

## Analysis of Enhancing the Competitiveness of Aden Container Terminal through Partnership with the Private Sector: A Study Using Porter's Model

Prepared By

Mr. Ashraf Ali Abdo Qardash<sup>1</sup>, Prof. Dr. Akram Soliman Elselmy<sup>2</sup>, Dr. Youssef Khairy<sup>3</sup>

<sup>1</sup>Senior Commercial Manager, Aden Ports Development Company, Aden Container Terminal.

<sup>2</sup>Dean of College of Engineering and Technology, Professor of Port Planning and Coastal Engineering.

<sup>3</sup>Lecturer in Water Resources and Coastal Engineering, Construction and Building Engineering Department, College of Engineering and Technology.

DOI NO. <https://doi.org/10.59660/49102>

Received 22/25/2024, Revised 08/06/2024, Acceptance 10/07/2024, Available online and Published 01/01/2025

### المستخلص:

برزت مشاركة القطاع الخاص في عمليات الموانئ كأستراتيجية محورية في جميع أنحاء العالم، تهدف إلى تعزيز الكفاءة، وتشجيع الاستثمار، وتعزيز القدرة التنافسية في الصناعة البحرية وفي سياق محطة عدن للحاويات، والتي تعد بوابة مهمة للتجارة والتبادل التجاري في المنطقة، فإن استكشاف مشاركة القطاع الخاص يمثل فرصًا وتحديات.

تهدف الدراسة إلى تقييم تأثير الشراكة بين القطاعين العام والخاص وأثرها في تعزيز القدرة التنافسية لمحطة عدن للحاويات. بالإضافة إلى ذلك، فهي تسعى إلى تقييم الوضع الحالي، واقتراح معالجات لأوجه القصور الموجودة، وتحديد أسباب عدم الكفاءة، يمكن تصنيف هذا البحث على أنه بحث استقرائي. يهدف هذا البحث إلى تعزيز المكانة التنافسية لمحطة عدن للحاويات وتحقيق أثر الاستدامة من خلال مشاركة القطاع الخاص في أنشطة الميناء. وفي هذا السياق فقد اقتصر هذا البحث على محطة عدن للحاويات خلال العام ٢٠٢٣م؛ وقامت الدراسة على أساس استخدام تحليل Porter. خلص البحث إلى أن الشراكة مع القطاع الخاص العالمي والمتخصص في هذا الوقت تعد مسألة محفوفة بالمخاطر، نظرًا للتحديات الأمنية التي تواجهها البلاد منذ حرب صيف عام ٢٠١٥، إلى جانب عدم الاستقرار السياسي وتعطل مؤسسات الدولة التشريعية والقانونية.

**الكلمات المفتاحية:** الشراكة بين القطاعين العام والخاص، محطة عدن للحاويات، بورت، اليمن.

### Abstract:

Private Sector Participation (PSP) in port operations has emerged as a pivotal strategy worldwide, aimed at enhancing efficiency, promoting investment, and fostering competitiveness in the maritime industry. In the context of Aden container terminal, a crucial gateway for trade and commerce in the region, the exploration of Private Sector Participation presents both opportunities and challenges.

This study aims to evaluate the influence of Public-Private Partnerships (PPP) on bolstering the competitiveness of Aden Container Terminal. Additionally, it seeks to assess the current status, propose remedies for existing shortcomings, and pinpoint the causes of inefficiencies. This research can be classified as an inductive research approach. This research aims to enhance the

competitive position of Aden container terminal and achieving sustainability impact through participating private sector in port's activities. In this context, this research is limited to Aden container terminal for the year 2023; using Porter analysis. The research concluded that partnering with the global and specialized private sector at this time is fraught with risks, considering the security challenges the country has faced since the Summer War of 2015, along with political instability and the disruption of its legislative and legal institutions.

**Keywords:** Public-Private Partnerships, Aden Container Terminal, Porter, Yemen.

## 1- Introduction:

Sea Ports have played a crucial role in both national economic growth and international trade, as the majority of goods exchanged between nations are transported via maritime vessels (Cong, et al., 2020). Nevertheless, seaports have encountered significant competition, as evidenced by the rising number of acquisitions and mergers within the industry. (Garcia-Alonso, et al., 2019). This heightened competition is primarily driven by factors such as the increasing globalization, containerization, market integration, and the global redistribution of capital and labor. Consequently, these trends have substantially altered the governance, operation, and competitiveness of seaports, particularly container ports (Ismail, 2019).

The shipping industry has become highly competitive due to factors like intense competition, high capital requirements, and heavy reliance on global economic conditions and oil prices. This has led to three major trends in the container shipping sector (Haralambides, 2019): a growing demand for larger container vessels, the formation of container shipping alliances, and the adoption of slow steaming. Container ship sizes have notably expanded over the past two decades, with the largest containerships now reaching capacities of up to 24,000 TEUs, exemplified by vessels like the Evergreen container ship (Garrido, et al., 2020). Consequently, ports need to enhance their competitive standing by attracting these larger vessels.

Port competition has surged in recent years, shaped by various dynamic forces. Strategic planning has become crucial for survival and success, with competitiveness analysis being a key aspect of such planning. Many countries have turned to private sector partnerships to support port operations (Kang, et al., 2018), ensuring financial backing for development and enhancement initiatives, particularly in container ports. These partnerships aim to improve the efficiency and performance of container terminals, elevate their competitiveness, and ensure their sustainability.

Various types of partnerships with the private sector have emerged, tailored to the specific needs and circumstances of each country. Among these, Landlord Public-Private Partnerships (PPPs) have become widespread and extensive (Chechurina & Grin, 2020).

Many developing countries, in particular, are grappling with inefficiencies in their public service facilities and infrastructure. These inefficiencies stem from significant output losses and suboptimal labor utilization, compounded by various challenges in governmental management such as administrative complexities, a lack of technical expertise, low wages, insufficient independence, ineffective anti-corruption mechanisms, and environmental degradation due to neglectful maintenance and management practices (Tamošaitienė, et al., 2020).

In response to limited financial resources and a desire to streamline the state's role for optimal efficiency, many developing nations have increasingly turned to outsourcing public projects and infrastructure initiatives to the private sector. This trend has been spurred by the success stories of developed countries in establishing partnerships between the public and private sectors to deliver infrastructure services effectively (Gantman & Fedorowicz, 2020).

The rationales and incentives for partnering with the private sector can be summarized as follows:

1. **Government Inefficiency:** Public sector inefficiencies often lead to high costs and declining quality in service delivery, resulting in citizen dissatisfaction. Private sector participation can improve efficiency through better management, operation, and competition (Dron, et al., 2021).
2. **Economic Growth and Competitiveness:** Infrastructure facilities are crucial drivers of economic growth and global competitiveness. Given the substantial investments required and the limitations of state resources and administrative capacity, private sector involvement is essential for enhancing the efficiency and expansion of these facilities. (Jones & Bloomfield, 2020).
3. **Financial Relief:** Partnering with the private sector helps alleviate the financial burden on governments by diversifying funding sources and reducing public expenditure (Xie, et al., 2022).
4. **Attracting Investments:** Private sector participation attracts both domestic and foreign investments, fostering economic development and project sustainability (Haralambides, 2019).
5. **Technology Transfer:** Collaboration with the private sector facilitates the transfer of advanced technology and modern management practices, benefiting from the expertise of both national and foreign investors (Smith & Hensher, 2020).
6. **Time and Cost Efficiency:** Private sector involvement streamlines project implementation, reduces time and costs, and transfers risks to entities capable of managing them (Cherkos, et al., 2020).
7. **Enhanced Operational Efficiency:** Private sector flexibility allows for quicker responses to consumer needs and more agile decision-making, factors often lacking in government administration. However, this may lead to reduced government employment opportunities and potential negative impacts on tax revenue (Akopova, et al., 2020).

In summary, private sector participation in infrastructure projects offers numerous benefits, including improved efficiency, increased investment, technological advancements, and reduced financial burdens on governments.

## **2- Literature review:**

Partnership agreements between the public and private sectors have emerged as crucial prerequisites for societal transformations due to their pivotal role in fostering local development, facilitating sophisticated project implementation, and aligning with global shifts. This issue has garnered significant attention on a global scale, as economic and social progress hinges on leveraging the collective capabilities of society, including its energies, experiences, and resources,

with institutional organizations actively participating in project operation and management (Abood, 2016).

Public-private partnerships (PPPs) serve as a mechanism through which governments can procure and execute public infrastructure and services by leveraging the resources and expertise of the private sector. In situations where governments grapple with aging or insufficient infrastructure and seek more efficient service delivery, collaboration with the private sector can engender innovative solutions and provide financial support (WorldBank, 2022).

Several studies have delved into the dynamics and implications of Public-Private Partnerships (PPPs) in various sectors, including infrastructure projects and port management. These studies offer valuable insights into the effectiveness, challenges, and potential of PPPs in different contexts.

For instance, (Lopes, et al., 2021) conducted a case study on the Tibar Bay Port in Timor-Leste, focusing on assessing the performance of PPPs in the country. Through interviews and analysis of contract documents, they explored the legal framework, influencing factors, and application of PPPs in infrastructure projects. The study highlighted the readiness of the Timor-Leste government for PPP implementation but also revealed challenges regarding private sector engagement.

(Estruch, 2021) analyzed PPPs in transportation projects across the Caribbean, evaluating their adherence to good practices and benefits to the public sector. Despite improvements, issues like legal compliance and limited market engagement persist, affecting risk management and overall effectiveness. (Chechurina & Grin, 2020) examined PPPs in port management globally, emphasizing the underutilization of PPPs in Russia. They advocated for leveraging international best practices, particularly the Landlord model endorsed by organizations like the World Bank, to enhance port development in Russia.

Meanwhile, (CELIK & UMAR, 2020) explored the impact of PPPs on Nigerian seaports, specifically the APAPA Ports complex in Lagos. Their study revealed significant improvements in port efficiency and operations following the transfer of terminal management to private entities, highlighting the positive outcomes of port reforms in Nigeria.

Finally, (Malek & Gundaliya, 2020) focused on value for money (VFM) in Indian PPP road projects, identifying and evaluating VFM factors through questionnaire surveys and factor analysis. Their research aimed to enhance decision-making regarding PPP procurement by providing insights into VFM considerations.

Collectively, these studies underscore the diverse applications and implications of PPPs in infrastructure development and management, highlighting opportunities for improvement and best practices for future implementations.

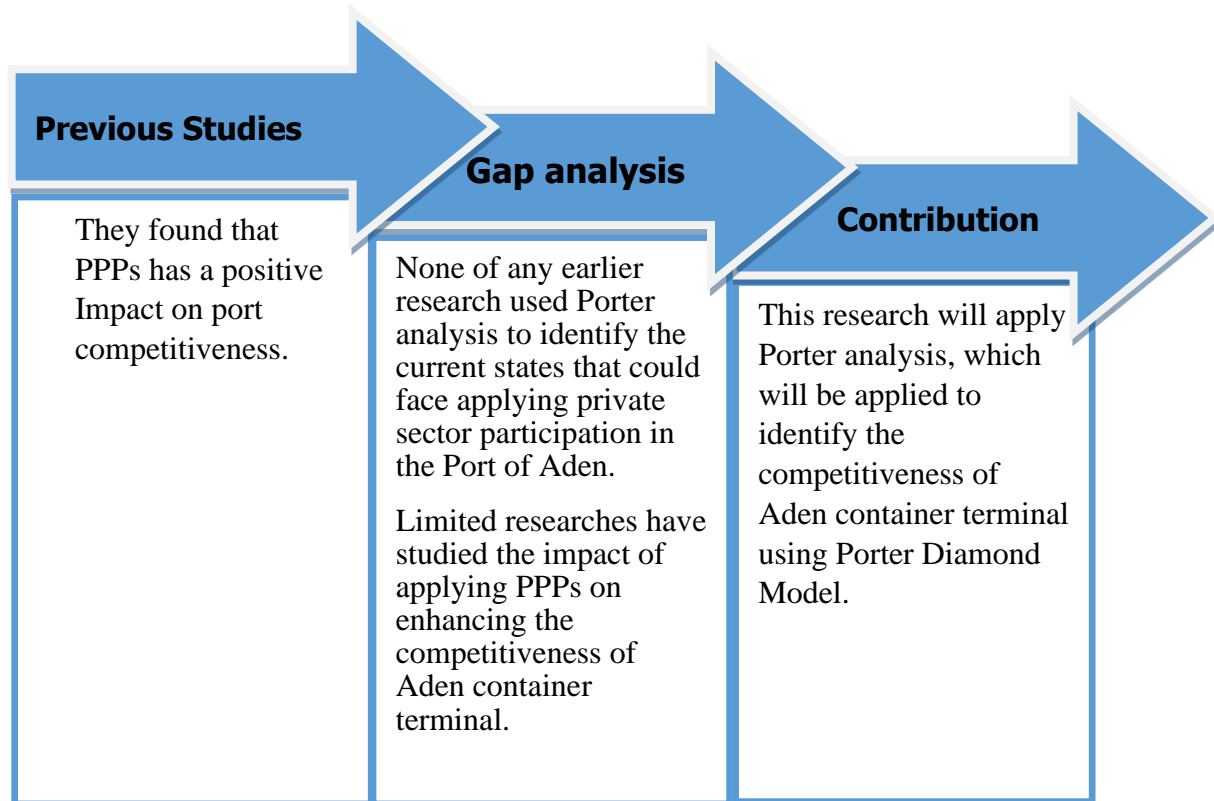


Figure (1) Research Gap Analysis and Contribution.

Reference: by author.

**3- Research problem:**

The establishment of the Aden Container Terminal marked a significant milestone in private sector partnerships within the maritime industry. Initially, the construction and operation of the terminal were entrusted to a private sector partnership under the Build-Operate-Transfer (BOT) model. However, this partnership was short-lived. Three years after its initiation, the initial collaboration with the private sector concluded. Subsequently, the terminal engaged in a new form of cooperation with the private sector, adopting the Landlord model for its operation and management and also has failed to continue. Hence it is necessary to investigate the reasons beyond the PPP experience failures through application of Porter analysis.

**4- Research aim and objectives:**

This study aims to evaluate the influence of Public-Private Partnerships (PPP) on bolstering the competitiveness of the Aden Container Terminal. Additionally, it seeks to assess the status, propose remedies for existing shortcomings, and pinpoint the causes of inefficiencies.

The findings of this research will provide valuable insights for decision-makers contemplating collaboration with the private sector, allowing them to capitalize on successful precedents from other ports. The objective of the research is to conduct a comprehensive analysis of the external and internal factors affecting the partnership project at Aden Container Terminal, taking into

consideration the failures experienced in previous partnerships, despite successful models of partnership at neighboring ports.

## 5- Research methodology:

To bolster the competitiveness of the Aden Container Terminal, the researcher utilized Porter's Five Forces analysis to examine the factors influencing the implementation of private sector partnerships at the Port of Aden. This study follows an inductive research approach and aims to improve the competitive position of the Aden Container Terminal while achieving sustainability impact through private sector participation in port operations. This research is specifically focused on the Aden Container Terminal for the year 2023 and employs the Porter analysis tool.

## 6- Empirical Analysis:

Porter proposed the Diamond Model in 1990 to understand how a set of factors interact with each other to build a competitive industry or economy. The Porter Diamond Model is preferred due to its unique attributes and suitability, particularly its holistic framework for understanding the competitive advantage of nations and regions. Unlike models that focus solely on a company or industry, it examines the entire environment influencing competitiveness.

The factors determining the competitiveness of an enterprise are categorized into four main groups, as follows (Porter, 1990):

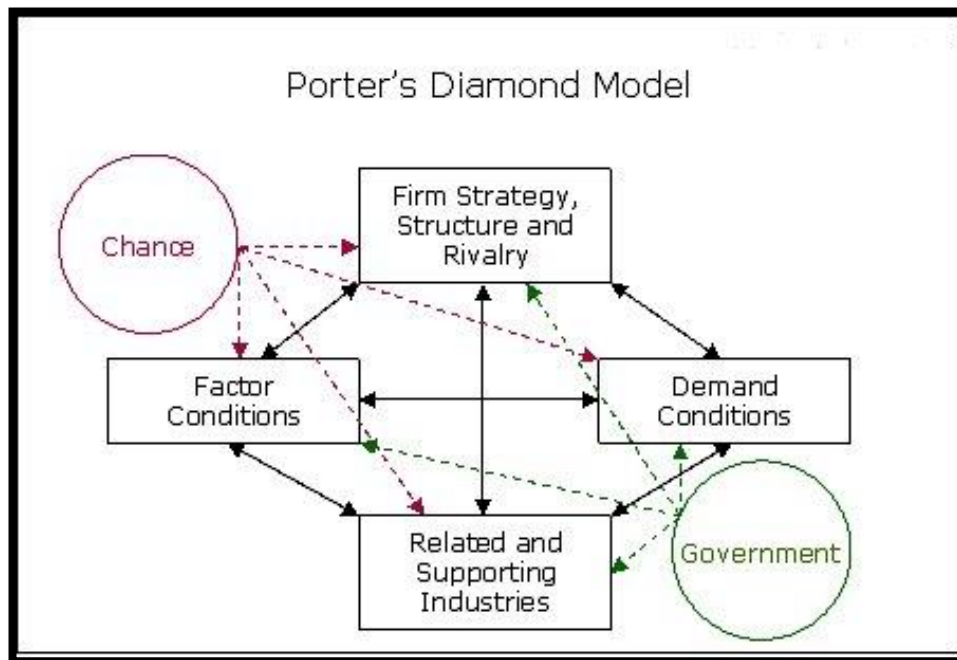


Figure (2) Michael Porter -The Competitive Advantage of Nations.

Source: (Porter, 1990)

The Porter Diamond Model illustrates how four key factors interact to drive national competitive advantage. **Firm Strategy, Structure, and Rivalry** affect and are affected by **Factor Conditions**, **Demand Conditions**, and **Related and Supporting Industries**, fostering innovation through

competition. **Factor Conditions** (resources like skilled labor and infrastructure) are influenced by and influence these other factors. **Demand Conditions** (domestic market characteristics) shape and are shaped by these interactions. **Related and Supporting Industries** provide essential support, influenced by and influencing the other determinants. **Government** and **Chance** events impact all four factors, shaping the competitive landscape through policies and unforeseen events.

By applying Porter's Diamond Model at the Aden Container Terminal and conducting a comprehensive analysis based on Porter's perspective to assess the environmental factors surrounding the terminal, which influence its competitiveness and its active role in the region. We will delve into the six factors of Porter's Diamond, focusing on the Aden Container Terminal as follows:

## **6.1 Production Factors (Factor Conditions):**

The foundation of Porter's Diamond Model encompasses production conditions, pivotal for both governmental and private entities. These conditions, intrinsic in nature, encompass the caliber of the workforce, their expertise, the availability of natural resources, and the quality of infrastructure. Porter's contention underscores the significance of advanced production conditions, emphasizing the necessity of skilled expertise and capital for gaining a competitive edge.

When examining the Aden Container Terminal through the lens of infrastructure, geographical positioning, and its accessibility to local and global markets, alongside the involvement of the private sector in its development, it can be delineated as follows:

- 1.The Aden Container Terminal capitalizes on its strategically advantageous location within the Port of Aden, situated near major international shipping routes. Positioned just four nautical miles from key shipping lanes, including those traversing the Gulf of Aden towards the Red Sea to the north and the Arabian Sea to the south, it holds a significant geographical advantage.
- 2.This prime location affords the Aden Container Terminal a competitive edge in terms of swift vessel arrivals. Rapid access to the port reduces transport time and lowers maritime trip expenses, provided that the terminal operates efficiently and meets the standards expected of competitive container terminals.
- 3.Despite its promising location, the Aden Container Terminal lags behind its counterparts in the Red Sea and Gulf of Aden region due to internal and external challenges. Factors such as security concerns and political instability, exacerbated by the ongoing civil conflict since 2015, contribute to its subdued performance.
- 4.Notably, Aden Container Terminal stands out in Yemen as the sole container terminal equipped with high-efficiency gantry cranes capable of servicing container ships. However, the prevailing security situation disrupts land routes connecting the terminal to major population centers like Taiz, Sanaa, and north Governorates, posing logistical challenges.
- 5.Operations at the Aden Container Terminal rely on a local workforce known for its skill and cost-effectiveness. Yet, the absence of robust training programs and qualification initiatives,

coupled with administrative issues stemming from political and security instability, hampers the optimal utilization of this valuable resource.

6. The private sector plays an active role in supporting the services of the container terminal by utilizing the latest technologies and developing and training the workforce to match the competitive ports. Consequently, the private sector has an active role in injecting funds to ensure the modernization of the infrastructure and superstructure of the container terminal. This is similarly observed in competitive container terminals in the region, represented by the ports of Salalah in Oman and Jeddah Islamic Port, which have continued development and modernization operations of both infrastructure and superstructure since the signing of partnership contracts, which subsequently reflected on the volume of activity. The table below illustrates the difference in capabilities in terms of infrastructure and superstructure of Aden Container Terminal compared to the most important ports in the research area.

Table 1. A comparison between Aden container terminal and the major competitors Ports in the region.

<u>Port</u>	<u>Terminal</u>	<u>PPP Contribution</u>	<u>Capacity (Million Teu)</u>	<u>STS</u>	<u>Quay Length (meter)</u>	<u>Terminal area (ha)</u>	<u>Draught (meter)</u>	<u>RTG</u>	<u>Reefers</u>
<b>Port of Salalah, Oman</b>	Salalah Container Terminal	APM Terminals	5	21	2400	87	18		1500
<b>Jeddah Islamic Port JIP, Saudi Arabia</b>	South container terminal	DP World	2.4	16	1500	150	15	44	
	North container terminal	RSGT	2.4	10	1700	80	15		
	Red Sea Gateway terminal	RSGT	2.8	14	1500	70	18		
<b>Port of Aden</b>	Aden container terminal	Currently Owned and Operated by Government	1	6	700	45	14	8	160

Source: Websites of the research seaports.



## **6-2 Demand Conditions:**

Demand conditions represent a cornerstone within Porter's Diamond Model, emphasizing the significance of local market demand for industry products. A surge in demand plays a pivotal role in shaping competitiveness. Porter contends that a thriving and sizable local market incentivizes producers to bolster their technological prowess and operational efficiency, thus fostering a competitive advantage at a national level. Conversely, smaller local markets characterized by sluggish economic growth rates prompt companies to seek export avenues (Sunde, 2017).

When scrutinizing the demand aspect in the context of Aden Container Terminal, several key observations emerge:

1. Since 2016, the demand for services provided by Aden Container Terminal has witnessed a notable uptick, coinciding with the civil unrest and Houthi rebels' control over the Hodeidah port. This circumstance bolstered Aden's status as the preferred choice for various stakeholders, including traders and relief organizations, seeking reliable container ship services.
2. Nevertheless, the persistent security and political turmoil within areas under the legitimate government's jurisdiction, coupled with road closures and escalated Customs duties imposed by Houthi rebels, have posed significant challenges. Consequently, many suppliers have opted for alternative shipping routes through neighboring countries, circumventing Aden altogether.
3. The reopening of Hodeidah port in early 2023 had a notable impact on Aden's container operations. Despite its rudimentary facilities, Hodeidah managed to divert a substantial portion of imported goods to Yemeni markets. However, the political agreement facilitating Hodeidah's seaport reopening failed to ensure the restoration of land routes connecting Aden to major population centers.
4. The increasing handling rate of local market shipments plays a pivotal role in the container terminal's growth, enticing shipping lines to engage in transshipment activities. However, Aden confronts obstacles such as war risk insurance mandates imposed by shipping companies, prompting the utilization of feeder ships over motherships, thereby affecting its operational dynamics.
5. Collaboration with the private sector holds promise in bolstering demand conditions by establishing direct connections between Aden container terminal and key transit ports. By enabling the direct transfer of cargo from loading ports to Aden, this partnership shortens maritime transit times, consequently reducing transportation costs. Such an advantage would position the port of Aden favorably against competing ports in neighboring countries. The resultant reduction in maritime transportation expenses would significantly enhance the port's appeal, attracting a larger share of local market imports.

## **6-3 Firm Strategy, Structure and Rivalry:**

Competition emerges as the primary driver motivating companies within a nation to pursue a competitive edge. According to Porter, local competition prompts firms to undertake initiatives such as cost minimization, quality enhancement, and innovation. Subsequently, these firms find

themselves thrust into global competition, where a nation's international competitiveness shapes the global advantage for its enterprises. The strategies and organizational structures adopted by companies wield significant influence in bolstering their competitive prowess.

The dynamic interplay between organizational structure and strategy holds a pivotal role in determining competitiveness, thereby shaping a company's overall competitive capability. Consequently, the strategies and organizational frameworks employed in managing a company or industry directly impact its performance and competitive prowess. Thus, achieving local competitiveness necessitates additional impetus for companies to transition from local to international competition. (Tasevska, 2006)

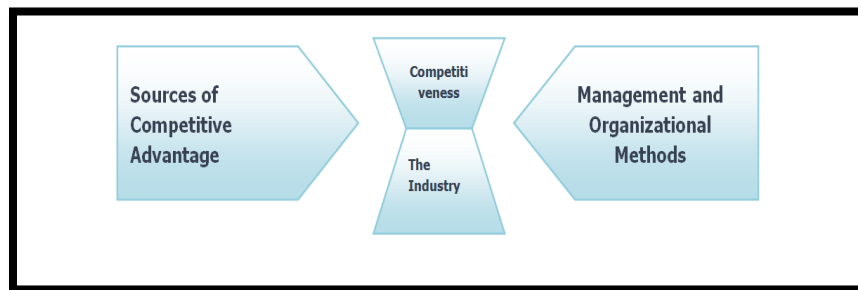


Figure (3) Industry Competitive Factors

Source: (Emzarbah, 2023)

By analyzing this factor's impact on the performance of the Aden Container Terminal, and possibility for applying the partnership with the private sectors, we can conclude the following:

1. While Aden Container Terminal benefits from an organizational structure providing some autonomy from typical public sector constraints and bureaucracy, it remains influenced by the surrounding community, impacting both performance and day-to-day operations.
2. Despite its significance within the Port of Aden, Aden Container Terminal lacks a comprehensive long-term strategic vision aimed at enhancing its competitiveness over the next twenty-five years. Currently, the terminal operates without a strategic framework guiding present operations towards future vision objectives and medium to long-term strategic plans.
3. Managed by various companies over the past two decades, Aden Container Terminal has undergone diverse management approaches, each shaped by the respective company's vision for the terminal. The table below outlines the successive management periods of Aden Container Terminal:

Table 2. Consecutive Management Periods of Aden Container Terminal

Operator	Period	Years
Singapore Port Authority - PSA	1999 - 2003	4
Overseas Port Management - OPM	2003 - 2007	4
Dubai Ports World - DP World	2008 - 2012	4
Aden Ports Development Company	2012 - 2022	10

Source: Commercial Department - Aden Container Terminal, Port of Aden

4.The table above highlights the brief tenure periods during which successive companies managed and operated Aden Container Terminal. These short intervals have disrupted the operational and developmental plans of each company, as they brought different operational and developmental visions to the table.

5.Since its establishment in 1999, Aden Container Terminal has not experienced significant investments aimed at fortifying its competitive position. This dearth of strategic investments has impeded the terminal's development, despite its advantageous location and the commencement of operations. The following table presents container terminals in the region according to their inauguration dates:

Table (2): Container terminal operation commencement date.

<b>Port</b>	<b>Terminal</b>	<b>Start Date</b>
Port of Aden	Aden Container Terminal	1999
Port of Salalah	Port of Salalah	1998
Port of Sohar	Oman International Container Terminal (OICT)	2007
Doraleh Port	Doraleh C T	2009
Jeddah Islamic Port	Red Sea Gate Way	2009
	North C T	2000
	South C T	1999
King Abdullah Port	King Abdulla Terminal	2013
Aqaba Port	Aqaba Container Terminal	2004
Port of Sudan	South Container Terminal	2011
Sokhna Port	Sokhna Container Terminal	2002

Source: Author from the websites of the regional container terminals

6.The absence of long-term strategic plans, coupled with an unstable security and political environment, has undermined the formulation and implementation of comprehensive development strategies for Aden Container Terminal. Furthermore, the insufficient real investments aimed at reinforcing the terminal's competitive position have impeded its ability to enhance competitiveness and redefine its position within the competitive landscape of regional ports. This is particularly concerning given the terminal's geographical and strategic significance within one of the most crucial maritime navigation corridors.

**6.4 Related and Supporting Industries:**

The presence of related and supporting industries alongside core industries plays a crucial role in reducing production costs. These industries create opportunities for both backward and forward linkages, thereby adding value to the enterprise's value chain. Through interconnections between

industries and various market sectors, cost efficiencies are achieved through shared production facilities, technical expertise, or distribution channels (Porter, 1990).

Moreover, the proximity of related and supporting industries enables a swift response to market fluctuations and changes, facilitating quicker and easier innovations and adaptability (Singh et al., 2009). Consequently, the existence of supporting and related industries encourages collaboration, establishing a collective strength capable of confronting market challenges and fluctuations. This collaboration ensures the enhancement of local competitiveness and sustainability.

In the context of the private sector's role in Aden Container Terminal business, the following observations are noted:

1. Aden Container Terminal primarily focuses on facilitating the trade of local market imports, with exports comprising a mere 8% of its total activity (APDC, 2024). This imbalance is largely attributed to the lack of industries in the port's hinterland capable of supporting export activities, resulting in heightened transportation costs. Moreover, the country's heavy reliance on imports further exacerbates this disparity, as it lacks significant local market export goods.
2. The terminal's export activities are predominantly confined to scrap iron and plastic, destined for Southeast Asian countries for recycling and manufacturing purposes. Following the summer war in 2015, the trade in scrap exports witnessed growth due to the closure of numerous local iron factories, prompting private companies to utilize scrap materials for manufacturing.
3. Aden Container Terminal held a distinctive position in servicing containerized imports for the local market, particularly during the Hodeidah port's closure from 2015 to 2022. However, with the reopening of the Hodeidah port, a considerable portion of import activities shifted to Hodeidah due to obstacles imposed by the Houthi group, thereby impacting the competition between the two maritime ports.
4. The container terminal grapples with a deficiency in essential services such as container maintenance, cleaning, and ship and container repair workshops. These services were previously available in limited capacity due to the country's unstable security and political situation, hindering their sustained provision. Challenges in forming partnerships with the private sector persist, particularly amidst the enduring security and political instability prevailing since 2011.
5. Aden Container Terminal's involvement in re-export activities, once prominent between 1999 and 2002, has diminished significantly. During this period, containers were opened, repackaged, or reloaded, benefiting from the regulations and laws of the free zone. However, the commencement of these activities amidst security instability ultimately led to their termination.
6. The unique operational framework of Aden Container Terminal poses inherent risks, operating independently without the support of related industries to enhance its activities. Risks associated with civil war and political instability persist, potentially dissuading importers and prompting them to seek alternative shipping options to target markets more efficiently and with minimal losses.

## 6.5 Government:

Regarding the Aden Container Terminal, the governmental role has not significantly contributed to its competitiveness by fostering collaborative opportunities with specialized private sector entities. This could be addressed by establishing effective mechanisms, legislation, and incentivizing measures to encourage partnerships with the private sector. Such collaborations would be instrumental in enhancing the competitiveness of the port of Aden and the Container Terminal. Consequently, the following points will analyze the governmental position and its role in stimulating the private sector to enhance the competitive capabilities of the Aden Container Terminal:

1. Successive Yemeni governments have failed to enact legislation and regulatory procedures governing collaboration with the private sector, particularly concerning strategic projects like the port of Aden. Additionally, there has been a lack of review regarding previous failures in partnerships related to the management of the Aden Container Terminal since its establishment in 1999.
2. The Yemeni government has not embraced private capital nor encouraged export and re-export activities. Instead, a prolonged dispute between the port of Aden and the Free Zones Authority has persisted without resolution. Furthermore, the absence of a unified strategic plan for Aden city has led to the allocation of significant portions of adjacent areas to residential projects that do not align with the port's activities and re-export endeavors.
3. Measures to integrate the port of Aden with the local markets have not been implemented, nor have restrictions within the framework of Aden city, formerly declared as a completely free zone, been lifted. Unlike other ports such as the Islamic Port of Jeddah and the Doraleh port in Djibouti, the port of Aden lacks dedicated main roads for goods transportation, hindering supply chains and market linkage.
4. Yemeni governments have not prioritized container terminal projects or ports within their strategic plans or state budgets. These projects, if properly utilized, could significantly contribute to supporting the country's economy and providing direct and indirect employment opportunities.
5. Specific legislation for port activities or private sector investments in the maritime transport sector has not been introduced by Yemeni governments, despite container shipping representing the future of maritime transport. The absence of legislation tailored to the container terminal limits its operations, with its only benefit stemming from the Free Zone Law due to its geographical location within Free Zone areas.
6. Successive governments have also failed to study the reasons for the failure of partnerships with the private sector and to derive insights that would protect the interests of the private sector amidst satisfactory restrictions for contracting parties, ensuring partnerships based on mutual benefits and guaranteeing the development and growth of Seaports as a backbone for the country's external trade.

## 6.6 Chance:

The role of chance has wielded a significant impact on Aden Container Terminal, notably exemplified by the outbreak of the civil war in Yemen triggered by the Houthi rebellion in 2015. This conflict led to the closure of the Hodeidah Port, particularly as it fell under the control of Houthi rebels. As a result, all shipments were redirected to enter the Yemeni local market exclusively through Aden Container Terminal. This sudden shift resulted in a notable surge in container volumes between the latter part of 2015 and 2016, which continued thereafter.

1. The sudden surge in container numbers at Aden Container Terminal from 2016 to 2022, reaching unprecedented levels since the outbreak of war, posed challenges to terminal management's expectations for container handling and the anticipated increase in the terminal's budget and future plans.
2. Despite the increase in container numbers, the surge fell short of expectations, positioning Aden Container Terminal uniquely as the sole container terminal in Yemen capable of servicing container ships. This discrepancy is attributed to various factors, including challenges in the security situation, road safety concerns, and the efficient flow of goods to local markets.
3. Security instability in the city of Aden and its environs hindered the optimal utilization of the opportunity afforded to Aden Container Terminal to serve as a central hub for all imports and exports in the local market. Nonetheless, despite challenges posed by local competitors with land ports playing a prominent role in meeting local market demands, the container terminal achieved its highest handling rates since its establishment in 1999. This was attributed to opportunities arising during the war, with Aden Container Terminal standing out as Houthi rebels controlled the Hodeidah Port, utilizing it as a base for militia operations to disrupt stability and security.
4. The reopening of the Hodeidah Port to commercial ships has been the primary reason for the decline in container arrival rates through Aden Container Terminal, as outlined in the 2023 statistics. This decline is attributed to measures imposed by the Houthi group, including additional customs duties on imports to the local market through the Port of Aden, coupled with increased land transport costs competing with sea freight. However, the opportunity remains open, particularly given developments in the Red Sea region and Houthi threats, which may increase the use of the Port of Aden compared to the currently unsafe Hodeidah Port.
5. The classification of the Houthi group as a terrorist organization by the US administration presents an additional opportunity to circumvent dealings with seaports under Houthi control, thereby enhancing job opportunities at the Port of Aden and Aden Airport as reliable alternatives. This is particularly significant as they operate under the authority of the internationally recognized legitimate government.
6. The current opportunity for the port of Aden to serve as a primary and secure hub for container ships may also present another opportunity to attract private sector involvement in the management and development of the container terminal, and to implement plans for deepening and expanding the infrastructure. However, this also requires legislation to protect the

partnership model, which necessitates political stability, security, and a sound political system structure in Yemen, ending division, and halting the war.

## **7- Conclusion:**

The Porter Diamond Model was used in this research paper, which is one of the most important models for analyzing the competitiveness of an enterprise or sector and its impact on the overall competitiveness of a country. The study highlights the possibility of involving the global private sector to enhance the competitiveness of the Aden Container Terminal, considering the successful experiences of partnerships with the private sector in neighboring and global ports.

Through objective analysis using the Porter Model, it was found that the Aden Container Terminal has a strategically important location, which enhanced its status and competitiveness when operations began in 1990 under the management of Singapore's PSA. However, this advantage was short-lived due to challenges faced by the country starting in 2002, including terrorist threats that led to the cancellation of partnerships and fines imposed on Yemen for failing to provide protection. Additionally, internal conflicts, culminating in the Summer War of 2015, continue to this day. Consequently, the production factors of the Aden Container Terminal were insufficient to overcome security challenges, internal conflicts, and political instability, which diminished its competitiveness, placing it at the bottom of the regional competitors' list. Currently, a partnership with the private sector is risky due to the port's current situation amid political and security instability.

Similarly, the demand for the Aden Container Terminal's services domestically and to meet local market needs was strong from 2015 to 2022, boosting its local standing and container handling rates, as it was the only operational container terminal. However, the situation changed with the reopening of the Hodeidah port for commercial traffic, diverting more than 50% of incoming goods to Hodeidah due to its proximity to densely populated markets and to avoid punitive measures imposed by the Houthi group on goods entering through Aden. Thus, the Aden Container Terminal is merely a local competitor seeking to attract a share of the local market imports, making it unattractive for private sector investment due to its inability to attract transit trade, given the country's security situation and high marine insurance and war risk costs.

The terminal's strategy, structure, and competitiveness have also been significantly impacted by the country's successive events. The lack of political and security stability has hindered the development of clear strategic plans for the growth and development of the Aden Container Terminal. Since 2002, various political forces with different visions and interests have dominated the political scene, impacting the strategies and policies of the Port of Aden, an integral part of the country's overall political and economic framework. The absence of supporting activities and industries and the closure of many service activities in Aden and the free zone have severely impacted export and re-export activities, raising transportation costs to the Port of Aden, which are already higher compared to neighboring ports due to the unstable security situation.

The government has never supported the port's service activities or realized the economic benefits of optimizing the use of the Port of Aden. Additionally, the state has not established specific laws and regulations for the Port of Aden to organize its operations independently and free it from bureaucratic government procedures, possibly due to the long-standing conflicts in Yemen that preoccupied decision-makers with internal struggles instead of focusing on utilizing resources efficiently to benefit the national economy and ensure resource sustainability. Moreover, there are no laws or regulations governing partnerships with the private sector, specifying the responsibilities and duties of partners, particularly in national and strategic projects like the port.

In conclusion, opportunities still exist for the Aden Container Terminal to play a better role if government support is provided to position Aden as an alternative option for shipping companies instead of the Red Sea ports, considering the security challenges posed by the Houthi group targeting commercial ships passing through the Bab al-Mandab Strait, which has led some ships to avoid the Red Sea and reroute around the Cape of Good Hope. However, a partnership with the private sector at this time is risky and may not aim to truly enhance the Port of Aden's status. Instead, such partnerships, if they occur, might be political deals without actual feasibility studies, especially given the current situation in the country suffering from the war since 2015 and its repercussions on increasing overland transport costs to Yemeni ports, including Aden, and high marine insurance premiums for ships visiting Yemeni ports.

## 8- Reference:

- Abood, S. N., 2016. Legal regulation for the partnership between public and private sectors. Tikrit University Journal of Laws, 1(1), p. 53.
- Akopova, E., Przhedetskaya, N., Przhedetsky, Y. & Borzenko, K., 2020. Marketing of healthcare organizations: technologies of public-private partnership. s.l.:Information Age Publishing.
- Alam, M. & Faisal, F., 2017. Public-private partnership PPP projection, Bangladesh: current status and challenges. Journal of system and management sciences, Volume 4, p. 18.
- 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.
- CELIK, B. & UMAR, A., 2020. The Impact of Public-Private Partnership on the Performance of Nigerian Seaports: A Case study of APAPA Port Complex, Lagos, Lagos: Journal of Global Economics and Business.
- Chechurina, M. N. & Grin, A. A., 2020. Public private partnership in management of ports of the world. Russia, IOP Conference Series: Earth and Environmental Science.
- Cherkos, F., Jha, K. & Singh, A., 2020. Framework to select public-private partnership modalities, New Delhi: Journal of Legal Affairs and Dispute Resolution in Engineering and Construction.
- Cong, L.-z.et al., 2020. The role of ports in the economic development of port cities: Panel evidence from China, Liaoning , China: Transport Policy.
- DPWORLD, 2023. DP World and Maersk enter long-term partnership at Jebel Ali. [Online] Available at: <https://www.dpworld.com/news/releases/dp-world-and-maersk-enter-long-term->



- partnership-at-jebel-ali/  
[Accessed 21 6 2023].
- Dron, F., Gaebler, S. & Roesel, F., 2021. Ineffective fiscal rules? The effect of public sector accounting standards on budgets, efficiency, and accountability, Munich: Inf Institute.
  - Emzarbah, M. A., 2023. The impact of applying smart port requirements on the competitiveness of Aden container terminal, Alexandria : Arab Academy for Science and Techonlogy and Maritime Transport .
  - Estruch, L. P., 2021. Public-Private Partnership in transport: a critical assessment of the Caribbean, cayman islands, Caribbean: Emerald Insight.
  - Gantman, S. & Fedorowicz, J., 2020. Determinants and Success Factors of IT Outsourcing in the Public Determinants and Success Factors of IT Outsourcing in the Public Sector Sector, Bentley, UK: Communications of the Association for Information Systems.
  - Garcia-Alonso, , L., Monios, J. & Vallejo-Pinto, J., 2019. Port competition through hinterland accessibility: the case of Spain, Madreed, Spain: Maritime Economics & Logistics.
  - Garrido, J. et al., 2020. Predicting the Future Capacity and Dimensions of Container Ships, s.l.: Garrido, J., Saurí, S., Marrero, Á., Gül, Ü., & Rúa, C. (2020). Predicting the Future CapacTransportation Research Record.
  - Haralambides, H. E., 2019. Gigantism in container shipping, ports and global logistic: a time-lapse into the future, Rotterdam: Maritime Economics and Logistics.
  - Jones, L. & Bloomfield, M. J., 2020. PPPs in China: Does the Growth in Chinese PPPs Signal a Liberalising Economy?, China: New Political Economy.
  - Kang, S., Mulaphong, D., Hwang, E. & Chang, C.-k., 2018. Public-private partnerships in developing countries: Factors for successful adoption and implementation, Georgia: International Journal of Public Sector Management.
  - Lopes, Z. S., Kurniawan, F. & Tistogodo, J., 2021. Case Study of Public-Private Partnership on Infrastructure Projects of Tibar Bay Port in Timor-Leste, Indonesia: International Journal of Engineering Science & Information Technonlogy.
  - Malek, M. S. & Gundaliya, P., 2020. Value for money factors in Indian public-private partnership road projects: An exploratory approtch. Journal of Project Management, Issue 6, p. 9.
  - Qardash, A., 2021. Master dissertation - Analyzing the Competitive Position of Aden Container, Alexandria - Egypt : Arab Academy for Science, Technology and Maritime Transport.
  - SalalahPort, 2023. Port of Salalah - Our History. [Online]  
Available at: <https://salalahport.com.om/port-story>
  - Singh, R., Garg, S. & Deshmukh, S., 2009. The Competitiveness of SMEs in a globalized economy: Observation from China and India.. Management Research Review, Volume 33(1), pp. 54-65.
  - Smith, G. & Hensher, D. A., 2020. Towards a framework for Mobility-as-a-Service policies, Sweden: Transport Policy.
  - Sunde, T., 2017. Foreign direct investment, exports and economic growth: ADRL and casualty analysis for South Africa, Namibia: International Business and Finance.
  - Tamošaitien`e, J., Sarvari, H., Chan, D. W. M. & Cristofaro, M., 2020. Assessing the Barriers and Risks to Private Sector Participation in Infrastructure Construction Projects in Developing Countries of Middle East, Iran: Sustainability.

- Tasevska, G., 2006. An Economic Analysis of the Macedonian Viticulture - A Competitive View of the Grape and Wine Sector, Business Admin. Thesis no. 445: Deptment of Economic .
- WorldBank, 2022. Public Privat Parnership. [Online]  
Available at:  
<https://www.worldbank.org/en/topic/publicprivatepartnerships#:~:text=When%20governments%20choose%20to%20use,efficient%20public%20services%20and%20infrastructure>.  
[Accessed 18 4 2023].
- WorldBank, 2022. Public-private Partnership reference guide. [Online]  
Available at: <https://ppp.worldbank.org/public-private-partnership/about-public-private-partnerships>  
[Accessed 12 4 2023].
- WorldBank, 2022. Waht Are PPPs?. [Online]  
Available at: [https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships#:~:text=Public%2Dprivate%20partnerships%20\(PPPs\)%20are%20a%20mechanism%20for%20government,expertise%20of%20the%20private%20sector](https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships#:~:text=Public%2Dprivate%20partnerships%20(PPPs)%20are%20a%20mechanism%20for%20government,expertise%20of%20the%20private%20sector).  
[Accessed 28 12 2022].
- Xie, Y., Zhao, Y., Chen, Y. & Allen, C., 2022. Green construction supply chain management: Integrating governmental intervention and public–private partnerships through ecological modernisation, London: Journal of Cleaner Production.
- Porter, M., 1990. The competitive advantage of nations, New York: Harvard Business Review.