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THE CONTRIBUTION OF MARITIME PORT LOGISTICS SERVICES TO THE ACHIEVEMENT OF SAUDI VISION 2030 OBJECTIVES: A DESCRIPTIVE-ANALYTICAL STUDY (2016–2023)

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ABSTRACT

This study examines the strategic role of logistics services provided by Saudi Arabian seaports in advancing the objectives of Saudi Vision 2030, with particular emphasis on the period from 2016 to 2023. The research addresses the extent to which the seaport and logistics sector contributes to the national economy, the development efforts undertaken to enhance this sector's competitiveness, and the outcomes of these efforts in relation to Vision 2030 targets. Employing a combined historical and descriptive-analytical approach, the study draws on secondary data from official reports, governmental publications, and peer-reviewed literature. The findings reveal that Saudi seaports possess substantial infrastructure and operational capabilities that strategically position the Kingdom as a competitive global logistics hub. Furthermore, the development initiatives implemented within the Vision 2030 framework have yielded measurable improvements in port performance indicators, including significant advances in international logistics performance rankings. Notwithstanding these achievements, certain performance benchmarks remain works in progress, necessitating sustained and expanded development commitments. The study concludes with a set of evidence-based recommendations aimed at consolidating gains, addressing identified challenges, and accelerating the Kingdom's transition into a leading global logistics node.

KEYWORDS: Logistics Services; Saudi Seaports; Saudi Vision 2030; Port Performance; Supply Chain Management; Maritime Transport.

1. INTRODUCTION

Saudi Vision 2030 constitutes an ambitious national development blueprint representing a strategic evolution of the Kingdom's long-standing developmental trajectory since the 1970s. Conceived as a comprehensive roadmap for economic transformation, Vision 2030 seeks to diversify Saudi Arabia's economic base, reduce dependence on hydrocarbon revenues, and mobilise the Kingdom's intrinsic social, demographic, and geographic endowments to forge a resilient and diversified national economy. Among the most distinctive of these endowments is the Kingdom's exceptional geopolitical position — situated at the intersection of three continents (Asia, Europe, and Africa) and surrounded by some of the world's most strategically vital maritime passages and waterways — a characteristic that forms one of the three principal pillars upon which the Vision's strategic objectives are anchored.

The global context within which Vision 2030 was formulated renders the logistics agenda all the more urgent and timely. The accelerating deepening of global value chains, the proliferation of regional free trade agreements, and the intensification of competition among emerging-market economies for a share of global maritime trade flows have collectively elevated logistics performance to a first-order determinant of national economic competitiveness. Countries that succeed in positioning themselves as logistics nodes — capable of attracting transshipment volumes, value-added services, and logistics-related foreign direct investment — stand to capture disproportionate shares of the economic value generated by global trade networks. Saudi Arabia, with its strategic geographic position and expanding port infrastructure, is well-positioned to compete for this role, provided that the requisite policy frameworks, institutional capacities, and operational standards are systematically developed and sustained.

Specifically, one of the Vision's overarching aspirations is the transformation of Saudi Arabia into a leading regional and global logistics hub, capitalising on its economic weight and geographic centrality to serve as an effective bridge across the intercontinental trade corridors linking Asia, Europe, and Africa. This strategic orientation has catapulted the logistics sector — particularly that associated with seaport operations — to the forefront of governmental attention and investment. Comprehensive programmes have been launched to develop the requisite infrastructure and upgrade operational standards, with the expectation that these efforts would translate into measurable improvements in sector performance and meaningful contributions toward Vision 2030's targeted outcomes.

The present study situates itself within this context, seeking to systematically examine the current capabilities of Saudi seaports, the development initiatives undertaken within the Vision 2030 framework, and the performance results achieved over the study period (2016–2023). By doing so, the study aims to provide an evidence-based assessment of the extent to which the Kingdom's seaport and logistics sector is progressing toward its designated role in the national developmental vision, and to identify areas requiring continued attention and investment.

2. SIGNIFICANCE OF THE STUDY

The significance of this study is underscored by several interconnected considerations. First, seaports and their attendant logistics services are foundational to the functioning of diverse economic sectors, collectively contributing to the vitality of the national economy as an integrated whole. These facilities represent the primary conduits through which Saudi Arabia interfaces with global trade networks, mediating the movement of goods, raw materials, and intermediate products that sustain both productive activities and consumer markets.

Second, the study directly addresses one of Vision 2030's most pivotal strategic targets: the transformation of the Kingdom into a premier regional logistics hub capable of effectively interlinking the commercial flows of Asia, Europe, and Africa. Understanding the trajectory of progress toward this goal — and the factors that facilitate or impede it — is of immediate relevance to policymakers, sector stakeholders, and the broader scholarly community engaged with Gulf economic development.

Third, the study contributes to an emerging body of academic literature on port development and logistics transformation in the Gulf Cooperation Council (GCC) region, a domain that remains insufficiently represented in Q1-indexed international journals despite its growing policy and practical significance. By situating its analysis within established theoretical frameworks and leveraging official statistical data, the study aspires to make a substantive scholarly contribution to this field.

Fourth, from a methodological standpoint, the study demonstrates the analytical value of combining longitudinal performance data with institutional analysis, offering a replicable framework for evaluating development programme effectiveness in the port and logistics domain. This methodological contribution may be of utility to researchers studying comparable national logistics transformation programmes in other GCC or developing-economy contexts, where the alignment between national development visions and sector-level operational outcomes is an increasingly salient area of enquiry.

3. RESEARCH PROBLEM AND QUESTIONS

The logistics services sector occupies a position of particular strategic salience within Saudi Arabia's broader economic development agenda, commanding heightened governmental attention commensurate with its potential to advance Vision 2030's diversification objectives. Seaports, as the primary nodes of international maritime trade, are accorded a central role in this agenda, with the expectation that concerted development efforts will elevate the Kingdom to an advanced competitive position in global logistics.

The central problematic of this study revolves around three interrelated questions:

(1) What is the current state and strategic importance of Saudi seaports for the national economy?

(2) What specific role has been designated for the seaport and logistics sector within the Vision 2030 framework?

(3) What development initiatives have been undertaken to enhance the sector's capacities and align them with Vision 2030 objectives, and what have been the measurable outcomes of these initiatives?

4. RESEARCH OBJECTIVES

This study pursues three interrelated objectives:

1. To elucidate the strategic importance of the seaport and logistics sector to the Saudi national economy in general, and within the Vision 2030 framework in particular.
2. To characterise the current state and operational capabilities of Saudi seaports and the logistics services they provide.
3. To document and evaluate the development efforts directed at Saudi seaports and their associated logistics services within the executive programmes of Vision 2030, and to assess the outcomes of these efforts in terms of measurable performance improvements.

5. RESEARCH HYPOTHESES

The study advances three principal hypotheses grounded in the theoretical and empirical literature on port development and economic transformation:

H1. The significance of the seaport and logistics sector to the Saudi economy is fundamentally linked to the diversity and breadth of services it provides to various economic sectors.

H2. The sector possesses the infrastructural and operational capabilities necessary to fulfil the strategic role designated for it within Vision 2030.

H3. The development efforts directed at the sector have resulted in measurable performance improvements that are consistent with the attainment of Vision 2030's logistics-related targets.

6. SCOPE AND DELIMITATIONS

The thematic scope of this study is confined to the role of seaports and their associated logistics services in advancing Saudi Vision 2030's objectives. Geographically, the study is delimited to Saudi Arabian seaports under the supervision of the Saudi Ports Authority (Mawani) as well as selected ports managed by other entities. Temporally, the study covers the period from 2016 to 2023, corresponding broadly to the initial implementation phase of Vision 2030.

7. METHODOLOGY

The study adopts a dual methodological approach combining the historical method and the descriptive-analytical method. The historical method is employed to trace the developmental trajectory of Saudi seaports and situate the study's findings within their broader historical and policy context. The descriptive-analytical method is used to systematically examine and interpret quantitative data pertaining to port performance indicators, infrastructure capacities, and logistics rankings, drawing upon official statistical publications, governmental reports, institutional documents, and the peer-reviewed academic literature. Secondary data sources — including annual statistical yearbooks of the Saudi Ports Authority, reports of the Ministry of Transport and Logistic Services, World Bank Logistics Performance Index (LPI) data, and UNCTAD Maritime Connectivity reports — constitute the primary empirical basis for the study's analysis.

The selection of secondary data as the primary methodological instrument is both appropriate and well-established in the port economics and maritime transport literature, particularly for studies addressing macro-level port system

performance over an extended temporal horizon. The official statistics and institutional reports utilised in this study are compiled by authoritative bodies with direct operational access to the relevant data, ensuring a high standard of reliability and validity. The study's analytical framework integrates quantitative performance indicators — including container handling volumes, cargo tonnage, maritime traffic statistics, LPI scores, and international rankings — with qualitative assessments of institutional strategies, policy design, and development initiatives. This mixed-evidence approach enables a more holistic understanding of the interplay between policy inputs and measurable sector outcomes than would be possible through either quantitative or qualitative analysis alone.

The study period (2016–2023) was deliberately chosen to encompass the initial implementation phase of Vision 2030 from its launch year, thereby enabling an assessment of the sector's developmental trajectory during a period of significant policy-driven change. Where data for the full period are not uniformly available across all indicators — reflecting the evolving statistical reporting infrastructure of the Saudi Ports Authority — the analysis draws on the most recent available data points and triangulates findings across multiple sources to ensure analytical robustness.

8. REVIEW OF PRIOR STUDIES

A growing body of scholarly literature has engaged with the themes of seaport development, logistics performance, and economic transformation in developing and emerging economies. The studies most directly relevant to the present research are reviewed below, with attention to their methodological approaches, key findings, and points of convergence with or divergence from the present study.

Muhammad ibn Ahmad (2019) investigated the role of logistics operations in port development through a comparative analysis of the Port of Rotterdam (Netherlands) and the Port of Oran (Algeria). Employing descriptive-analytical and comparative methodologies, the study concluded that Rotterdam exemplifies a successful logistics model that has effectively attracted European logistics centres and related economic activities, while Oran continues to function as a conventional commercial port confronting significant global competitive challenges in the absence of integrated logistics services. The present study diverges from this work in its geographical focus (Saudi Arabia rather than European–North African comparisons) and its analytical frame (Vision 2030 objectives rather than logistics-driven port development per se), while sharing the broader concern with logistics performance as a determinant of port competitiveness.

Abd al-Hamid ibn Ali al-Ulyan (2012) examined the conceptual and practical dimensions of logistics in Saudi seaports, focusing on the adoption of modern operational methods, trade flow analysis, and the strategic management frameworks required to achieve competitive advantage. The study's key findings identified underutilisation of upper-structure support facilities, deficiencies in storage operations, and the absence of effective vessel traffic and maritime safety centres. The present study builds upon and extends this work by focusing specifically on the development trajectory of the sector within the Vision 2030 framework — a dimension absent from al-Ulyan's earlier analysis — and by incorporating performance data up to 2023, substantially expanding the temporal scope.

Ihab Muhammad Khalil al-Nimrawi (2008) analysed the competitive attributes of hub container ports in the Arabian Gulf, examining the general competitive landscape of ports and container terminals, the transport sector structure of the Gulf region, and the competitive environment of Gulf seaports. The study's primary focus on the comparative competitiveness of container ports across the Gulf region distinguishes it from the present study, which concentrates exclusively on Saudi ports within a national development strategy framework. Moreover, the substantial temporal distance — the earlier study predates Vision 2030 by nearly a decade — further differentiates the two works.

The present study contributes to this literature by providing a comprehensive, data-driven assessment of the Saudi seaport and logistics sector's development under Vision 2030, integrating theoretical frameworks with empirical performance data across the 2016–2023 period, and positioning its findings within contemporary discussions of port competitiveness and logistics-led economic diversification in the GCC region.

A broader theoretical implication of the Saudi case deserves mention in this context. The concurrent deployment of institutional strategies (the National Transport and Logistics Strategy and the Mawani corporate strategy), targeted capital investment (the Jeddah and Dammam concession agreements), digital transformation programmes

(the 'Fasah' platform), and international partnership frameworks (the Maersk logistics zone agreement and the four intercontinental shipping lines) exemplifies a systemic, multi-instrument approach to sector transformation. This approach aligns with contemporary conceptualisations of 'port cluster development' in the port economics literature, in which competitive advantage accrues not merely from physical infrastructure investment but from the co-development of institutional, technological, and network capabilities around port nodes. Future research might profitably examine whether this systemic approach is being replicated or adapted across other emerging-market port development contexts, and what institutional prerequisites are necessary for its successful execution.

9. THEORETICAL FRAMEWORK

9.1 The Concept of Logistics Services

The concept of logistics is multidisciplinary in its origins and applications, intersecting with the fields of management science, marketing, industrial economics, transport studies, engineering, and — perhaps most historically significant — military science, where the term first emerged before its scope expanded and its usage migrated to civilian economic domains. This etymological and conceptual breadth reflects the pervasiveness of logistics functions across virtually all sectors of organised human activity.

The Oxford English Dictionary defines logistics as 'the organisation and management of the movement of goods and services within a defined system' (Ahmad Muhammad al-Sayyid et al., 2020). More comprehensive definitions have been advanced by domain specialists. Heskett, for instance, characterises logistics as 'a set of activities facilitating the movement of goods, coordinating supply and demand, and generating spatial and temporal utility through the availability of goods at the designated time and place' (Ahmad Muhammad al-Sayyid et al., 2020). The American Council of Logistics Management offers a process-oriented definition, describing logistics as 'the process of planning, implementing, and controlling the efficient flow and storage of raw materials, in-process inventory, and finished goods, as well as the associated flow of information from point of origin to point of consumption' (Ballou, 1999). Rodrigue et al. (2006) further define logistics services as 'a broad set of specialised activities for the transport and distribution of goods from raw material sources to final distribution markets, together with associated information flows.'

Synthesising these definitions, logistics services may be understood as an integrated and interconnected system of activities designed to facilitate the continuous flow of goods — from raw materials through intermediate production stages to finished products — encompassing all associated information flows, packaging, handling, freight, transport, unloading, storage, and distribution operations across space and time. These activities are organised within what the business sector commonly terms the 'supply chain': a networked system of service activities extending from raw material sources to the final consumer.

9.2 The Economic Significance of Logistics Services

Logistics efficiency constitutes a fundamental determinant of economic growth and competitive performance for any national economy. High-quality logistics services reduce the transaction costs of economic activity, enhance integration into global value chains, and strengthen a country's capacity to compete in international markets. Conversely, logistics deficiencies impose substantial economic costs: they inflate production and distribution expenses, impede trade facilitation, and undermine a country's attractiveness as an investment destination.

Carolyne Freund, Director of Macroeconomics and Global Trade at the World Bank Group, has characterised logistics as 'the backbone of global trade,' observing that as global supply chains deepen and proliferate, the quality of a country's logistics services increasingly determines the extent and nature of its participation in the global economy (World Bank, n.d.). This perspective has informed the development of the World Bank's Logistics Performance Index (LPI), which benchmarks countries across six dimensions: customs efficiency, infrastructure quality, ease of international shipment arrangement, logistics services competence, cargo tracking and tracing, and timeliness of deliveries. Saudi Arabia's LPI trajectory over the study period is a key empirical reference point for the present analysis.

9.3 Typology of Logistics Services

Logistics services encompass a broad spectrum of specialised, interrelated activities pertaining to the movement of goods across their production and distribution life cycle. The principal service categories are enumerated below.

Supply chain services — commonly termed

'supply chain management' or 'supply chain operations' — encompass the transport of raw materials and semi-finished goods to manufacturing facilities, intra-production materials movement, and the delivery of finished goods from producers to final consumers (Yasir Ibrahim Muhammad, 2015). Transport services constitute one of the most fundamental logistics functions, involving the safe and efficient movement of goods from points of production to storage and distribution destinations via road, maritime, or air transport modes (Diggipacks, n.d.). Freight services represent the overarching logistics operation, incorporating multiple constituent processes — goods movement, storage, and delivery — within an integrated operational framework, including complementary activities such as packaging and packing (Alroshd, 2022).

Cargo handling services involve the physical manipulation of goods — their movement, pulling, pushing, lifting, and lowering — at production sites, seaports and airports, land transport terminals, and storage warehouses, utilising purpose-designed mechanical equipment (Annajah, n.d.). Cargo insurance services, while commonly classified under financial services, constitute an integral logistics function given their direct linkage to cargo safety across all transport stages — covering potential risks in land, maritime, and air freight operations (Tebadul, n.d.). Cold chain services are specialised logistics functions addressing the transport and supply of temperature-sensitive goods, providing appropriate refrigeration conditions to ensure product integrity throughout the shipping and transport process (Fastcoo, n.d.). Logistics information systems services encompass supply chain technology and information management innovations that enhance the efficiency and competitiveness of the overall logistics system, including artificial intelligence applications such as reporting robots that perform critical supply chain functions (Diggipacks, n.d.). Finally, customs clearance services are provided to investors, exporters, and importers, encompassing a range of procedures with competent governmental authorities, and are directly linked to freight services at both initial and terminal stages (Fastcoo, n.d.).

The integration of digital technologies into logistics services has become increasingly pivotal to competitive performance in the global maritime industry. Port community systems, automated terminal operating systems, blockchain-based documentation platforms, and Internet of Things (IoT) sensing networks collectively enable faster customs processing, enhanced cargo visibility, reduced dwell times, and improved resource utilisation. Leading global ports — including Rotterdam, Singapore, and Hamburg — have demonstrated that sustained investment in smart logistics technologies can translate directly into improved LPI scores and enhanced market share. This context underscores the strategic rationale for Saudi Arabia's emphasis on port digitalisation as a core element of its Vision 2030 logistics programme.

The foregoing typology reveals both the interconnectedness and the complexity of the logistics services ecosystem, with notable functional overlaps — particularly between transport and freight, between freight and customs clearance, and between cargo handling and most other service categories.

9.4 The Economic Significance of Seaports and Their Logistics Services

The economic importance of seaports derives from their multifaceted role in national development processes. Seaports serve as principal enablers of import operations — facilitating the inflow of raw materials, capital equipment, and machinery necessary for productive activity across agricultural, industrial, and extractive sectors — while simultaneously providing critical market access channels for export-oriented industries (Fadhl Ibrahim al-Ajwad, 2000). They constitute the primary mechanism through which countries participate in global trade exchange, serving as the foremost nodes of maritime transport — the mode that carries approximately 80 per cent of world trade by volume.

Beyond facilitating merchandise trade, seaports attract foreign direct investment targeting port infrastructure development and capacity enhancement, thereby contributing to improvements in national logistics performance and competitive standing. They also generate foreign exchange earnings through fees levied on foreign vessel calls and associated port services, contributing positively to the national trade balance and balance of payments. The logistics services within seaports — encompassing the full range of activities associated with vessel operations, cargo handling, storage, and transshipment — amplify these economic contributions by adding value at each stage of the maritime supply chain (Fadhl Ibrahim al-Ajwad, 2000).

Within seaport environments, logistics activities are classified according to two primary operational dimensions: services associated with vessel

movements within the port, and services associated with cargo transport and handling. The vessel-related service cluster includes pilotage and towage services (guiding and assisting vessel navigation during port entry and exit), cargo loading and discharge services (stowing and unstowing of cargo within vessels or port storage facilities, including ship-to-ship transfer operations), storage services (enabling vessels to discharge cargo continuously, thereby optimising berth utilisation and reducing vessel turnaround times), and maintenance and repair services (vessel repair, drydocking, and bunkering). The cargo-related service cluster encompasses two groups: primary services — including transport, freight, storage, and customer order management — and ancillary services — including cargo handling, packaging, information acquisition, procurement, and product scheduling (Hamlawy Rabia, 2009).

10. SAUDI ARABIAN SEAPORTS: CURRENT STATUS AND STRATEGIC IMPORTANCE

10.1 Overview of Saudi Seaports and Their Capabilities

Saudi Arabia's seaports are distributed across two principal maritime frontages: the Red Sea coast to the west, and the Arabian Gulf coast to the east. These ports are further classified by operational mandate into commercial and industrial categories. The following section provides a synoptic overview of each major port under the supervision of the Saudi Ports Authority (Mawani), as well as selected ports managed by other entities.

Jeddah Islamic Port is the principal gateway for foreign trade and the leading re-export hub on the Red Sea. Approximately 75 per cent of Saudi maritime trade and transhipment activities pass through this port, which also serves as the main reception point for Hajj and Umrah pilgrims arriving from across the world (Mawani, n.d.). The port receives approximately 5,000 vessels annually and is equipped with specialised terminals, advanced handling equipment, and integrated logistics services for storage and re-export operations. King Abdulaziz Port in Dammam is Saudi Arabia's primary seaport on the Arabian Gulf, linked by rail to the Riyadh Dry Port and serving as the principal gateway for imports destined for both the Eastern and Central regions of the Kingdom (Mawani, n.d.). The port accommodates large-scale vessels, offers comprehensive operational services, and houses modern cargo handling equipment alongside a ship repair facility equipped with two floating drydocks capable of receiving vessels up to 215 metres in length.

King Fahd Industrial Port in Jubail was established in 1982 to serve the large-scale industrial complex of the Jubail Industrial City. Designed for the import of industrial raw materials and the export of manufactured products, it ranks among the largest industrial ports in the Middle East (Mawani, n.d.). Yanbu Commercial Port serves as the second pilgrimage gateway after Jeddah Islamic Port and functions as a strategic maritime access point for the Madinah and Qassim regions, facilitating trade flows to and from these economically promising areas (Mawani, n.d.). King Fahd Industrial Port in Yanbu holds particular significance as the largest Saudi port for the loading of crude oil, refined petroleum products, and petrochemicals on the Red Sea coast, handling crude oil and derivative exports to global markets alongside solid and liquid petrochemicals and gas, while also managing equipment and machinery imports for the adjacent industrial complex (Mawani, n.d.).

Jubail Commercial Port serves as an auxiliary facility to King Abdulaziz Port at Dammam, supporting commercial activities and functioning as a gateway for Saudi imports and exports (Mawani, n.d.). Ras Al Khair Port, inaugurated in 2016, is the Kingdom's most recently established industrial port, equipped with modern handling equipment and designed for rapid adaptation to fluctuations in maritime transport flows (Mawani, n.d.). Jizan Port ranks as the third largest Saudi port on the Red Sea by design capacity and serves as the principal reception point for livestock imports from Horn of Africa countries (Mawani, n.d.).

Ras Tanura Port is a petroleum port distinguished by its exceptional operational capacity, capable of receiving 2,000 large oil tankers annually, loading 9 million barrels of hydrocarbons daily, simultaneously discharging 16 vessels, and accommodating a storage capacity of 500 million tons, with four artificial islands capable of simultaneously loading six tankers at 500,000 tons each (Mawani, n.d.). Al-Khafji Port is similarly a petroleum export facility specialising in crude oil export, capable of receiving three tankers simultaneously, accommodating six tankers in the waiting area and 30 smaller vessels at its berths, with services encompassing crude oil loading, diesel discharge, and bunkering and maintenance for smaller vessels (Mawani, n.d.).

Table 1 presents the infrastructure specifications and operational capacities of the ten Saudi seaports under the supervision of the Saudi Ports Authority.

Table 1: Infrastructure and Operational Capacities of Saudi Seaports under Mawani Supervision

Port Name	Area (km²)	Berths	Terminals	Capacity (Million Tons)
Jeddah Islamic Port	12.5	62	4	130
King Abdulaziz Port, Dammam	19.0	43	3	105
King Fahd Industrial Port, Jubail	7.2	34	5	70
Yanbu Commercial Port	4.2	12	2	13.5
King Fahd Industrial Port, Yanbu	6.8	34	10	210
Jubail Commercial Port	8.4	16	2	36
Ras Al Khair Port	23.0	14	1	35
Jizan Port	4.2	12	1	5
Ras Tanura Port	—	28	3	500
Al-Khafji Port	14.5	23	—	—
Dhuba Port (NEOM)*	12,005	10	3	10

Source: Compiled by the author from Saudi Ports Authority (Mawani) statistical data.
** Port management and operations were transferred to NEOM Company in 1444H (2023).*

Beyond the ports listed in Table 1, a number of additional seaports operate under the management of entities other than Mawani. Among the most significant is Dhuba Port (NEOM), which serves as the connectivity gateway between the Kingdom's Northwestern region and the external world. Although its primary activity is passenger transport, it also handles general cargo and contributes to transit trade development, facilitating commerce among GCC member states and the Arab Republic of Egypt (NEOM, n.d.). King Abdullah Port, affiliated with King Abdullah Economic City in Rabigh Governorate, is the first Saudi port to be developed and managed entirely by the private sector and is owned by the Ports Development Company under the oversight of the Economic Cities and Special Zones Authority (King Abdullah Port, n.d.).

10.2 International and Domestic Significance of Saudi Seaports

Saudi seaports derive their international significance from the Kingdom's prominent position in global trade, as one of the world's most influential economies — a member of the G20 group of the world's twenty largest economies — and from its exceptional geostrategic positioning at the confluence of major intercontinental trade routes. These attributes render Saudi ports critical nodes in the global maritime network, with implications extending well beyond the Kingdom's own trade volumes.

At the domestic level, the significance of Saudi seaports is anchored in their indispensable role as the Kingdom's primary interface with the external world. Approximately 95 per cent of Saudi exports and 70 per cent of its imports flow through these ports, making them foundational to both the stability of domestic markets and the management of the balance of payments. Their contribution to national economic stability is therefore dual: inward, through ensuring the continuity of supply chains that sustain domestic consumption and production; and outward, through facilitating the export of hydrocarbon and non-hydrocarbon products to global markets.

Individual ports within the Saudi seaport network each carry distinct dimensions of national and international importance. Jeddah Islamic Port, ranked first among Red Sea ports, derives its preeminent significance from its location astride the principal global shipping lane and its comprehensive commercial and logistics capabilities (Saudi Ports Authority Annual Statistical Yearbook, 2023). King Abdulaziz Port at Dammam constitutes an important logistics hub on the Arabian Gulf coast, offering integrated logistics services that deliver tangible added value to investors (ibid.). King Fahd Industrial Port at Jubail serves as the principal export conduit for petrochemical products from the Jubail Industrial City, drawing its international significance from its position among the Middle East's largest industrial ports and its proximity to production facilities (ibid.). Yanbu Commercial Port, the second largest Saudi Red Sea port, is also the closest major Saudi port to the Mediterranean Sea (ibid.). King Fahd Industrial Port at Yanbu serves as the Kingdom's largest crude oil and refined petroleum products export port for major global markets (ibid.). Jizan Port benefits from its proximity to eastern and western maritime trade routes between Europe, the Far East, the Arabian Gulf, and East Africa. Ras Tanura Port, ranked as the world's largest petroleum port, channels approximately 90 per cent of the Kingdom's hydrocarbon exports to international markets.

Table 2 presents the value of Saudi exports and imports passing through seaports during the period 2015–2019, reflecting the scale of maritime trade flows mediated by the national port system.

Table 2: Value of Saudi Exports and Imports via Seaports, 2015–2019 (USD)

Category	2015	2016	2017	2018	2019
Exports (USD)	130,578,791	144,523,376	150,469,938	159,058,438	156,126,623
Imports (USD)	103,364,675	107,822,221	107,423,597	108,038,198	106,190,292
Total (USD)	233,952,466	252,345,597	257,892,035	267,096,636	262,316,915

Source: Compiled by the author from the Saudi Ports Authority Annual Statistical Yearbook.
Note: Data for 2020–2023 reflect continued growth trajectories discussed in Section 11.3. Full-period data are incorporated in the qualitative analysis.

10.3 Challenges Confronting Saudi Seaports

Saudi seaports confront a set of systemic challenges that constitute impediments to their operational effectiveness and competitive standing, and which represent priority areas for policy intervention within the Vision 2030 framework. These challenges, documented in the Saudi Ports Authority's Annual Report (2023), include: shifts in the regional economic and commercial landscape and their impact on the market share of Saudi ports; overcapacity relative to current utilisation rates; pricing pressures and internal competitive dynamics arising from the absence of coordinated inter-port marketing; difficulties in retaining specialised national expertise across different port operational domains; progress in Saudisation targets within port workforces; and functional overlaps among governmental bodies with responsibilities in the maritime transport sector, which generate coordination inefficiencies. Addressing these structural challenges is integral to the ambition of positioning Saudi ports as world-class competitive entities.

11. DEVELOPMENT OF SAUDI SEAPORTS AND LOGISTICS SERVICES WITHIN VISION 2030

11.1 The Strategic Position of Logistics Services in Vision 2030

Within its strategic framework, Saudi Vision 2030 positions the logistics sector as a pivotal enabler of economic diversification and national competitiveness. The Vision's 'Thriving Economy' pillar — one of its three foundational objectives — explicitly identifies the leveraging of the Kingdom's distinctive geographic position and the forging of new strategic partnerships as mechanisms for economic development, export growth, and the capitalisation of logistics potential to catalyse a new phase of industrial transformation and expanded trade (Vision 2030, n.d.). The Vision's targets further encompass the transformation of Saudi Arabia into a leading global logistics hub — leveraging the Kingdom's status as the largest economy on the Arabian Peninsula — capable of effectively connecting intercontinental commercial routes.

The Vision's executive programmes have devoted substantial institutional attention to logistics sector development, most notably through the National Industrial Development and Logistics Programme (NIDLP), launched in 2019 with the mandate to transform the Kingdom into a leading industrial power and global logistics platform. The Programme seeks to maximise the economic impact of the energy and mining sectors, centre local content development and Fourth Industrial Revolution technologies, and create an attractive investment environment (Vision 2030, n.d.). The NIDLP's twelve strategic objectives include two directly pertaining to logistics: the establishment and performance enhancement of the logistics centre, and the improvement of local, regional, and international connectivity through trade and transport networks. The Programme's 2025 logistics targets include: achieving a Logistics Performance Index score above 3.38; raising port operational utilisation relative to capacity to 70 per cent; and establishing 20 logistics service centres with re-export linkages (Vision 2030, n.d.).

11.2 Development Efforts: Strategies, Initiatives, and Agreements

The development efforts directed at Saudi seaports and their logistics services are structured around three principal pillars.

11.2.1 The National Transport and Logistics Strategy

This overarching strategy provides the vision and strategic direction for the transport and logistics sector, ensuring integration across transport modes and serving as the primary guide for developing service strategies within the sector. It provides effective governance among transport modes and facilitates their interconnection and interaction. The strategy's foundational pillars are: consolidating the Kingdom's position as a global logistics hub, elevating the quality of life in Saudi cities, achieving fiscal balance, and improving governmental apparatus performance (Ministry of Transport and Logistic Services, 2021).

Among the sector-specific targets embedded within this strategy are: enhancing transport mode connectivity by strengthening links among maritime, air, road, and rail transport to improve freight and cargo services; embedding smart technologies such as port automation and smart logistics infrastructure; advancing the Kingdom's LPI ranking from 55th to the top ten globally and ensuring regional leadership; improving logistics licensing procedures and regulations; and developing 69 logistics platforms consolidated into 27 logistics zones, 8 land border zones, and 9 truck rest areas to optimise operational efficiency (Ministry of Transport and Logistic Services, 2021).

11.2.2 The Saudi Ports Authority (Mawani) Strategy

Launched in 2022, Mawani's strategic framework inaugurates a new era for the maritime transport and logistics ecosystem in the Kingdom. The strategy rests on three pillars: enabling growth and innovation within the Kingdom's maritime ecosystem; enhancing Mawani's regulatory character and operational model; and ensuring an effective, reliable regulatory and commercial environment (Mawani, n.d.).

The strategy's 2030 targets include: increasing port capacity to over 40 million TEUs annually; raising the Kingdom's market share in regional competition to 45 per cent; elevating port occupancy to 70 per cent of total design capacity; advancing the Kingdom's UNCTAD Liner Shipping Connectivity Index ranking to 80th globally; raising the Logistics Performance Index score to 4.01; and elevating the Kingdom's LPI ranking from 49th to 10th globally, ensuring regional leadership (Mawani, n.d.).

11.2.3 Major Initiatives and Strategic Agreements

The Saudi Ports Authority implemented a series of landmark initiatives and strategic agreements throughout the study period aimed at strengthening port competitiveness in line with international best practices. A landmark concession agreement — the largest in the history of Saudi ports — was concluded for the development and operation of the Northern and Southern Container Terminals at Jeddah Islamic Port in partnership with leading regional and global port operators, involving an investment of approximately SAR 9 billion. This agreement is projected to increase container terminal capacity by approximately 60 per cent, from 7.6 million TEUs to 13 million TEUs annually, while generating approximately 400 new employment positions in the port sector and stimulating domestic content demand and investment inflows (Mawani, n.d.).

A cooperation agreement was concluded with Maersk Saudi Arabia for the establishment of an integrated logistics zone at Jeddah Islamic Port, representing an investment of approximately SAR 1.3 billion. The resulting facility — the largest logistics zone in the Middle East — is projected to create approximately 2,500 direct and indirect employment opportunities (Mawani, n.d.). The largest single-award contract in the Kingdom's history was also signed with the Saudi International Ports Company, involving an investment of SAR 7.3 billion for the construction of the largest smart container terminal in the Middle East at King Abdulaziz Port in Dammam, projected to increase container terminal capacity by over 120 per cent to 7.5 million TEUs annually (Mawani, n.d.).

In parallel, Mawani launched four intercontinental shipping lines to strengthen the connectivity of Saudi ports with global maritime networks. In the domain of operational efficiency and smart systems, the Authority implemented a truck appointment management system for imports and exports via the 'Fasah' digital platform at King Abdulaziz Port and Jeddah Islamic Port (Phase 1), in collaboration with the Saudi Company for Electronic Data Interchange ('Tadawul'), advancing the digitalisation of port operations (Mawani, n.d.).

11.3 Outcomes of Development Efforts

The development initiatives described above have yielded a series of quantifiable performance improvements, providing empirical validation of the effectiveness of the Vision 2030 logistics strategy as applied to the seaport sector.

In terms of global rankings, Saudi Arabia secured 16th place internationally in total cargo handling volumes according to the annual Lloyd's List Global Port Rankings, which measures annual container handling production capacity. Jeddah Islamic Port registered a significant ranking improvement in 2021, advancing from 42nd to 37th globally, having recorded 4,767 TEUs in 2020 — surpassing numerous regional and international ports in the process. King Abdullah Port reached 84th position globally, while King Abdulaziz Port at Dammam was placed 193rd. The same year witnessed improvements in the Kingdom's maritime shipping connectivity indicator according to UNCTAD's Liner Shipping Connectivity Index (Al-Iqtisad Al-Yawm, Issue 28, 1443H).

King Fahd Industrial Port at Jubail recorded an increase in total cargo handled in 2021 — encompassing both exports and imports — of more than five million tons of various refined petroleum products and petrochemicals via 155 vessels,

representing a growth rate of 3.45 per cent relative to 2020 (Al-Iqtisad Al-Yawm, Issue 23, 1443H). The port also distinguished itself in digital transformation, with achievements in port digitalisation reflecting positively on productivity, operational capacity, logistics service delivery, supply chain management, trade opportunity creation, and financial transaction management (Al-Iqtisad Al-Yawm, Issue 22, 1442H).

Table 3 presents the key maritime transport activity indicators for Saudi seaports during 2021 and 2022, reflecting the progressive improvements yielded by the development programme.

Table 3: Key Maritime Transport Performance Indicators for Saudi Seaports, 2021–2022

Indicator	Unit	2021	2022	Growth (%)
Container Handling	Million TEUs	10	10.4	+3.2%
Transhipment Containers	Million TEUs	5.4	5.5	+2%
Imports & Exports (Containers)	Million TEUs	4.6	4.8	+5%
General Cargo Handled	Thousand tons	210	237	+13%
Passenger Traffic	Thousands	688	933	+36%
Vehicle Imports	Thousands	778	973	+25%

Source: Compiled by the author from Saudi Ports Authority statistics, 2021–2022.

The data presented in Table 3 confirm the positive growth trajectories across all principal maritime transport activity indicators during the 2021–2022 period. Container handling grew by 3.2 per cent, transhipment containers by 2 per cent, import and export containers by 5 per cent, general cargo handled by 13 per cent, passenger traffic by 36 per cent, and vehicle imports by 25 per cent. These improvements are attributable, at least in part, to the development investments concentrated in key ports during this phase.

Positive performance trends continued into 2023. The Saudi Ports Authority reported a 21.1 per cent increase in container handling during March 2023 alone, reaching approximately 693,500 TEUs compared to 572,500 TEUs in the same period of 2022. Transhipment containers rose by 12.8 per cent to 274,800 units in March 2023, versus 243,000 units in March 2022. Cargo tonnage grew by 5.8 per cent to approximately 26.1 million tons in March 2023, compared to 24.7 million tons in March 2022. Vehicle imports via Saudi ports rose by approximately 11.4 per cent; maritime traffic increased by approximately 12.6 per cent (from 874 to 984 vessels calling in March); and passenger numbers increased by 21.2 per cent relative to March 2022 (Mawani, n.d.).

Jeddah Islamic Port, which received the most concentrated development investment, recorded a 25 per cent increase in total TEU volumes during the first four months of 2023 compared to the same period in 2022. Total transhipment and berthing containers grew by approximately 21.8 per cent, total cargo tonnage by 19.3 per cent, maritime traffic by approximately 13.3 per cent, and passenger arrivals and departures by approximately 334.8 per cent during the same comparative period (Mawani, n.d.).

These performance gains contributed to Saudi Arabia's advancement of 17 positions in the World Bank's Logistics Performance Index (LPI), moving from 55th to 38th among 160 countries. In a further milestone, Saudi Arabia achieved global first place in the World Bank's Container Port Performance Index, with King Abdullah Port advancing from second to first position, King Abdulaziz Port at Dammam improving from 102nd to 14th, and Jeddah Islamic Port advancing from 53rd to 8th globally (World Bank Group, 2022). These outcomes confirm substantial progress in the competitive positioning of Saudi seaports, though several targets under the Mawani 2030 Strategy and the NIDLP remain to be achieved.

Contextualising these outcomes within the broader regional competitive landscape reinforces their significance. The Arabian Gulf region hosts several of the world's highest-performing container ports — notably the Port of Jebel Ali in the United Arab Emirates, which has long anchored regional transshipment supremacy — and the competitive dynamics among Gulf ports are characterised by significant investment rivalries, route competition, and market share contestation. Saudi Arabia's notable improvement in relative rankings within this competitive environment signals a meaningful shift in its port sector's competitive standing. At the same time, the concentration of development investments in Jeddah and Dammam during the initial phase implies that the full potential of the Saudi port network — including under-invested ports such as Jubail Commercial, Yanbu Commercial, Jizan, and Ras Al Khair — has yet to be systematically unlocked. Extending the development programme to encompass these facilities in subsequent phases could yield further substantial improvements in aggregate national logistics performance and contribute materially to Vision 2030's overarching diversification goals.

12. DISCUSSION

The findings of this study reveal a coherent and mutually reinforcing relationship between the strategic policy commitments embedded in Saudi Vision 2030 and the measurable performance improvements recorded across the Kingdom's seaport and logistics sector during the 2016–2023 period. Three interrelated themes warrant sustained analytical attention.

The first concerns the translation of strategic intent into operational outcomes. The study demonstrates that the deployment of complementary institutional instruments — the National Transport and Logistics Strategy, the Mawani corporate strategy, targeted capital investment agreements, and digital transformation programmes — has generated tangible gains in port performance, as evidenced by Saudi Arabia's advancement of 17 positions in the World Bank's Logistics Performance Index and its attainment of first place in the Container Port Performance Index. These outcomes lend empirical support to the first and third hypotheses of the study: that the sector's significance is commensurate with the breadth of services it provides to the national economy, and that development efforts have yielded measurable performance improvements. They are also consistent with the broader port economics literature, which consistently identifies institutional quality, infrastructure investment, and technological integration as the primary determinants of port competitiveness (Rodrigue et al., 2006; Ballou, 1999).

The second theme concerns the spatial concentration of development investment and its implications for system-wide performance. The analysis reveals that the initial phase of the Vision 2030 logistics programme prioritised two ports — Jeddah Islamic Port and King Abdulaziz Port at Dammam — which together account for the majority of the Kingdom's commercial cargo throughput. While this concentration strategy generated rapid and highly visible ranking improvements, it necessarily deferred the development of secondary ports such as Yanbu Commercial, Jubail Commercial, Jizan, and Ras Al Khair. This pattern is consistent with phased development logic, wherein scarce investment resources are first directed toward highest-impact nodes; however, it also implies that the aggregate performance of the Saudi port system has not yet fully reflected the potential contributions of the broader port network. Extending development efforts to encompass these facilities in subsequent phases represents both a logical strategic progression and a significant latent opportunity for further LPI improvement.

The third theme pertains to the structural challenges that continue to constrain the sector's competitive trajectory. Overcapacity relative to current utilisation, inter-port competitive dynamics in the absence of coordinated marketing, and functional jurisdictional overlaps among governmental bodies with maritime transport responsibilities represent systemic impediments that neither infrastructure investment nor digital transformation alone can fully resolve. These findings reinforce the second hypothesis — that the sector possesses the structural prerequisites for its designated role — while simultaneously qualifying it: capability is a necessary but not sufficient condition for competitive leadership. Governance reform, regulatory clarity, and inter-institutional coordination must accompany capital investment to unlock the full competitive potential that Saudi Arabia's geographic position and infrastructure endowment afford.

Taken together, these themes suggest that the Kingdom's port and logistics sector is on a substantively positive developmental trajectory, but that realising Vision 2030's most ambitious logistics targets — particularly the top-ten global LPI ranking — will require sustained, broadened, and institutionally coherent policy commitment across the remainder of the Vision's implementation horizon.

13. CONCLUSION

13.1 Principal Findings

This study has examined the role of logistics services in Saudi Arabian seaports in advancing the objectives of Saudi Vision 2030, yielding a set of principal findings that are summarised below.

First, the Kingdom's commitment to the seaport and logistics sector is institutionally embedded within Vision 2030's strategic architecture, reflected in its designation as a core target within the National Industrial Development and Logistics Programme — one of the Vision's most significant executive instruments. Second, the cumulative infrastructure, equipment, and operational capabilities of the Saudi seaport system — reinforced by the Kingdom's exceptional geostrategic position — confer upon it the structural prerequisites to function as a world-class competitive logistics hub, consistent with Vision 2030's aspirations. Third, the development efforts have been strategically focused on a set of measurable objectives: increasing port capacity, raising the Kingdom's market share in regional competition, advancing UNCTAD maritime

transport rankings, improving Logistics Performance Index scores, and ensuring regional leadership in logistics performance. Fourth, the initial phase of development efforts was concentrated on priority ports — primarily Jeddah Islamic Port and King Abdulaziz Port at Dammam — with container terminal development and the establishment of integrated logistics zones as the primary investment vectors. Fifth, the performance outcomes of these development efforts have demonstrably improved the Kingdom's international rankings in maritime transport and logistics performance, though certain benchmark targets — particularly the top-ten LPI ranking — remain to be fully achieved.

13.2 Recommendations

In light of the foregoing findings, the study advances the following evidence-based recommendations directed at policymakers, the Saudi Ports Authority, and relevant governmental bodies.

It is recommended that development momentum at Jeddah Islamic Port and King Abdulaziz Port at Dammam be sustained and intensified until the targeted performance levels — commensurate with top-tier international rankings — are fully achieved. Concurrently, the scope of development efforts should be progressively broadened to encompass additional major ports in accordance with the strategic roadmaps governing the sector. Particular attention should be accorded to the accelerated integration of artificial intelligence and advanced technologies — including smart automation systems and cybersecurity solutions for maritime operations — given the transformative competitive advantage these technologies confer on leading global ports.

The establishment of strategic digital technology partnerships, modelled on the existing collaboration between King Abdullah Port and the Saudi Company for Electronic Data Interchange ('Tadawul'), should be pursued with the aim of achieving full digital transformation across all Mawani-supervised ports. The academic and professional human capital base supporting the logistics sector also warrants targeted investment: scholarships and professional development programmes aligned with international maritime qualifications could accelerate the Saudisation of specialised port roles while ensuring that the national workforce possesses the competencies required by increasingly technology-intensive port operations.

Finally, concerted regulatory reform should address structural overlaps in mandates and functional responsibilities among the Saudi Ports Authority and other entities associated with maritime transport — particularly by issuing clear regulatory frameworks that delineate the responsibilities and competencies of each body, thereby reducing coordination costs and enhancing systemic governance effectiveness. A unified inter-ministerial coordination mechanism, convening the Ministry of Transport, Mawani, the General Authority of Civil Aviation, Saudi Customs, and other relevant bodies on a structured basis, could serve as an effective institutional vehicle for resolving jurisdictional ambiguities, aligning incentive structures, and accelerating the realisation of Vision 2030's logistics sector targets.

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