



## **LOGISTICS CLUSTERS DEVELOPMENT IN OMAN**

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### **Abstract**

*Oman is working to set up logistics clusters all through the nation as portion of Oman Vision 2040 to broaden its economy and industry past the oil driven demonstrate. The major logistics clusters are in Muscat, Salalah, Sohar, Duqm, Ibri, and Nizwa. In any case, these locales face many teething issues which ought to be fathomed as the work out advances. Besides, Oman will be competing for speculation and ability with territorial powerhouses like joined together Middle Easterner Emirates and Saudi Arabia within the GCC as well as other developed countries. Therefore, the reason of this investigate is to contribute to the victory of Oman Vision 2040 and broadening within the logistics cluster, and development of basic thoughts to drive this arrangement forward. In this investigate, we have chosen to analyze the transport and logistics cluster because it presents Oman with an opportunity to use its qualities whereas assist differentiating its economy and building worldwide competitiveness. This study seeks to highlight the potentials of Sultanate of Oman economy and its national competitiveness; and further analyzes the importance of developing transport and logistics cluster in Oman. The findings of the study suggest that benefits of establishing logistics clusters in the country are motivating and it will help in improving supply chain security; the level of customs service will also improve and help in attracting internationally focused logistics activities. It is recommended that the establishment of logistics clusters would help*

*in expanding the ease of moving cargo between entities within the country and would also help in developing gateways (ports and airports) as locations of national strategic interest. Furthermore, it is also indicated that it will help in improving the use of existing transport assets and reduce congestions.*

*Keywords: Logistics, Clusters, Transportation, Development, Oman*

## **INTRODUCTION**

The strategic geographic location of Oman makes it ideal for becoming a transportation hub that can facilitate moving products and people by sea, land, and air modes of transport. As a result, transportation and logistics are recognized as one of five major areas in the Sultanate's efforts to diversify away from oil dependence in Oman Vision 2040. Transport infrastructure is vital for the success of industries, overall economic efficiency and is thus a major source of government support. The logistics sector is critical to expanding inward investment, non-oil exports, and the country's competitiveness in Oman's contemporary and ambitious economy. Oman has made significant investments in the sector in recently, with an updated airport terminal opening in Muscat in 2018 and new multi-lane motorways cutting across the nation. Omani firms and manufacturers can benefit from a well-oiled logistics sector by increasing efficiency, going greener, and increasing revenues. (Oxford Business Group 2021).

### **Research Objectives**

This research will cover the aspects of analyzing the country profile of Oman, their economic performance, the transportation, and logistics clusters in Oman and to provide recommendations that will upgrade their logistical vision of 2040.

1. To analyze the country profile and economic performance of Oman.
2. To Identify the transportation and logistics clusters in Oman
3. To Provide recommendations that can upgrade the logistics vision of 2040

## **LITERATURE REVIEW**

### **Country Profile Analysis by using diamond model**

#### ***Overview of the diamond model***

Porter (1990) proposed that nations can develop competitive advantages, regardless of their share of factor endowments. National competitive advantage is related to the ability of local firms to be creative and innovative in a competitive global economy. Porter (1990) developed the diamond model to analyze that consists of the factors that create national competitive

advantage. This model in the point of view of the industry is considered as a national pros theory that enables nations and industrial groups that accompany and possess certain factors and available resources to claim their competitive advantage. Besides, the model enables the government to understand how to act as catalysts to enhance the country's' economic position advantage nationally and abroad (Kharub and Sharma 2017).

### ***Components of the diamond model***

Porter's diamond model consists of four factors that are interconnected and resemble the determining factors of the national comparative economic advantages. These factors are; demand conditions, factor conditions, firm strategy, and rivalry, and related and supporting industries.

**Firm strategy, rivalry, and structure:** This factor opens the path for industries to increase their production, grow and develop, invest in modern technological innovations, skilled labor, etc., to increase their competitive advantage in the market. The main concentration is on the market power, the entry of new rivals and influence on the national market, and degree of competition (Fainshmidt et al. 2016).

**Related supporting industries:** It mainly focuses on the upstream and downstream industries and their power to exchange information and transparency in collaboration to increase resources and innovation to increase the competition level in the market and have strong branding to the industry. The biggest players in this factor are suppliers and customers, as they control and provide to the market creating profit and improving the economic sector of the country (Fainshmidt et al. 2016).

**Demand conditions:** This refers to the nature and size of the customer base demand of products in the market. This drives innovation and diversity to increase customer satisfaction and competition level. As a result, this will increase the market scale for the business and approaching a larger consumer base (Fainshmidt et al. 2016).

**Factor conditions:** According to Porter, this is the most fundamental and essential factor for the country to utilize and analyze as it highlights the competitive advantage factors and resources that are owned by the country and invested in to increase their competition level in the market. In addition, it aids in encouraging the government to aid in driving the nation's economic performance by enhancing businesses and companies on innovation and development of the elements in the factor conditions. Moreover, this goal can be achieved through increasing the competition between national companies by enforcing anti-trust laws (Fainshmidt et al. 2016).

### ***Analysis for the pros and cons of the model***

Many studies analyzed the pros and cons of the model, adding the fact that the model was introduced more than 20 years ago, and a lot of changes have occurred in global business world. Ifran et. Al. (2019) suggested that the diamond model encourages the key players in the country to innovate. The innovation can occur in new product development, new market approach strategy, production process, etc, which may lead to a competitive advantage as it will build new market opportunities or to focus on market segment and consumer base that have been ignored. This model will aid companies to sustain their competitive advantage by focusing on the four factors in the model and upgrading them constantly. As a result, the company will know the new rivalry in the market and what are their offerings to attract customers. Also, to connect with the related industries in a more sophisticated manner to collaborate and innovate products, services, etc. Besides, Knowing the demand conditions to satisfy the customer in the quickest time and with appreciated quality and analyzing the elements of factor condition to know the modern inputs to achieve a better economic vision and approach for the country (Kharub and Sharma 2017). On the other hand, Kharub and Sharma (2017) endorsed that the model was created to focus only on developed countries with stabilized economies and strong market penetration and not showing concern regarding the domestic markets. In addition, Porter does not agree with the idea that inbound FDI (Foreign Direct Investment) will aid in highlighting the importance of national market since they don't have the resources or capabilities to compete in the market and defend their own markets. The model doesn't segment the factors that affect both successful and unsuccessful firms in the country to accurately analyze their impact on the nation's economy. Besides, every industry in the country requires to have significant importance in the contribution of the country's success in the market. Irfan et. Al. (2019) outlined that the model does not adequately mention the roll on MNC's (Multinational Companies), which should be highlighted since these corporates have strong branding and market share and raise or decline in their sales will affect the country's economic position. Analyzing the MNC's competitive advantage and exchanging information will be essential to compete in the market and understand international markets' capabilities.

### ***Profile of the focal country***

Oman is on the southeastern tip of the Arabian Peninsula, bordering the Arabian Sea and the Gulf of Oman, and the Strait of Hormuz and the Persian Gulf at the Musandam Peninsula in the north. Oman is bordered on the land by Saudi Arabia, the United Arab Emirates, and Yemen, and on the sea by Iran and Pakistan (Nations online 2021). Oman has a long history in logistics, with a 4000-year-old sailing legacy. The remnants of the walled town of

Sumharam, a port city that dominated the booming marine commerce of frankincense from 100BC to 400AD, may be found in Salalah. Despite the current global economic downturn, Oman's government has been willing to invest in its transportation hubs and road infrastructure. The government's diversification drive - shifting away from single reliance on its thriving oil and gas business and seeking for new ways to enhance the country's GDP – has been a major driving force behind this. The country regards investment as a collaborative effort, encouraging investment while allowing mature commercial governance to give global firms a sense of security (Nations online 2021).

### **National economic performance**

Over the last 40 years, the country's economy has grown steadily, thanks to the government's encouragement of both private and foreign investment. With regional trade and consumer demand for imports growing, logistics companies are increasingly choosing Oman as their regional headquarters (Alshubiri and Hussien 2016). Despite the current global economic downturn, Oman's government has been willing to invest in its transportation hubs and road infrastructure, with the support of the country's visionary leader Sultan Qaboos Bin Saeed. The below graph in figure 1 shows the gross domestic product rate growth in Oman depending on the logistical growth and activities. As well as it shows a huge drop in the year 2020 during the COVID-19 global pandemic.

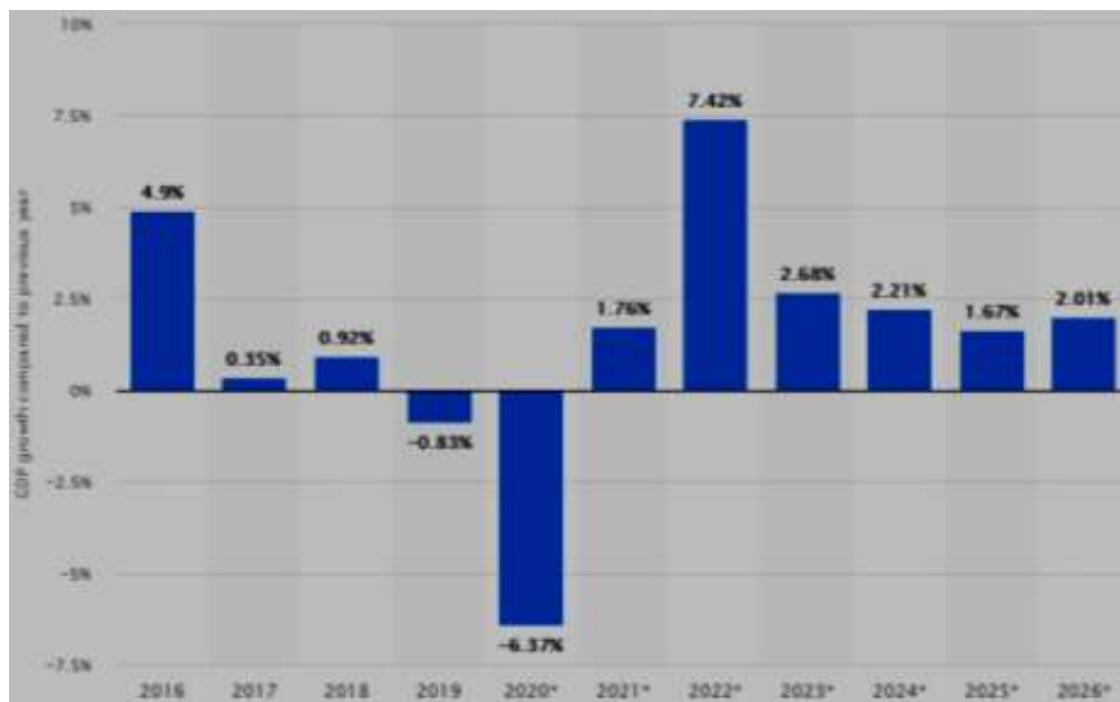


Figure 1: Oman's GDP (Gross Domestic Product) From the year 2016 till 2026 (Statista 2021).

***Oman's national economic performance and competitive advantage***

Oman's economy is driven mainly by the oil and gas activity like any other GCC country but after the huge drop in oil prices in 2015 this led to the drop in the country's gross domestic profit contraction of 14.1%. That has had a positive impact to the country to be encouraged to have an economic diversification base and aid in the government reformations. As a result, this enhances the establishment of the Tanfeedh program where it aims to guarantee that the government's diversification policy is effectively implemented by public and private sector players. The project sets out clear standards and KPI (Key Performance Indicators) for the government's goals, as well as providing monthly reporting on the restructuring effort's progress. The Tanfeedh program serves as a valuable insight for private sector investors as to where the government's primary emphasis will be in the next years. Tanfeedh has introduced four sub-sectors for innovation: petrochemicals, which includes the expansion of joint stock company OCTAL's polyethylene terephthalate plant and the manufacturing of an ammonium fertilizer facility; non-metals, such as cement production; and food, which includes dairy farms, date production, and the petrochemicals industry (Ba-Awain and Daud 2018). According to state officials, Oman's strategic position makes it a suitable global logistics hub. Between 2010 and 2015, the sultanate's logistics sector grew at an annual pace of slightly over 8%, and this is likely to accelerate with the execution of a slew of planned logistical projects. Rail lines to mining sites and the building of new roadways connecting the sultanate with Saudi Arabia are among the land-based projects. The Air Cargo Village project at Muscat International Airport, which would facilitate freight import, export, re-export, and warehousing, as well as an overhaul of Customs and cargo procedures, will improve air transport. Furthermore, new services in Oman's ports, the expansion of the Port of Salalah, and the construction of storage facilities in important locations such as Sohar and Salalah to promote re-export activities will increase the sultanate's marine capacity (Ba-Awain and Daud 2018). Large portion Oman's process of reform has indeed been developed with the goal of attracting more foreign direct investment (FDI). The establishment of free zones, such as the Sohar Port and Freezone, Salalah Free Zone, and Al Mazyunah Free Zone, which enable for 100 percent foreign possession and full resettlement of profit and capital, as well as a variety of tax benefits, has been a major focus of this endeavor over the last decade. More recently, Oman's lengthy desire to colonize the country's additional isolated areas has resulted in yet more FDI magnets. Duqm, a seaside city on the Arabian Gulf, is the most visible illustration of this trend. Located 500 kilometers from the capital, the city's growth plan revolves around a seaport

that will serve as the economic hub of the new metropolis, seeding a major special economic zone.

The substantial growth of Duqm may help to extend FDI inflow targets, which have stayed essentially stable in previous years. According to the most current statistics from the CBO, the oil and gas industry led the stock of FDI investments at the end of 2016, accounting for roughly 49.1 % of the total, followed by financial intermediation (17.7%) and manufacturing (13 %) (Ba-Awain and Daud 2018).

### Discussion of the four factors of the porter's diamond

Porter's diamond structure to illustrate the competitive advantage in Oman and to show the factors that impact the country's position in a globally competitive economic environment (see Figure 2).

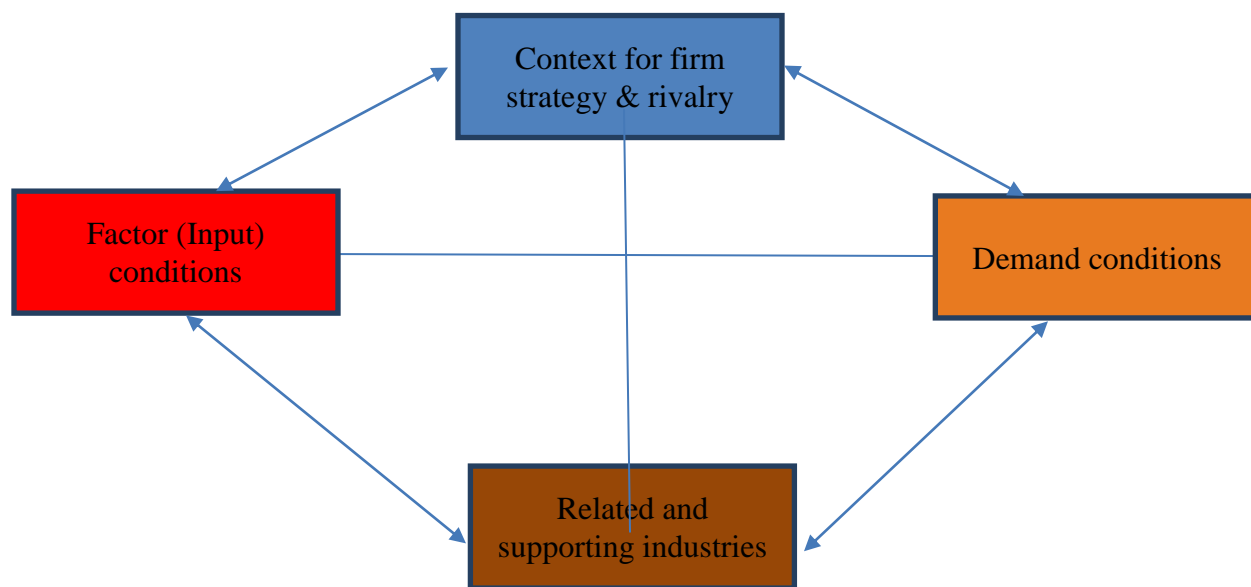


Figure 2: Oman's National Porter diamond

Looking into Oman's national competitiveness ranking where it has been positioned as the 53rd position out of 140 according to the 2019 edition of the World Economic Forum's Global Competitiveness Report. Moreover, in the year 2020, the position has been changed to ranked as 47 out of 140. According to official World Bank data, Oman's Gross Domestic Product (GDP) was valued at 76.33 billion dollars in 2019. Oman's GDP accounts for 0.07 percent of the global economy (Mubeen et al. 2017).



### ***The context for firm strategy and rivalry***

The level of competition between sponsored companies in Oman is high especially that they compete using price differences and quality. Besides, the entry of new rivalry creates a new addition to the market and diversification. On the other hand, there is a low chance to compete internationally and succeed in the market due to a lack of liquidity and experience to understand the market strategy (Mubeen et al. 2017).

### ***Demand Conditions***

The demand conditions are mainly focused to satisfy the inquires of low-classed and middle-class citizens. Also, some demand conditions involve high-end services and products to enhance improvement in tourism attractions, telecommunication infrastructure, and the logistical city to attract foreign direct investments.

### ***Factor (Input) Conditions***

Oman has a prime advantage regarding its strategic location as it is geographically close to Europe, Asia, and Africa. Besides, Oman is considered a safe trading hub that secured the trading lanes in the Indian Ocean and the Persian Gulf. Also, the hiring of low-cost labor to save money for more development on projects and moving towards a better infrastructure to create flexibility in operations. On the other hand, having low-cost labor with no experience could lead to low productivity and time consumption to learn the processes. Besides, the factor inputs require huge capital to be installed such as an experienced workforce to train the labor, the infrastructure of the companies and industries, and the development of the technology utilized (Mubeen et al. 2017).

### ***Related and Supporting Industries***

The key clusters under this force are the logistics sector, tourism, telecommunication companies, manufacturing, and financial services. Those key clusters are the reason to enhance the better economic performance of the country attract foreign investments to develop towards the future of achieving the vision 2040 and enhance for a better GDP position of the country. Each of those sectors contributes towards a certain percentage of increasing the GDP and now the highest contribution is from the logistics sectors which is the main area focus of the country. The issue right now is not having the resources and capabilities that could aid and improve those supporting industries due to a lack of finance and support from the government (Mubeen et al. 2017).



## **Transportation and logistics clusters**

### ***Overview of Transportation and logistics clusters***

Porter (1998) defined clusters as a geographic assembly of interconnected businesses, suppliers, service providers, market players and related organizations that are functioning in a specific domain. Some of these organizations are competing and cooperating at the same time. According to Porter (1998), the collaboration can result in benefits to all the cluster members and the hosting countries as well. Logistics cluster is a special type of cluster. Elsener (2010) indicated that logistics cluster is a group of production and service organizations which their common feature is that their employees perform logistics duties. According to Wolfram Elsner (2010), a logistics cluster is a group of manufacturing or service companies whose common feature is that their employees perform logistics duties. Most of these businesses are clustered around some sort of logistical facility such as airports, seaports and rail terminals. On the other hand, Bulis and Skapars (2013) argued there are two different types of logistics clusters: maritime clusters and port clusters. Maritime clusters are based on shipping related services, while the port clusters are merely related with port calls of ships. Rivera et al. (2016) identified logistics cluster as the agglomeration of geographical concentration of logistics industries and corporate that exchange information and services such as, warehousing, transportation, freight forwarding, and 3PLs. The logistics clusters accommodate maintenance service companies, software providers, operational firms, specialized law firms, international financial corporates, manufacturing organizations, etc. The logistics clusters bring numerous benefits to all stakeholders. Logistics clusters can increase productivity. This is a resulting from the diversity of shared resources in the cluster, which leads to reducing waste and saving costs. They increase the economic density and scope by providing diversity in services and operations to satisfy the customer demands with the lowest cost possible (Rivera et al. 2016). Logistics clusters drive economic growth and sustainability by efficiently using the pool of suppliers, skilled labor and training facilities as well as providing multiple transportation, warehousing and distribution services, and creating new job opportunities (Rivera et al. 2016; Karpenko et al. 2018). Availability of specialized pool of workers and strong base of suppliers can result in increasing competition level, improving operational and tactical performance, allowing flexibility, driving creativity and innovation, and facilitating the development of new ventures or expansions of existing ones (Karpenko et al. 2018). Clustered organizations are more allowed to exchange information and operations smoothly and quickly, create long-term relationships with service providers and suppliers. This can mitigate the effect if demand fluctuations and

more likely to create new job opportunities in the field of warehousing, fleet management and transportation. Besides, developed trust among cluster members leads to lower transaction costs and better cash flow management between corporates that are trading partners and horizontally collaborating as well as strong collaboration between firms shows strong reputation and brand image in the market. (Rivera et al. 2016) Logistics clusters occur in designated cities or regions to utilize the strategic geographic location. This will enable the clusters to deploy multi-mode transportation that can handle demand quickly and efficiently by consolidating a wide variety of transportation companies within the cluster. As a result, reducing costs and saving time. (Karpenko et al. 2018). Additionally, the more logistics corporates join the cluster, the better services and higher frequency of demands will occur in multiple locations. (Karpenko et al. 2018).

### ***Outline of Oman's logistics cluster***

Oman is a key trans-shipment point on the East-West commerce route due to its prime location in the Arabian Gulf. Oman profits from regional trade policy, customs laws, and the merging of national and regional transportation routes as a part of the GCC. Besides, Taking advantage of free trade agreements with the United States and Singapore, as well as the GCC economic integration and the GAFTA (General Arab Free Trade Agreement). In Sohar, Salalah, Duqm, and Al Mazunah, infrastructure and technology are being invested to upgrade ports and free zones. Oman Global Logistics Group SAOC was established as a government to hold corporation to coordinate and utilize government investments in the Sultanate's ports, free zones, logistics centers, and rail, maritime, and land transport firms to fulfill critical development goals (Taderera et al. 2018). The logistics potential for Oman's ports is waiting to be seized. On a standard journey route from Singapore to Suez, a weekly call at Salalah for an ultra-large bulk carrier would cost US\$4.47 million, US\$8.69 million at Duqm, and US\$17.09 million at Sohar, according to research commissioned by the Ministry of Transport and Communications. Jebel Ali in Dubai, on the other hand, is expected to cost US\$24.62 million. Chemical-related exports account for 56.7% of Oman-EU freight development, with organic substances and fertilizer accounting for most of the increase. In 2015, sea freight between the EU and Oman increased by 59.4% (Taderera et al. 2018).

The figure 3 illustrates the current and future major logistics clusters in Oman. Besides, showing their location and purpose of each cluster.

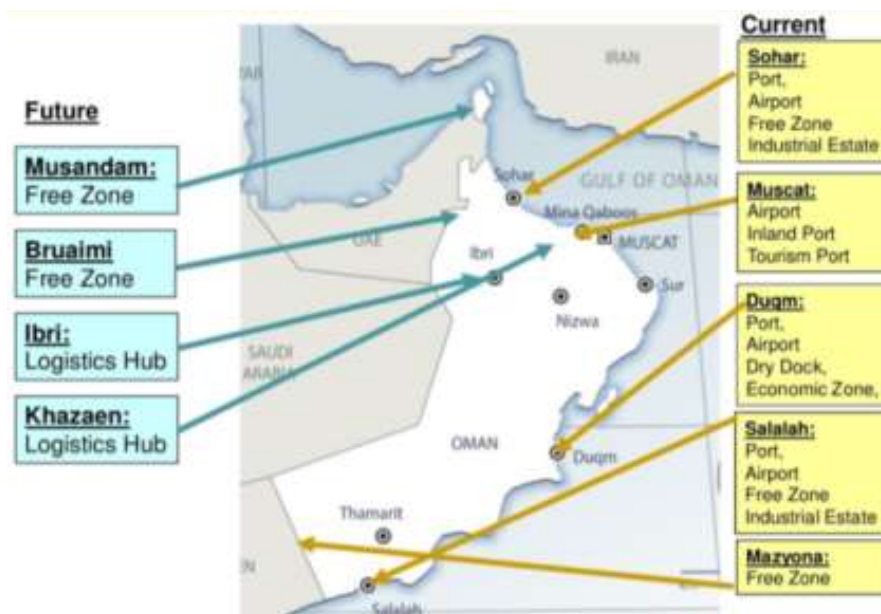


Figure 3: Major logistics clusters in Oman (SlideShare 2021).

### ***Major logistics clusters of ports in Oman***

Sohar, Duqm, and Salalah ports are the top operating ports in Oman especially in trading operations, import and export activities, and are attraction to foreign direct investments due to their free and economic zones. Modern transport systems, telecommunication networks, and other essential utility services serve the Free Zones. Investors want to invest lucrative investment prospects due to their strategic position and incentive structure (Taderera et al. 2018).

#### ***Sohar Port***

Sohar Port welcomed its first vessel in 2004 and now receives over 2,500 boats per year, handling more than one million tons of cargo weekly. Sohar is one of the fastest in the world expanding port and free zone expansions, with investments reaching \$25 billion. Around 2001, a 50:50 joint venture with the Port of Rotterdam was formed and by the year 2010, the nearby Free zone was added. Metals, logistics, and petrochemicals are the three primary industry clusters that the port was built around. A fourth, food cluster was just added. The building of a US\$170 million province Food Zone, which will include the region's first specialized Agro terminal, rice, flour, and sugar mills, along with support for downstream food manufacturing and processing companies, is moving along quickly. Additionally, Oman's goals are becoming a leading player in the plastics industry, which are supported by the recent US\$6 billion investment in the Liwa Plastics Project at SOHAR Port. Orpic will be able to produce 1.4 million

tons of polyethylene and polypropylene by 2020, and the proposal will establish one of the nation's finest refinery and petrochemical plant combinations, opening exciting different downstream business prospects in the Port and Free zone (Al Mamery and Khalid 2019). Below figure 4 is shows the map of Sohar Port including its free economic zone.

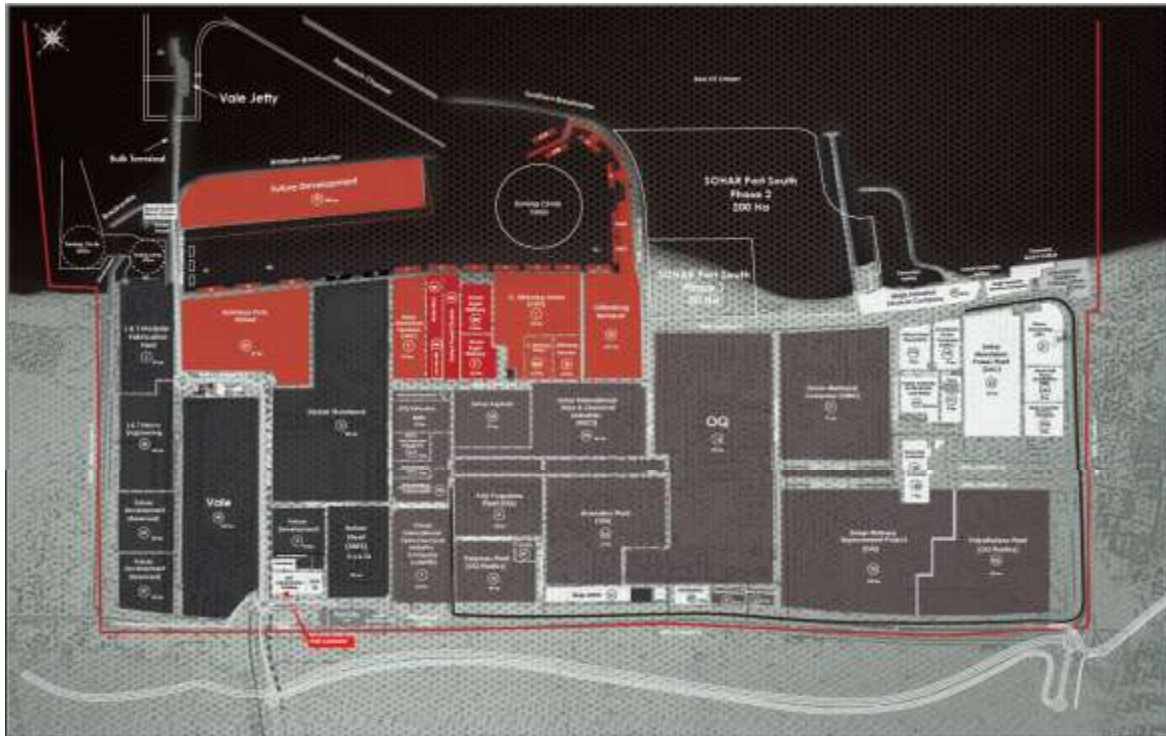


Figure 4: Sohar Port Map (SOHAR 2021)

### *Salalah Port*

The Port of Salalah, which is part of the APM Terminals Global Terminal Network and is strategically placed to serve the lucrative East-West shipping routes, handled 1.584 million TEU during the first half of 2016. That indicates a 29% increase above the quantity managed around the same period of the year before. Moreover, with a tonnage of 2.56 million TEUs in 2015, the Port of Salalah located on the Arabian Sea is one of the major container terminals in the Middle East. In 2015, the company's general cargo terminal (GCT) carried 12.543 million tons, up from 10.314 million tons the previous year. The Port of Salalah's bulk mineral capacity might be enhanced to 50-60 million tons per year with the introduction of rail connectivity and new rail-to-port material handling logistics technology. The freight liners that make port calls at Salalah port connects all of Europe's main ports in the Mediterranean, the East Coast of the United States, East Africa, the Indian Subcontinent, and the Middle East. Also, it connects the Arabian Gulf and Red Sea (Ziadah 2018). Figure 5 below shows a detailed map of Salalah Port.

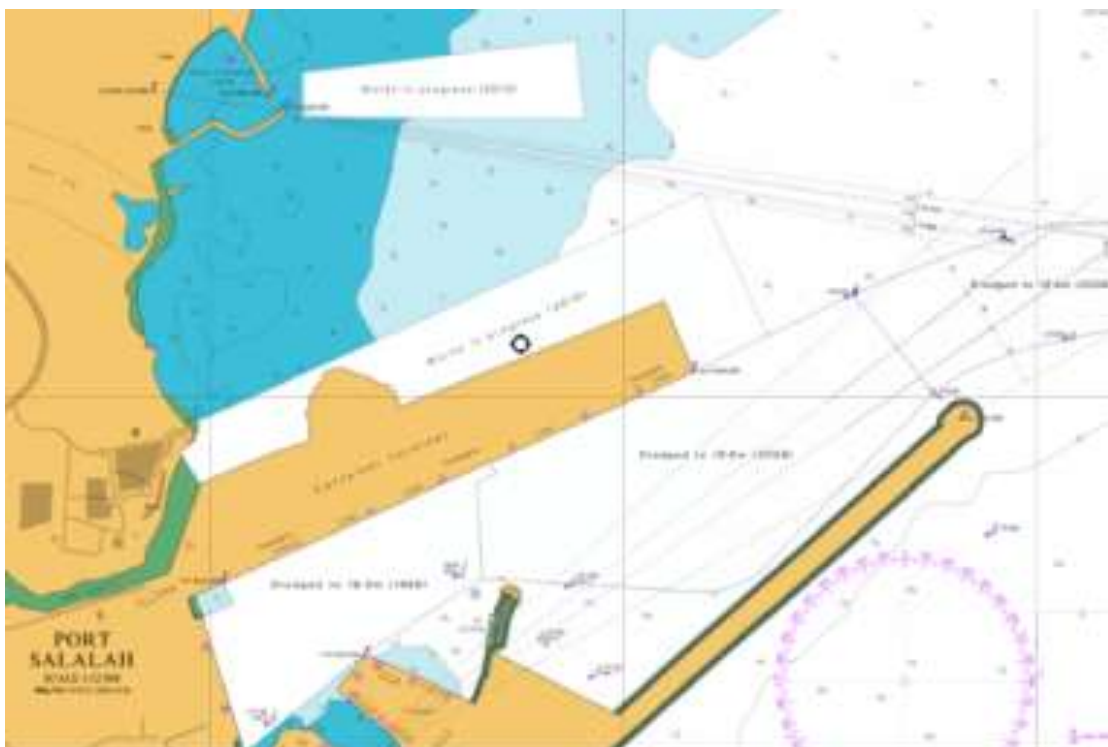


Figure 5: Port of Salalah

### *Duqm Port*

Duqm port is indeed one of the GCC's most potential major ports from a geographical and geopolitical standpoint, with views of the Arabian Sea and Indian Ocean and close to several of the world's most important shipping lanes. The Port of Duqm Company SAOC, which is a 50:50 joint venture between Consortium Antwerp Port and the Sultanate of Oman. It was established in 2010 to create the new marine gateway through a 28-year concession, which officially began in July 2015. Moreover, The Port of Duqm is prepared to activate state-of-the-art container handling terminals with access to 1,600 meters of quay and a handling capacity of 3.5 million TEU per year in its next development stage. One of Duqm Port's key milestone is to serve as a regional consolidation and distribution hub to provide trading opportunities and supply markets in East Africa, Indian sub-continent, and the Middle East. Furthermore, Duqm's location is relatively close to the Asia-Europe trade corridor. Dubai is 2,092 kilometers from the Suez-Singapore route, but Salalah and Duqm are only 209 and 644 kilometers away, respectively. Additionally, Duqm is substantially closer to the GCC, allowing it to target specific as a gateway port and trans-shipment hub (Ibrahim et al. 2019). figure 6 shows the infrastructure of Duqm Port.





consumers buy something online at least once every month, and the mean demand for domestic e-commerce purchases is US\$102, compared to US\$139 for international transactions (Ithraa 2021). E-commerce is anticipated to rise from US\$95 billion in 2013 to approximately US\$400 billion by 2021 in the MENA territory. B2C e-commerce will account for 30% of combined worth, with government-to-business or customer (G2B/C) accounting for 25% and Business - to - business e-commerce accounting for 20%. Furthermore, e-commerce logistics must minimize the risks in the vendor-buyer relationship by guaranteeing that the correct product is delivered to the correct client, at the correct location, and at the correct time. Also, despite brick-and-mortar establishments, where shipping is instantaneous, e-commerce companies are still wrestling with the issue of how quickly the requested product reaches the client. The logistics sector in Oman has the potential to help overcome these obstacles, allowing internal and overseas e-retailers to flourish, operate, and succeed (Ithraa 2020).

## **OMAN VISION 2040**

Oman Vision's 2040 has a major aim towards developing the infrastructure of the industries to create key economic drivers. Besides, this vision consists of national priorities that will lead to successful economic growth, standardization, profit, and sustainability. Those priorities accommodate economic diversification and leadership to share experiences, skills, and innovation to have an attractive market and competitive advantage that represents strong collaboration and teamwork (Rahman et al. 2021). Moreover, focusing on the health sector to provide advanced treatment using modern medical equipment, better training for the health sector workers, and build more health care facilities. Also, the educational and research, and innovation sectors to build a strong base of knowledge and creative educational methods and techniques for colleges, schools, training institutes, etc. Additionally, focusing on the diversity of the employment market by hiring experts in the industrial and management categories to enhance productivity, teamwork, and their knowledge base (Al Farsi and Khalel 2021). The encouragement of the usage of natural resources and building sustainable cities to reduce the carbon footprint and divert the dependence on petrol to other profitable and growing sectors such as supply chain and logistics. Legislative systems, government bodies, and private sectors are the key players in the Oman vision 2040 that will maintain law and economic growth upon the key elements that will be governed by the national priorities.

To reach the objective of a productive and diverse economy, build a society with creative and innovative individuals that can compete domestically and internationally, assign responsible state agencies, and have a working environment that consists of a balanced ecosystem and renewable resources, Oman Vision realization partners should have and own a developed



infrastructure of logistics, assign legislative and government frameworks, strategic utilization of the geographic location and natural resources, build political stability, and national willingness to participate and make this vision successful (Alyahyaeia et al. 2020). Oman aims in the vision 2040 to become in the top 10 logistics hubs worldwide and that resulted in providing a better infrastructure of logistics facilities, usage of the geographic location, and funding. There will be a detailed discussion about the factors that affect the development of the logistics sector and the changes that occurred to fulfill the aim of Oman Vision 2040 in logistics (Al Farsi and Khalel 2021).

**Geographic advantage:** Historically, Oman being situated on the Eastern edge of the Arabian Peninsula made them the first point of interaction for traders in India and the Arabian Subcontinent. Moreover, increasing the proximity of the distance between Oman and Africa has increased the commerce and trade activities with east Africa. Besides, the location of Musandam provided the Sultanate with territorial rights with the state of Hormuz where 30% of the oil exported worldwide passes (Al-Fathi and Al Hidabi), Also, Musandam is 40km away from Iran which is located at the end of the Hormuz trail, and with the friendly agreement between the countries both share the trade line of the exported oil. As a result, these geographic advantages lead to a positive attribute in developing the logistics sector and the country to capitalize on to provide better services and is ranked 43 in the World Bank's Logistics Performance Index. Also, Oman creates long-term friendly diplomatic relations with the surrounding countries, and that being added to their location creates a competitive advantage by performing logistics activities at the lowest costs possible and in an optimized time frame (Alyahyaeia et al. 2020).

**Public Funding:** The Tanfeedh Program which is a National Program for Enhancing Economic Diversification has encouraged both the public and private sectors to be part of the government's economic diversification plan and contribute to the funding of major projects. The Tanfeedh program has managed to collect 1 billion dollars that have been approved by the government from a private institute to fund a transport and energy infrastructure project (Al Abbadi et al. 2021). Besides, privatization, public-sectors, and new foreign direct investments laws are introduced by the program to enhance the participation of the private sector in the funding of the logistical development plan by providing better consumer response, services, high quality, and speed. Moreover, this law will allow 100% foreign ownership, facilitate investment, and eliminate the minimum capital required (Rahman et al. 2021).

**Technology development:** This factor is considered as the technical aspect to create value, speed, and accuracy to improve the logistics company services and products. The ERP system, robotics, fleet management system, warehouse management system, inventory management system, automation, data analytics, AI, etc. All these technologies enable management and

resourcing of tasks to be accomplished within a time frame and as per the requirements. Also, they enable predictive analysis and creation of patterns to deal with demand fluctuations and observe the consumer behavior to understand the customer requirements and fulfill them. Also, efficiently, and effectively track and trace the orders, fleets, and trucks to ensure the cargo reaches its destination on time and guide the drivers to the shortest routes to save time and fuel cost (Al-Wahaibi 2019).

**Ports and Free zones:** Oman have a 2092 km coastline that makes ports a key player in enabling Oman as the main leader in providing logistics services. The focus is on port Sohar, Sur, and Duqm where special economic zones and free zones are established offering 100% ownership and FDI. Duqm port consists of a special economic zone that is applied on 8 main areas which are regional airport, oil refinery, port, industrial complex, residential commercial area, tourism landscape, ship dry dock, and logistics service space. As a result, this will enable investors to gain a 30-year income tax exemption, full customs exemption, free repatriation of profits, and no capital required (Al Abbadi et al. 2021). Duqm has been developed to accommodate multi-model transport and coordination of the logistics services. It can handle air, road, rail, and sea transport and connect intranational trading routes to Duqm airport, port, and nearby industries. Moreover, the free zone built in Sohar houses 26 logistics companies, oil refiners, and building the first bitumen refinery to reduce the importation of bitumen and asphalt. Additionally, the port of Salalah free zone accommodates 4.4 million TEUs per year and handles transshipments. This port has received 5.6 billion dollars from investments and has seen growth from 10% to 12% from its container shipping and container terminal activities (Rahman et al. 2021).

**Rail sector:** Oman has been planning to build a 2135 km rail network to increase the connectivity between the neighboring countries and increase their export activities. Besides, increasing the utilization of the inter-modal transport infrastructure to save cost, increase sustainability and enable quicker transportation. Moreover, building domestic railway lines to connect the nodes of Duqm, Sohar, and Salalah ports to create an international gateway to international trade and build relationships with foreign investors (Al-Wahaibi 2019).

## RESEARCH METHOD

The paper is conceptual in nature and is based on the review of the existing literature on logistics clusters development with focus on Oman. Conceptual research is defined as a methodology wherein research is conducted by observing and analyzing already present information on a given topic. Conceptual research doesn't involve conducting any practical experiments. It is related to abstract concepts or ideas. Philosophers have long used conceptual

research to develop new theories or interpret existing theories in a different light. Research papers from various sources have been perused as secondary source of data. From these papers, a conceptual framework of diamond model has been developed. The diamond model, also known as the Porter Diamond or the Porter Diamond Theory of National Advantage, describes a nation's competitive advantage in the international market. In this model, four attributes are taken into consideration: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. According to Michael Porter, the model's creator, "These determinants create the national environment in which companies are born and learn how to compete.

It recognizes four pillars of research (factor conditions, demand conditions, related and supporting industries, firm structure, strategy and rivalry) that one must undertake in analysing the viability of a nation competing in a particular international market, but it also can be used as a comparative analysis tool in recognising which country a particular firm is suited to expanding into. Two of the aforementioned pillars focus on the (national) macroeconomics environment to determine if the demand is present along with the factors needed for production (i.e. both extreme ends of the value chain). Another pillar focuses on the specific relationships supporting industries have with the particular firm/nation/industry being studied. The last pillar it looks at the firm's strategic response (microeconomics) i.e. its strategy, taking into account the industry structure and rivalry (see five forces). In this way it tries to highlight areas of competitive advantage as well as competitive weakness, by looking at a company's/nations suitability to the particular conditions of a particular market.

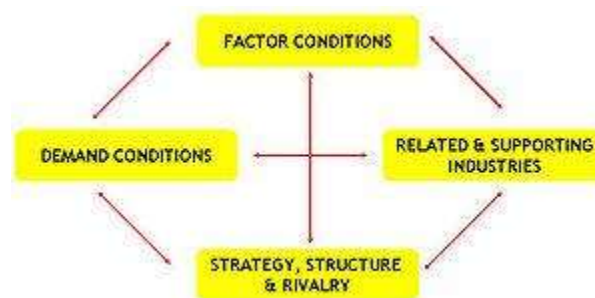


Figure 7: A graphical representation of Porter's National Diamond

## FINDINGS AND DISCUSSION

All the efforts that have been made and that are still being developed to improve the economy, logistics and transportation sector of Oman have shown great development in rail connectivity, road infrastructure, freight forwarding, shipping routes, e-commerce, logistics hubs,

etc. As a result, all these projects will aid in achieving the vision 2040 and improve the country's economy and GDP growth. On the other hand, here are some recommendations that would prevent minor obstacles to the road to success.

- 5.1 The essential need to provide extended distribution networks while enhancing ease without raising client prices. Customer perceptions regarding stock availability, shipping costs and versatility, refund policies, and forms of payment are still on the rise, whether they will be exploring, analyzing, or buying goods online or in stores
- 5.2 Instacart, a supermarket delivery business, Deliv, a crowdsourced same-day delivery service, and Uber are among the revolutionary new competitors in this space. Nevertheless, since classic logistics companies encounter increased competition, improved trace and tracking, and package security are required to meet customer expectations.
- 5.3 It's easy to transport things into Oman by plane, vessel, or vehicle, like in many cities, but it's far more difficult to get what has been ordered to households or workplaces from the centralized location where it was transported. To overcome this issue, we must rethink urban delivery methods that are more efficient, centralized customer base, long-term, and environmentally friendly.
- 5.4 Focusing on having cheap labor is a win-win situation but without experience or having experience labor to train the new interns causes a loss situation. As a result, there should be a balanced ratio to have experienced employees working together with the new workers to share their knowledge and train them. This will increase productivity, efficiency, saving time, minimizing risks and mistakes, etc.

## CONCLUSION

To conclude, this research focused on highlighting Oman's country profile, economic performance, and logistics clusters. Oman is a developing country that is improving its logistics sector to reach its aim of Oman's vision 2040 and to improve an alternative route to increase their GDP instead of depending on the oil and gas sector only. Also, the government has streamlined the routes to increase import and export activities through sea, air, road, and rail to increase connectivity and create a global network. Besides, having a current and future logistics cluster that involve free economic zones, logistics hubs, ports, airports, and industrial estates to attract foreign direct investment and increase job opportunities. Also, this report discussed Khazaen's logistical area that will include customs clearance facilities, trading activities, and distribution centers.

This is the result of its strategic location and having the resources to perform light industrial work and handling automobile genuine spare parts. Furthermore, the MENA e-

commerce region which encourages e-retailing and the adaptation of online marketing which is the future of logistics. This region offers the facilities and resources to perform e-commerce successfully by gaining customer satisfaction through quick delivery, the least cost, and the right product. Additionally, e-commerce enhances sustainability and reducing the carbon footprint. Lastly, Oman is a country that looks forward to economic diversity in their operations, improving their country's life, provide better services and products, and enter the route of advanced technology adaptation in their industries.

## DIRECTIONS FOR FUTURE RESEARCH

Based on this study, the following directions for futures research may be pointed out:

- The current study identified the feasibility of establishment of logistics clusters by using the diamond model and proposes some benefits of establishing it. This list is not exhaustive and future research should identify additional benefits and the inherent mechanisms that drive those benefits. It would be valuable for future research's to employ other methods to examine the implications of logistics clustering, such as econometric modeling.
- It would also be valuable for future research to investigate whether the benefits of logistics clustering are sustainable. If policymakers deploy resources to promote the development of logistics clusters, it is important to understand whether the potential benefits can be enjoyed by specific regions in the long-term. For example, especially as compared to manufacturing jobs, do logistics-related jobs remain in area for a long time? In addition, future research could empirically assess job growth within logistics clusters.

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