden Container Terminal.

Through the analysis, it became clear that there are opportunities for the port of Aden if weaknesses are turned into strengths through finding appropriate solutions and treatments. Additionally, overcoming threats and developing plans that reduce the impact of threats on the

future of Aden Container Terminal requires government intervention. It is crucial to incorporate the development of seaports, specifically Aden port, into government programs and strategic plans for the post-war phase, which has exceeded eight years.

Therefore, the port management needs to develop a suitable strategy to ensure the continuity of the container terminal's activity and increase its market share, especially given the importance of the port's location as a significant advantage and a powerful position that cannot be overlooked and should be utilized.

SWOT analysis can be applied to assess the feasibility and potential success of implementing Public-Private Partnerships (PPPs) at Aden Container Terminal. This analysis is particularly aligned with the United Nations Sustainable Development Goals (SDGs), focusing on Goal 9 (Industry, Innovation, and Infrastructure) and Goal 17 (Partnerships for the Goals). The analysis aims to identify internal and external factors that may influence the decision to pursue PPPs for the terminal. By examining strengths, weaknesses, opportunities, and threats, this strategic evaluation will not only consider the operational and competitive aspects of PPPs but also their potential to foster sustainable development through improved infrastructure and effective partnerships (UNSDG, 2025), the SWOT analysis factors are as follows:

6.1 Internal Factors (Strength):

1. The geographical location enhances the importance of the port of Aden, especially its proximity to international shipping routes linking key global trade centers between the East and the West.
2. The port is a natural and year-round protected harbor, unaffected by wind seasons or climate disturbances.
3. It was one of the world's major maritime supply centers, which would restore its previous status if other factors were available.
4. It is characterized by a cheap and efficient workforce capable of working with competence and prowess.
5. It houses the largest and only container terminal in the Republic of Yemen equipped with high-efficiency facilities.
6. The container terminal is operated by advanced terminal operational systems (TOS).
7. The container terminal owns sufficient space to implement development projects, making the port of Aden a regional hub for transshipment trade.
8. The legislative and procedural structure in the container terminal qualifies it for partnership with the private sector, especially as it is built on a basis of collaboration with the private sector.
9. The container terminal at the port of Aden is an attraction for specialized private sector companies, given the mentioned points, as well as the Chinese government's interest in the Silk Road project, which cannot ignore the port of Aden.

10. The proximity of the port of Aden to international navigation routes helps reduce maritime shipping costs in the event of normalization of political and security life in the Republic of Yemen, contributing to the reduction of war risk fees.
11. The container terminal of the port of Aden is exempt from customs and tax restrictions as it is located within the geographical framework of the free zone, distinguishing it from the benefits of free zone laws.
12. The distance of the Aden container terminal from the city makes it an ideal location for managing business and service activities independently, which will enhance the private sector's desire to collaborate with the government sector to manage and operate the container terminal if other supporting factors are available.

6.2 Internal Factors (Weakness):

1. The security and political instability since 2011 have cast shadows on the service and commercial activities in the port of Aden, followed by the summer war in 2015 and its repercussions until today.
2. The closure of land routes from the port of Aden to local markets and population centers significantly affected the port's activities, doubling the costs of overland transportation for shipments entering the local market from the port of Aden to the northern and central regions of Yemen.
3. The imposition of a second customs duty in areas controlled by the Houthi group on shipments coming from the seaport in the port of Aden doubled the shipping costs through the port.
4. Levying duties and tolls on trucks carrying commercial shipments along the road extending from the port of Aden to population centers in the northern, central, and even eastern regions of the Republic of Yemen, where the eastern regions are under the control of the legitimate government.
5. Many industrial activities related to export and re-export have halted due to the war and political instability, further increasing the costs of container transport, especially since incoming containers generally return empty.
6. Administrative discipline has weakened as a result of the war's consequences and the lack of security and political stability.
7. Many workers have shifted to light work due to work injuries and aging, with no strategic plan for settling the old workforce and accommodating new workers based on competence.
8. Limited navigational depths and pier depth in light of the developments in container activity service worldwide and in the Red Sea region.
9. Equipment limitations, whether it's wharf equipment or yard storage equipment.
10. Limited storage areas and electricity connection points for refrigerated containers.
11. Despite being unique in the Republic of Yemen, the operational system of Aden Container Terminal is considered the oldest in the region when compared to leading container terminals in the Red Sea and the Gulf of Aden region.

12. Imposing war risk insurance fees has made the Aden Container Terminal a less preferable option for use by ships.

6.3 External Factors (Threats)

1. The continued security and political instability in the Republic of Yemen threaten to undermine commercial and service activities in the country, especially in the port of Aden.
2. The security instability in the Red Sea region and the increasing intensity of conflicts with the Houthi group, along with a lack of inclination towards peace, will multiply maritime transportation fees to Yemeni ports in general.
3. The existence of advanced and modern container terminals in neighboring countries' ports encourages many Yemeni importers to deal with them and then transport the shipments by land to Yemeni markets.
4. The ongoing closure of major land routes and the imposition of customs duties by the Houthi group on shipments coming from the port of Aden to its controlled areas double the shipping costs through the port of Aden.
5. The continued operation of the Hodeidah port without opening land routes from the port of Aden to local markets and population centers increases the cost disparity between the two ports for the sake of Hodeidah.
6. The deterioration of the local currency against the US dollar in areas under the control of the legitimate government mirrors the exchange rate situation in areas controlled by the Houthi group.
7. Non-payment of salaries and the worsening living conditions of Yemeni citizens due to the war and its repercussions, along with the absence of a political settlement among local conflicting parties, will further amplify the recession and reduce demand for goods and other necessities, affecting commercial activities in the city of Aden and its port.
8. The continued security and political instability will complicate forming partnerships with specialized private sectors to ensure the implementation of infrastructure and superstructure development projects in the port of Aden and the container terminal in particular.
9. Declining import activities through the port of Aden, with obstacles such as the opening of the Hodeidah port, road closures, increased maritime shipping fees, and the instability of the local currency, pose a significant threat to the activities of the port of Aden.
10. Equipment aging, wear and tear, an increase in light work cases among employees, and the laxity in addressing administrative discipline, coupled with rising operational expenses and declining income, threaten the activities and stability of the container terminal.
11. The absence of partnerships with the global and specialized private sector, which could work in collaboration towards the development and activation of the Aden Container Terminal's role, and enhance its competitiveness locally and regionally. Working on risk-sharing and addressing challenges collectively would prevent the continuous decline in the performance of the Aden Container Terminal and the widening of the technical and managerial gap between it and its counterparts in the region

6.4 External Factors (Opportunities)

1. The location of the port of Aden itself is considered an opportunity that must be exploited if the rest of the factors are available.
2. The announcement of peace in Yemen and power-sharing among conflicting authorities since 2011.
3. Neutralizing the port of Aden from conflicts and government interventions and granting it administrative independence.
4. Drawing up a strategic plan for the governance of Aden to support the city's service and commercial activities and enhance the city's vision for the next twenty-five years.
5. Declaring the city of Aden, a free zone with independent management will enhance its commercial activity and possess the Port activities for the imports and re-exports business.
6. Opening roads and creating dedicated routes for transporting shipments from the port of Aden to local market centers and enhancing the network of land road connections to reduce time and costs.
7. Activating the role of customs and supporting it to operate on a single-window basis in partnership with the port of Aden and other relevant entities.
8. Eliminating the multiplicity of security entities operating in the port of Aden, especially the container terminal, and integrating them into a specialized and highly trained unified entity.
9. Conducting studies that would work in partnerships with specialized private sector entities and ensuring the injection of funds to implement development projects in the port of Aden.
10. Collaborating with the government to enact legislation that would liberate the port of Aden from government restrictions and bureaucracy in dealing, especially the existing container terminal currently managed by a private company but subject to government procedures and restrictions that have constrained its ability to operate outside the scope of government procedures and bureaucracy. Also, liberating it from the existing laws in the Republic of Yemen through free market legislation.
11. Develop a Private partnership model towards the development of the Aden container terminal and execution of the expansion plans and enhance its competitiveness in the region.

The above analysis give identifies weaknesses that need to be addressed, as well as threats that could diminish the effectiveness of opportunities and weaken sources of strength. This situation obstructs the potential for development opportunities for Aden Container Terminal. However, these opportunities can be enhanced, and sources of strength supported, by fostering partnerships with specialized private sector entities, contingent upon achieving internal alignment among the various Yemeni political parties and their differing orientations. Such partnerships with the private sector will ensure sufficient capital is injected to complete stalled development projects and provide the necessary expertise to support strategic and marketing plans. This approach will enhance development projects and strengthen the competitiveness of Aden Container Terminal.

Therefore, from the researcher's perspective, the management of the Port of Aden should adopt the necessary strategies to support competitiveness. According to the researcher, two crucial strategies

need to be implemented: a defensive strategy and a remedial strategy simultaneously. The defensive strategy will leverage strengths against threats, while the remedial strategy will address weaknesses and capitalize on available opportunities to support and enhance the position of Aden Container Terminal both domestically and internationally.

7- Conclusion:

The Port of Aden holds significant potential for regional and international trade due to its strategic location. To fully realize these potential, investments in infrastructure, enhanced transportation networks, and modernized logistics systems are crucial. Ensuring administrative independence by neutralizing political interference and establishing autonomous management will streamline operations and boost efficiency. Creating a free trade zone with clear legislative frameworks, simplified customs procedures, and unified security operations will enhance the port's commercial appeal. Strengthening collaboration between the port authority and relevant entities will reduce bureaucratic hurdles and accelerate cargo handling processes, making the port more competitive. Moreover, fostering partnerships with the private sector through a well-defined public-private partnership (PPP) model can attract funding and expertise for expansion projects. Introducing supportive legislation to encourage investment and minimize government restrictions will further enhance the port's operational capabilities, positioning Aden as a leading trade hub in the region.

For further studies, the researcher suggests the following ideas for further studies related to the current research such as measuring the economic returns of private sector participation in Aden Container Terminal by conducting an economic impact analysis using input-output models to estimate the direct and indirect effects of private sector management. In addition to examining the legal and regulatory frameworks for private sector participation, including a legal review, comparisons with frameworks in competitive ports, and input from legal experts and stakeholders.

Reference:

- A. M. Youssef, S. I., 2023. Pros and Cons of Privatization in the Maritime Sector in Egypty, Alexandria, Egypt: Journal of The Arab Institute of Navigation.
- Al-Omari, M. M. A. & Hamid, B. A., 2022. The impact of the partnership between the public and private sectors on the infrastructure in Iraq, with reference to the experience of the General Company for Iraqi ports, Baghdad: Materials Today Proceeding.
- Alshabi, A. H. A., Qardash, A. A. A. & Hafez, A. I. A., 2023. Analyzing the feasibility for the application of Public private partnership (PPPs) at the Port of Aden, Alexandria, Egypt: *المجلة العلمية للدراسات التجارية والبيئية*, 14.
- Capt.Al-Safaani, E. E. A., 2022. Participation of the Private Sector and Its Influence on Developing The erformance of Yemeni Seaports - Case Study: Hodeidah Port, Sana'a: A thesis submitted to the Department of Business Administration-College of Graduate Studies in to complete the requirements for obtaining a Master's Degree in Business Administration.

- Chen, B. & Guo, X., 2020. Public-Private Partnership and transport infrastructure investment efficiency: Evidence from countries along the 21st-Century Maritime Silk Road. *Journal of Coastal Research*, 112(SI), pp. 269-274.
- Habsi, A., F.A.S.H. & Ullah, A., 2022. The role of the Public-Private Partnership (PPP) in achieving the optimal economic and social benefits through the port sector. *International Journal of Management Science and Business Administration*, 8(5), pp. 57-65.
- Jayasena, N., Chan, D. & Kumaraswamy, M., 2022. Is public-private partnership (PPP) a preferred strategy for procuring smart infrastructure in developed countries: an empirical study of the perceived benefits, barriers and recommended strategies. *Sustainability*, 14(11), p. 6421.
- Nezzari, R., Sabrina, M. & Mayouf, H., 2021. Partnership between the public and private sector in the field of infrastructure With reference to a project Central Port in Algeria. *Journall of Economic and Administrartive Researches*, 15(2), pp. 137-155.
- Rashed, A. H. & Shah, A., 2021. The role of private sector in the implementation of sustainable development goals. *Development and Sustainability*, 23(3), pp. 2931-2948.
- Tijan, E., Jović, M., Aksentijević, S. & Pucihar, A., 2021. Digital transformation in the maritime transport sector, s.l.: *Technological Forecasting and Social Change*.
- UNCTAD, 2018. *Review ofrt Maritime Transpo*, s.l.: UNCTAD.org.
- Wanis, A., Hlali, A. & Twati, H., 2021. The desired role of Private sector and Seaports Governance within SDGs: Case of Maghreb Region, Alexandria, Egypt: *Malaysian Journal of Industrial Technology*.
- UNSDG, 2025. United Nations Department of Economic and Social Affairs. [Online] Available at: <https://sdgs.un.org/goals> [Accessed 5 1 2025].