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The Logistics Performance Index in Oman: A Comprehensive Review Through Multi-Criteria Decision-Making

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Abstract

The current economy heavily relies on global commerce, where logistics are vital in facilitating the smooth transportation of commodities across international boundaries. The Logistics Performance Index (LPI), created by the World Bank, is a crucial instrument for assessing the logistics systems of nations. It is based on six essential criteria: customs procedures, infrastructure quality, international shipments, logistics competence, tracking and tracing capabilities, and delivery timelines. With its advantageous position on the Arabian Peninsula, Oman could emerge as a prominent centre for logistics. The Omani government's objective is to convert the nation into a dominant force in logistics, as outlined in its Vision 2040 plan. The logistics industry in Oman plays a crucial role in promoting economic diversification, facilitating integration with global markets, and fostering overall economic development. This research uses the Logistics Performance Index (LPI) and Multi-Criteria Decision-Making (MCDM) approaches to evaluate Oman's logistics performance. The study also identifies the main areas that need improvement and compares Oman's performance with that of other countries in the region and globally. The study aims to provide policy suggestions to improve Oman's logistics industry, supporting its objective of becoming a prominent logistics hub. In addition, the research used an improved gravity model to examine non-oil exports and re-exports, considering variables such as GDP, population growth, distance, and Free Trade Agreements (FTAs). The results demonstrate substantial linkages and provide valuable insights into possible trade possibilities and forthcoming advancements. This study provides policymakers and stakeholders with a helpful tool to facilitate strategic enhancements in Oman's logistics sector and bolster the nation's economic strategy.

Keywords: *Logistics Performance Index, Oman, Global Commerce, MCDM, International Shipments.*

List of Abbreviations

LPI: Logistics Performance Index

MCDM: Multi-criteria choice-making

AHP: Analytic Hierarchy Process

TOPSIS: Technique for Order of Preference by Similarity to Ideal Solution

SAW: Simple Additive Weighting

AHP: Analytical Hierarchy Process

GCC: Gulf Cooperation Council

NCSI: National Centre for Statistics and Information

FTAs: Future Free Trade Agreements

IMF: International Monetary Fund

ECER: East Coast Economic Region

TMS: Transportation management systems

WMS: Warehousing management systems

KPIs: Key Performance Indicators

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RBV: Resource-Based View

PEMANDU: Malaysia's Performance Management and Delivery Unit

PPPs: Public-Private Partnerships

JIT: Just-in-Time

EOQ: Economic Order Quantity

Introduction

Global business has emerged as the fundamental pillar of the contemporary economy, with logistics playing a pivotal role in guaranteeing the smooth and effective transportation of commodities across international boundaries. [1-3]. The efficiency of a nation's logistics infrastructure directly impacts its economic expansion and ability to compete in the international marketplace. This awareness has prompted a heightened emphasis on assessing and enhancing logistics performance on a global scale. [4, 5]. The Logistics Performance Index (LPI) is a notable benchmark among the different instruments created for this objective. [6, 7]. The Logistics Performance Index (LPI), created by the World Bank, evaluates the efficiency of nations' logistics systems using six primary criteria: customs procedures, infrastructure quality, international shipments, logistics quality and competence, tracking and tracing capabilities, and timeliness of deliveries. [6]The LPI assesses these characteristics to provide valuable insights into a country's logistics system's strengths and weaknesses. This helps policymakers and stakeholders identify areas for improvement. [7-9].

Oman, situated strategically on the southeastern coast of the Arabian Peninsula, has traditionally served as a central point for marine commerce. [10-12]. Due to its strategic geographical location and proximity to critical maritime routes and rising markets, the nation has considerable potential to become a prominent logistics hub in the area. The Omani government has recently seen the potential and undertaken an ambitious endeavour to convert the country into a dominant force in logistics, in line with its Vision 2040 [13, 14]. The logistics industry in Oman is crucial due to its significant importance and impact. Firstly, it promotes economic diversification by encouraging commerce in other sectors and lowering dependence on oil and gas exports. [15, 16]. Furthermore, it improves the country's integration with international markets, increasing exports and imports. Additionally, a well-functioning logistics system significantly enhances the overall business climate, entices foreign investment, and fosters long-term economic growth. The Logistics Performance Index is a well-recognized measure that assesses the efficiency of logistics operations in different nations. [4, 17]The LPI, introduced by the World Bank in 2007, is a significant instrument for assessing and comparing countries' logistics capabilities. The score is derived from a survey conducted among global freight forwarders and express carriers, which evaluates their firsthand experiences and subjective evaluations of logistics performance across various nations. [6, 7].

Optimization of customs and border management clearance. Infrastructure: Evaluation of the commerce and transport infrastructure's level of quality. International Shipments: Convenient and cost-effective international shipping arrangements [18, 19]. Logistics Quality and Competence: Evaluating the proficiency and excellence of logistics services. Tracking and Tracing: Capability to monitor and follow the progress of shipments [1, 20]. Punctuality of shipments in reaching their destination within the designated or anticipated delivery timeframe. The individual components are evaluated using a rating scale, and the combined score determines the overall Logistics Performance Index (LPI), which offers a comprehensive assessment of a country's logistics performance. [9]. Multi-criteria choice-making (MCDM) approaches provide a robust framework for assessing complicated choice issues in logistics performance evaluation. [21, 22]. These methods are instrumental when dealing with several criteria that may clash with each other. MCDM methodologies, such as the Analytic Hierarchy Process (AHP), Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), and Delphi method, provide a systematic and transparent assessment process [23]By using Multi-Criteria Decision-Making (MCDM) techniques on the Logistics Performance Index (LPI), researchers and policymakers may better understand the comparative significance of various

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logistics elements and pinpoint specific improvement plans. These approaches provide a comprehensive analysis by considering several aspects and viewpoints from stakeholders, leading to better informed and successful decision-making.

The objective of this research is to conduct a thorough assessment of the Logistics Performance Index in Oman using Multi-Criteria Decision-Making techniques. The stated goals are as follows. Evaluating Oman's present logistics performance: Evaluate Oman's current logistics performance using the LPI framework, highlighting its strengths and areas that need improvement. Utilizing Multiple Criteria Decision Making (MCDM) Techniques: Apply Multi-Criteria Decision Making (MCDM) methodologies to assess the relative significance of the LPI components and determine the most crucial areas for action. Conduct a benchmarking analysis to compare Oman's logistics performance with other nations in the area and worldwide. Emphasize the competitive advantages and problems that Oman faces in this comparison. Formulating Policy Recommendations: Suggest concrete policy measures to improve Oman's logistics performance, aligning with the country's goal of becoming a prominent logistics centre. The Logistics Performance Index provides a thorough framework for assessing and comparing the logistics capabilities of different nations. In Oman, using the knowledge gained from the LPI and employing Multi-Criteria Decision-Making techniques will significantly increase the comprehension of the country's logistics performance and direct specific enhancements. This research seeks to contribute to Oman's goal of being a prominent logistics center regionally and worldwide, aligning with the country's vision. This study aims to enhance Oman's logistics industry's efficiency, competitiveness, and sustainability by thoroughly evaluating its performance, comparing it with similar countries, and providing well-informed policy suggestions. The article's findings and suggestions will be a significant resource for policymakers, industry stakeholders, and academics, propelling the nation's logistics growth.

Logistics Applications of Multi-Criteria Decision-Making (MCDM) Methods

Individuals require varying perspectives on a model and its representation, each offering cognitive value in gaining insight and comprehension. [24]. Decisions vary in complexity, ease of accessing information, time limitations, and other factors. [25]Humans engage in decision-making when they encounter various difficulties and circumstances. Organizations rely heavily on this process. This activity constantly occurs at all levels and directly impacts the company's overall functioning. [26]. When alone, an individual's behaviour can never exhibit a high level of logic. Humans must possess extensive knowledge and understanding of several possibilities, making achieving any approximation to objective rationality challenging. [26]. Analyzing choices logically and methodically is a practical approach to addressing various challenges, including studying several options in uncertain situations. [26]. Decision analysis provides decision-makers with tools to resolve choice issues, including several elements. [27]. These elements include competing goals; hence, asserting that all solutions universally fulfill all objectives is impossible. [28]. According to Edwards et al. (2007), decision analysis is theoretically normative but prescriptive. [27]. In addition, it is essential to note that decision analysis encompasses complex operational research (OP-hard) and soft operational research (OP-soft). The OP-hard encompasses mathematical programming in all its forms and is particularly relevant to well-organized situations. On the other hand, the purpose of OP-soft is to address complex issues that lack a clear structure. It encompasses techniques for organizing these problems, considering the uncertain and imprecise judgments made by decision-makers [29]. The characteristics of ill-structured situations include various players, different views, competing interests, intangible numbers, and critical uncertainties. [29]. Gomes et al. (2009) highlight the significance of such techniques. [30]. OP-soft primarily aims to analyze and organize the issue at hand, whereas OP-hard mainly concentrates on finding a solution to the problem. Due to the need for quick reaction, decision-making operates distinctly from a logical understanding. Therefore, intuition, which relies on perceiving important factors, plays a significant role. [26]. Furthermore, it is essential to highlight a prevailing tendency to combine these two techniques, which enhances the use of decision issues.

MCDM/MCDA is closely related to numerous adjacent fields, including decision analysis, mathematical programming, DEA, and negotiation analysis. Furthermore, the principles and methods of MCDM/MAUT are increasingly used in other engineering disciplines and other areas of application [31]. The MCDM/MCDA method seeks to provide decision-makers with tools that effectively address decision

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issues that include many and frequently conflicting perspectives. According to Brans and Mareschal (2005), it is illogical and often unjust to judge based only on one assessment criteria, considering the diverse range of human ambitions [28]. When considering most issues, particularly those related to technology, it is essential to constantly consider factors related to technology, economics, environment, and society. Furthermore, it is impossible to assert that one choice, solution, or action is superior to another, regardless of the many perspectives from which it may have come. Hence, the use of optimization is unsuitable within the framework of MCDA [32]. Typically, a decision-maker strives to optimize a utility or value function contingent upon the criteria or qualities. Multiple attribute decision-making is choosing choices based on preferences and using probabilistic reasoning. The primary distinction between these two is that judgments are based on subjective criteria in the former, while in the latter, the decision criterion is objective. These domains have similarities formally. The decision maker selects from a collection of possibilities with distinct properties, as described by [25]. Wallenius et al. (2008) categorized decision-making approaches into two primary groups: multiple criteria discrete alternative issues and various criteria optimization problems [31]. A multi-criteria decision dilemma arises when at least two possible courses of action exist. The selection process is driven by the need to fulfill various goals, which often have contradictory ties. The goals in question are represented by linked variables, which enable the evaluation of each option depending on each objective. These objectives may also be called criteria, qualities, or dimensions [33]. There are disparities between the two groups. Discrete alternative issues are more prone to including unknown values for the characteristics or criteria than multiple criteria optimization problems [34]. In addition, some methods for addressing multiple criteria discrete issues aim to mathematically model a decision maker's utility or value function and then use these models to estimate the utilities of different options. Typically, in many criteria optimizations, there is no mathematical representation of the decision maker's utility or value function [31, 35]. Usually, specialists in MCDM/MCDA categorize approaches into three groups: (i) multi-attribute utility theory, (ii) outranking methods, and (iii) interactive methods [36]. In contrast, [37] categorizes them as follows: (i) a single-criterion synthesis method, which removes any incomparability; (ii) an outranking strategy, which acknowledges incomparability; and (iii) an approach of interactive local trial, which employs trial–error interactions.

As indicated by the literature, The techniques often used in the research are AHP, ANP, ELECTRE, GP, MAUT, MAVT, PROMETHEE, TOPSIS, and WSM. The MCDM approach is categorized into three distinct groups. [28, 38]. As shown in figure 1

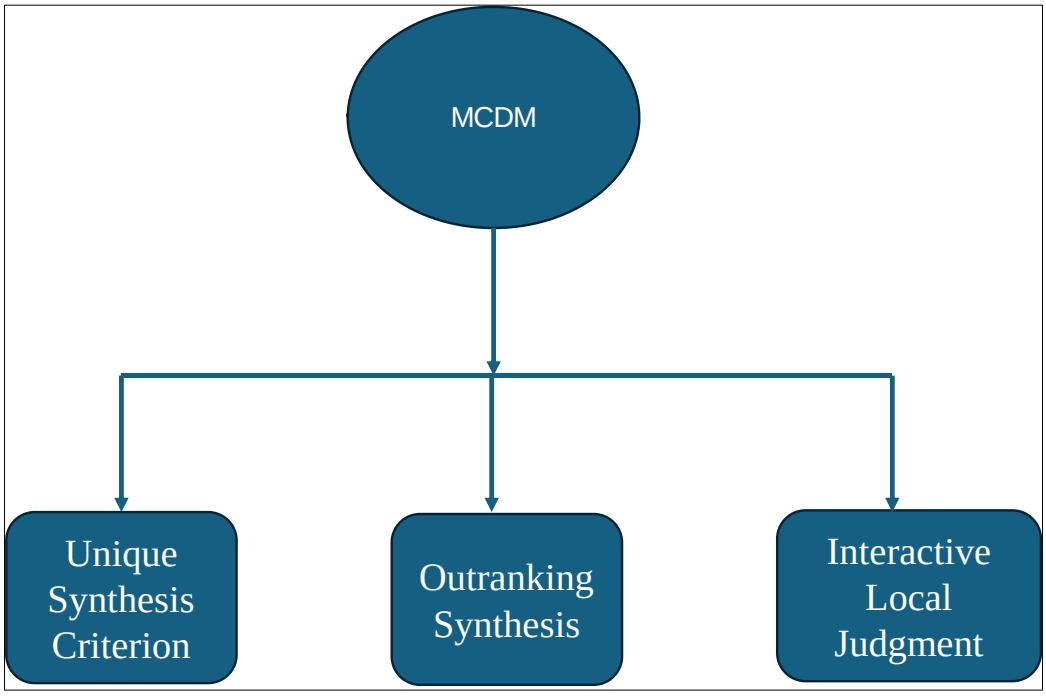

Figure 1. The MCDM Method Categories:

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MCDM approaches address intricate decision-making situations that include many, sometimes contradictory, criteria. These approaches may be roughly classified into the following categories: Multi-Attribute Decision Making (MADM) is a method used to make decisions considering many attributes or criteria. MADM approaches are designed to address situations in which alternatives are assessed using several qualities or criteria [39]One often-used approach in this category is Simple Additive Weighting (SAW), sometimes called the weighted sum model. This method involves assigning weights to each criterion and then summing the weighted values to get the best choice. The Technique for Order Preference by Similarity to Ideal Solution (TOPSIS): This approach determines the most similar solutions and the most dissimilar to the negative-ideal solution. [40-43]The Analytical Hierarchy Process (AHP) is a decision-making method. It is a systematic methodology that entails breaking down the choice issue into a hierarchical structure, evaluating the relative significance of different criteria, and comparing options pairwise. ELECTRE is a set of strategies using outranking relationships to compare options. PROMETHEE, which stands for Preference Ranking Organization Approach for Enrichment Evaluations, is an outranking approach that uses preference functions to determine the ranking of alternatives via pairwise comparisons.

Oman's Logistics Hubs and the Political Uncertainty in the Gulf

We will recognize the correlation between investment in transport infrastructure and economic growth, and we often use this relationship to support the allocation of funds for advancing the transport and logistics industry. [44]. E. Notteboom and Jean-Paul Rodrigue assert that inland distribution is vital in the globalization and maritime transportation/freight distribution paradigms [45]. The integration of logistics and network orientation in the port and marine industries has profoundly transformed the function of ports in value chains and introduced novel approaches to distributing goods. [46]. As a result, Oman is taking substantial steps to improve its logistics sector, making it a crucial part of its economy that is not dependent on oil. The decline in oil prices has forced the Gulf States, especially Oman, to explore alternative economic opportunities. Most countries in the Gulf Cooperation Council (GCC) heavily depend on oil exports, which comprise more than 80 percent of their economies in some states, as seen in Figure 2. As a result, this study used an improved iteration of the gravity trade model, first devised by Nikolaas Tinbergen in 1962, to gain a more profound understanding of past trends in Omani non-oil exports and re-exports and forecast future growth. The National Centre for Statistics and Information (NCSI) defines non-oil export and re-export as goods unrelated to oil manufactured within Oman or transported via an Omani port. The revised model assesses the influence of several parameters, including GDP, population growth, distance between ports, free trade agreements, political affiliations, and cultural resemblance, on the value of non-oil exports and re-exports with the top 35 trading partners. The study spans from 2013 until 2023. Factors such as the amount of commerce with Oman, long-established historical alliances, economic agreements, and geographical diversity determine the choice of these 35 trading partners. The improved gravity model correctly explained 60 percent of the variation in non-oil exports and re-exports across 35 trading partners. The data indicate significant correlations between the value of non-oil exports and most of the specified factors, which may be used to evaluate possible trade possibilities and future trade values. The variables that contribute the most to explaining the model are distance, FTA, the population of trade partners, and the GDP of trading partners. Distance is a crucial element in the model and has a negative influence. This shows that the farther away a nation is, the less likely it is to get non-oil items from Oman.

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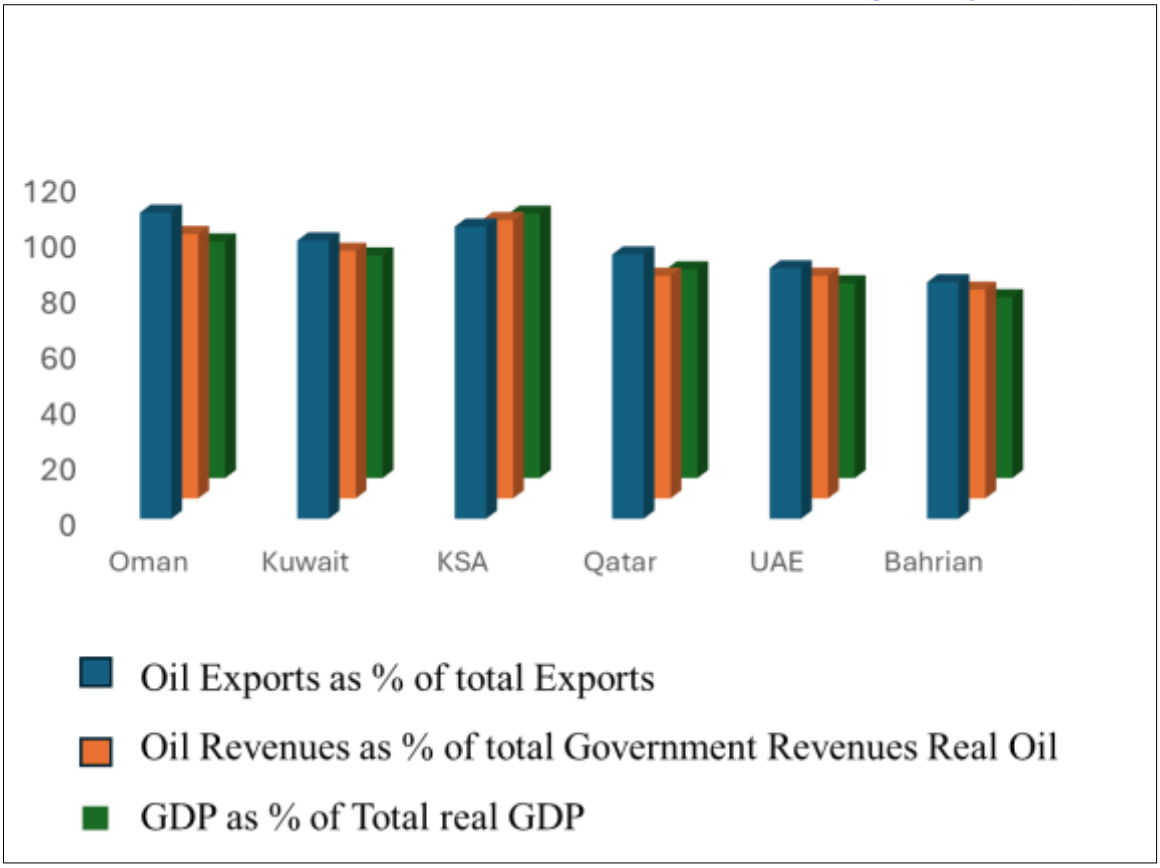

Figure 2. Percentage of Oil in The Economies of GCC Countries

The non-oil exports and re-exports experienced a significant growth of 207 percent. Significantly, a robust association exists between the rise in Oman's Gross Domestic Product (GDP) and the worth of non-oil exports and re-exports during the last ten years. [47]. The results section emphasizes the significant contribution of the non-oil sector to the country's economy. An analysis of the model reveals that Oman has the highest trade capacity with countries like India, Japan, Pakistan, Iran, USA, Egypt, Brazil, Indonesia, Turkey, France, Germany, Bahrain, Thailand, Italy, Iraq, Yemen, Kenya, Switzerland, Iceland, and Norway. Conversely, significant commercial activity has occurred in many Gulf states, such as China, Singapore, South Korea, Malaysia, South Africa, the UK, and Australia, during the last decade. Acquiring an understanding of these trends might give Oman a strategic advantage in forecasting the outcomes of future Free Trade Agreements (FTAs) with trading partners and political circumstances in the region. [47].

Recent research indicates that nations with divergent political interests engage in less commerce with each other compared to what a trade model would anticipate [48]. Research has shown that territorial disputes, conflictual political contacts, and predicted future military conflict are linked to decreased trade flows [48]. Furthermore, the projected coefficients were used to forecast the future trajectory of non-oil export and re-export growth between 2017 and 2023, considering three potential scenarios while maintaining the same trade partners. These three scenarios are selected based on their probability of occurrence. Oman's international relations determine them, as well as negotiations on Free Trade Agreements (FTAs) and the prevailing political climate in the Gulf Cooperation Council (GCC) area. The first scenario, Business as Usual, anticipates that Oman will retain the same foreign policies with all 35 trade partners without further commercial agreements until 2022. This situation reflects the positive perspective of the World Bank and the International Monetary Fund (IMF) toward the global economic recovery. The second scenario, known as The Optimistic Scenario, assumes the same financial outlook as the previous scenario but includes the signing of Free Trade Agreement (FTA) deals with China, South Korea, India, and Japan at the Gulf Cooperation Council (GCC) level, as well as with Iran and the United Kingdom on a bilateral level. The

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third scenario is the Gulf Crisis Scenario, which posits that the Gulf States would sever political and economic relations with Oman. This scenario is formulated based on the ongoing boycott of Qatar by other GCC members, which has resulted in the country's economic isolation and the severance of all logistical connections. Logistics hubs are crucial infrastructures that have the potential to significantly contribute to Oman's trade relationships beyond its reliance on oil and safeguarding the country's national interests. Examining the movement of exports and re-exports provides a more comprehensive comprehension of the geographical distribution of logistical hubs that are influenced by connection, cost, time, and political dynamics. The strategic positioning of Omani ports may be better comprehended by considering their closeness to prospective markets, manufacturing locations, population centres, multimodal connectivity, and national security.

Logistics Performance Index

Logistics proficiency requires mastery of measurement, with top-tier suppliers recognizing the importance of measuring for competitive success. However, organizations face challenges measuring logistics effectiveness for various reasons. [5]. Logistics performance includes interconnected service indicators like lead time and on-time delivery, and multiple entities, including clients, suppliers, and logistics service providers, participate in the delivery of logistics services. [49-51]. A global study on supply chain performance management in manufacturing organizations revealed that 90% of participants acknowledged the significance of supply chain performance in gaining a competitive edge. [52, 53]. Location is a crucial component in international commerce, as it enhances the movement of items, ensures security, and offers cost savings. Efficient logistics services and well-developed infrastructures significantly improve the smooth transportation of commodities across international borders. [54, 55]. Ineffective transportation and distribution processes can increase expenses, negatively impacting both nations and businesses and decreasing revenue. The estimated range for logistics expenses is between 2% and 15% of total turnover.

Research has mainly focused on trade facilitation measures that address non-tariff obstacles that might impede international commerce. [56]. In developing nations, inadequate development of these measures may lead to higher trade costs and impede the smooth flow of commodities across borders due to insufficient infrastructure, complex customs processes, and excessive bureaucracy among government agencies. The Logistics Performance Index (LPI) released by the World Bank for 150 countries can be used to evaluate trade facilitation initiatives, providing a comprehensive assessment of customs processes, logistical costs, and infrastructure quality required for land and marine transportation. [57]. Commerce facilitation is any measure to simplify and streamline international commerce between nations. However, the specific meaning of this notion may vary depending on the challenges faced in the global transportation network. Perez and Wilson (2012) contend that a precise and universally accepted definition of trade facilitation does not exist. [58]. It may be broadly described as any policy that seeks to reduce the expenses associated with trade. The connotation might change depending on the specific matter being discussed. There is no text provided. Roy and Bagai (2005) suggest a correlation between trade facilitation and transport logistics. [59], which include several interrelated components such as customs, border agencies, transport infrastructure, information technology, regulatory environment, and technical constraints on commerce. Perez and Wilson (2009, 2012) define trade facilitation as having two aspects: a tangible aspect, which involves factors like the condition of ports, roads, and information systems, and an intangible aspect, which encompasses the overall quality of the transportation sector, regulations, and the quality of goods. According to the authors, the complex dimension refers to improving transport infrastructure quality and enabling substantial logistical breakthroughs to process and distribute goods. Efficiently [58, 60].

The soft dimension, on the other hand, pertains to enhancing the quality of the transportation industry, for instance, by relaxing laws restricting new logistics providers' entrance. This approach fosters competition and decreases the logistical expenses incurred by shippers. The authors highlight that these characteristics effectively decrease transportation expenses by enhancing the quality of the transportation infrastructure and adopting institutional changes. Omar, Abdul Rahman, et al. (2018) [61] conducted a study to analyze the effectiveness of LPI in the East Coast Economic Region (ECER) [61]The researchers discovered that the secondary ports' operational and physical performance significantly impacted their overall performance. They derived this result by examining five criteria: operational, physical, shipping demand, financial, and

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workforce performance. Improving the quality of transport infrastructure speeds up the flow of products while simplifying the regulation of transport services, which helps to enhance supply in this market. Both of these standards, when implemented, lead to enhanced efficiency in the global transportation business, hence promoting international trade (Figure 3).

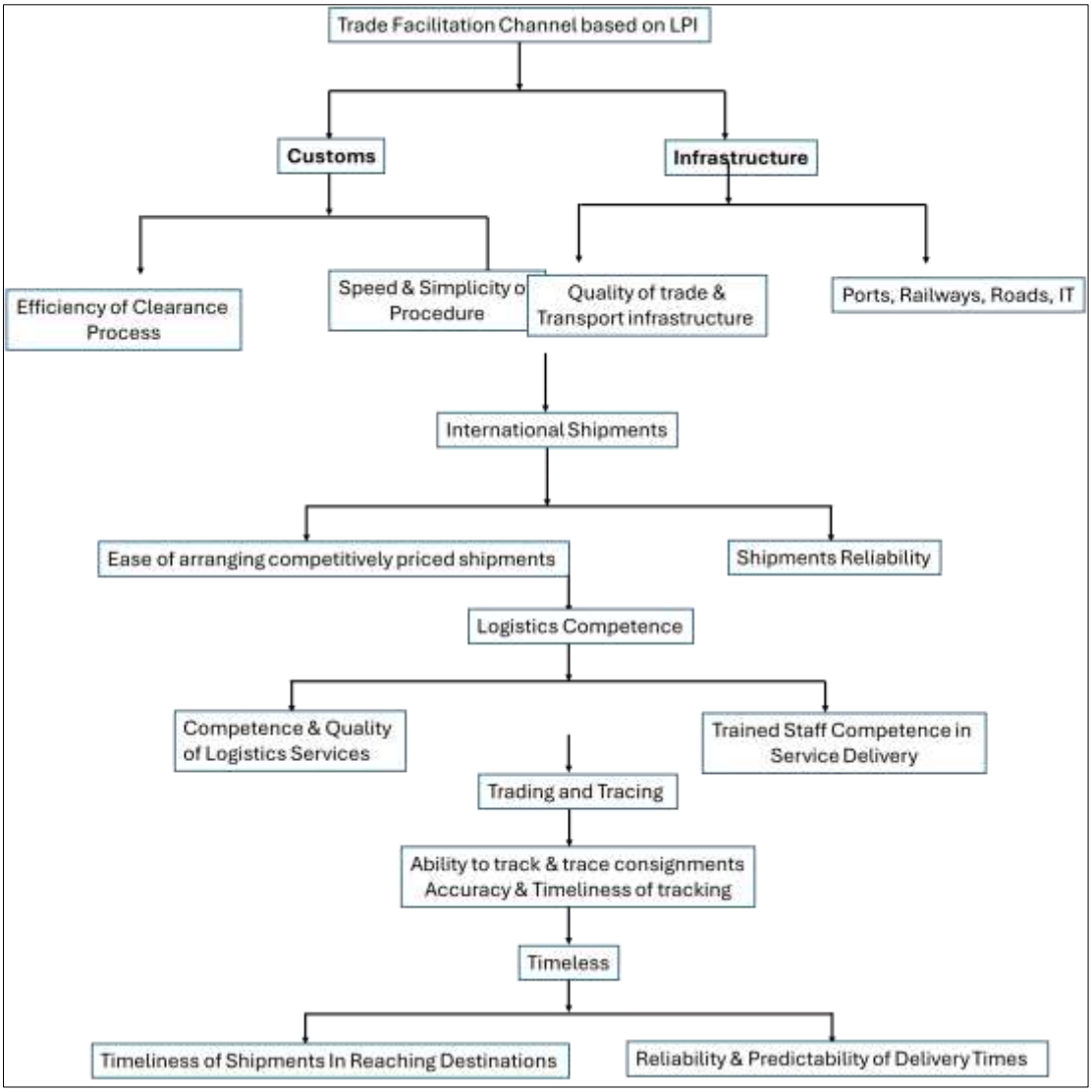

Figure 3. Flow Chart Reflects the Critical Components of Trade Facilitation in The Context of the Logistic Performance Index.

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Figure 3 illustrates the Logistic Performance Index (LPI), which assesses the effectiveness of global supply chains and identifies critical aspects of trade facilitation that might influence logistics performance. The primary avenues for trade facilitation in the LPI include. This flow chart illustrates the essential elements of trade facilitation within the Logistic Performance Index framework, emphasizing the primary channels contributing to logistics operations' overall efficiency. Efficient trade facilitation decreases the expenses and duration of trading between countries, improving the overall effectiveness of global trade logistics. As nations strive to enhance their engagement in global commerce, they prioritize enhancing logistics performance, which covers the physical infrastructure, regulations, and procedures that guarantee the efficient transportation of products and services. Trade facilitation minimizes transaction costs and trade obstacles by decreasing bureaucratic delays, streamlining customs processes, and promoting transparency. Consequently, this promotes increased levels of commerce, increases investment, and enhances economic

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activity. It encompasses several aspects, including transportation infrastructure, the quality of logistic services, the effectiveness of customs procedures, and the capability to monitor and trace shipments. A country's high logistic performance reflects its adeptness in effectively managing its supply chains, a crucial factor in facilitating solid commercial operations. Commerce facilitation is paramount in Ommar, a nation or area actively working to improve its standing in global commerce. Ommar's efforts to optimize trade procedures and enhance logistical capacities directly influence its economic environment. Including trade facilitation measures into Ommar's logistic structure is crucial to enhance the country's economic development and competitiveness in the global market. Ommar may significantly improve its logistic performance by prioritizing essential areas such as customs efficiency, infrastructure development, technology developments, and regulatory changes. This review explores the precise techniques that Ommar uses to enhance commerce and how they affect logistic performance. It offers insights into the broader ramifications of regional and global trade dynamics.

Theoretical Framework of Logistics Performance

The theoretical framework of logistics performance entails comprehending and examining the elements, procedures, and results that contribute to the efficiency and efficacy of logistics operations [62]. This paradigm incorporates diverse principles from logistics management, supply chain management, and performance measurement [63]. Logistical performance pertains to effectiveness and efficiency in executing logistical tasks. Logistics performance is evaluated using a range of measures and KPIs (Key Performance Indicators) that assess the efficiency of logistics systems in delivering the correct product at the proper location, at the correct time, in the correct condition, and at the correct cost [64]. The input elements included in human resources are crucial components of logistic performance. Proficiencies and capabilities of logistics people [1, 65, 66]. Technology encompasses many digital technologies, such as information systems, transportation management systems (TMS), and warehousing management systems (WMS) [67-69]. Infrastructure refers to the physical structures and systems that support goods storage, transportation, and processing [70]. This includes warehousing facilities, transportation networks, and the necessary equipment. Financial Resources: The amount of money set aside expressly to carry out logistical tasks, including budgeting and capital allocation. Additionally, logistics activities include transportation, which refers to transferring commodities from one place to another. Warehousing refers to the act of storing commodities until they are required. Inventory Management: Ensuring the maintenance of ideal inventory levels, order fulfillment involves processing and delivering client orders. Materials handling refers to the transportation of products inside a warehouse or facility. Packaging refers to the process of safeguarding products throughout their transit and storage. The performance outcomes: The following are the outcomes of logistics operations, usually assessed using Key Performance Indicators (KPIs), as Delivery Performance refers to the punctuality and precision of delivery. Cost Performance refers to the effectiveness of managing costs, while Flexibility refers to the capacity to adapt to changes in demand or supply situations. Quality refers to the state of products at the time of delivery, whereas customer satisfaction is the level of service consumers perceive.

The SCOR Model, sometimes called the Supply Chain Operations Reference Model, provides a well-organized framework for evaluating and improving the efficiency and effectiveness of supply chain activities [71]. The framework has five primary processes: Plan, Source, Make, Deliver, and Return. The focus on logistics performance is on the delivery and return processes. The Balanced Scorecard is a strategic planning and management methodology used to align a corporation's operational activities with the organization's overarching vision and strategy [72]. Logistics uses this approach to convert logistics plans into practical terms and evaluate performance across four dimensions: Financial, Customer, Internal Processes, and Learning and Growth. The Resource-Based View (RBV) is a theoretical framework that focuses on a firm's internal resources and capabilities as the primary sources of competitive advantage [73]. This theoretical framework emphasizes a company's internal assets and competencies as the primary drivers of its competitive edge [74-76]. Logistical focuses on using distinctive logistical resources and skills to enhance performance. The logistics performance theoretical framework encompasses several disciplines and aims to comprehend logistics operations' inputs, processes, and consequences [77]. Organizations may boost their logistics performance, improve operational efficiency, increase customer happiness, and enhance

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overall competitiveness using the SCOR model, balanced scorecard, and RBV [78]. Efficient evaluation and control of logistics performance are crucial for attaining these objectives, notwithstanding the difficulties presented by intricate supply chains and fluctuating market circumstances.

After selecting key indicators, the next stage is to manage the goal. Internal and external benchmarks should address the issue of double standards and discrepancies in assessing the performance of firms with different roles. The 2019 framework, created by [62], illustrates and explains the connections between factors influencing performance and the resulting performance outcomes. We created this approach to help system stakeholders effectively manage performance indicators that may conflict with each other. [62]Therefore, we will use the "variable linkage" performance attribute from the KB-PMS framework to illustrate the causal relationships among the variables. The new framework proposes using statistical tools, such as correlation and regression analyses, structural equation modeling, and pairwise comparison methods like DEMATEL and ANP, to depict the connection between variables.

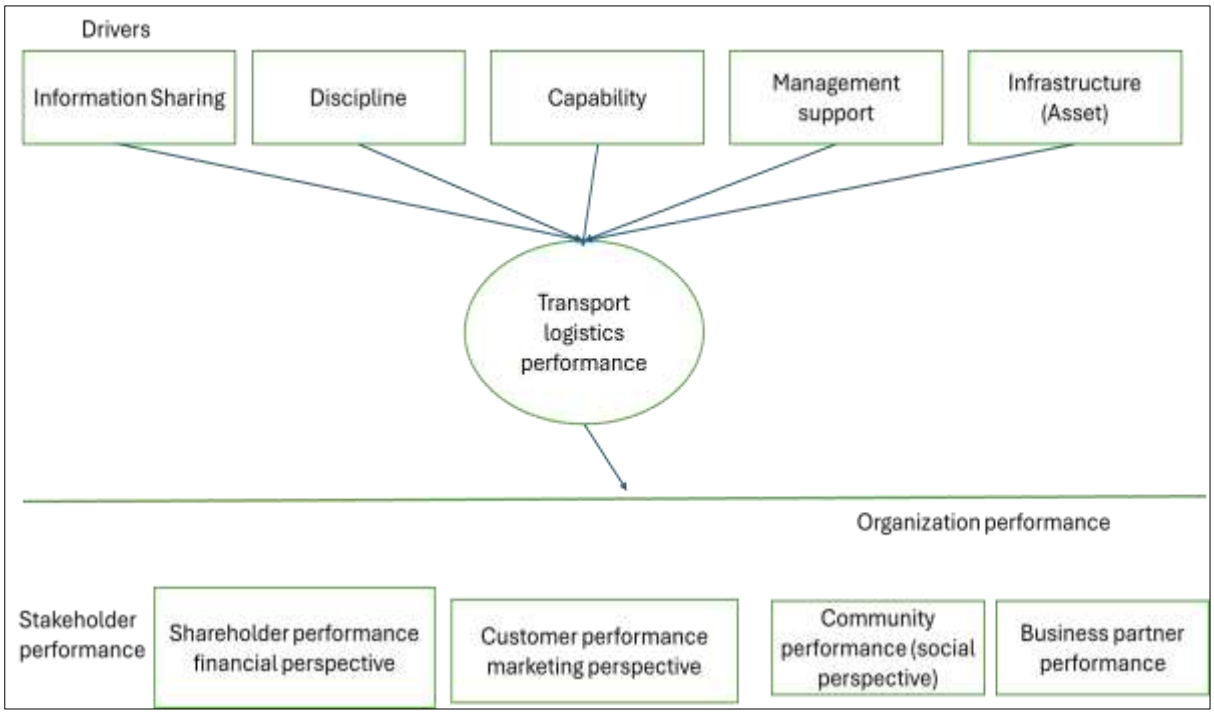

Figure 4. The Conceptual Link Between Performance Dimensions

Figure 4 depicts the conceptual correlation among the performance parameters of transport logistics systems in enterprises that serve numerous roles. The new approach proposes using an aggregated index to assess the system's overall performance, in addition to identifying causal linkages between variables. The overall performance index is constructed by determining the components of the index and their respective weights, formulating the index equation, and computing and standardizing the index. Once the components and indicator weights have been gathered, the subsequent stage in the index construction process is computing the overall performance index for transport logistics. This index has three distinct components: (1). weight of performance perspective (W_p), (2). weight of performance measures (W_m) and (3). performance score at the measure (W_s).

Diversification of Economy in Oman

Most of Oman's export earnings 62.7% of total exports and 51% of GDP—have come from the country's oil and gas reserves. 1 Still, exports dropped by more than $300 billion in 2015, or 21% of the Gulf's GDP, due to falling oil prices [46]. Oman ranks seventh in the Middle East and twenty-first globally for known oil reserves, with 5.5 billion barrels. Nevertheless, better oil recovery techniques have increased its output.

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[79]. However, the government of Oman is determined to lessen the country's reliance on oil exports; in fact, it has set an ambitious target of reducing this sector's contribution to GDP from 37.2% to 9% by 2020. To wean itself off of its reliance on oil and gas, Oman started Tanfeedh, a national program to encourage economic diversification, on September 18, 2016. The 9th Five-Year Development Plan (2016–2020) includes the national program Tanfeedh. Launched with Malaysia's Performance Management and Delivery Unit (PEMANDU), it will expand upon prior plans' achievements in a few targeted areas. [79]. The Royal Decree (1/2016) includes the manufacturing, tourism, transportation, logistics, mining, and fishing sectors. The project's goals include increased investment in critical sectors, increased job opportunities, and a more significant share of the Sultanate's GDP [47].

In a prompt reaction, the government established a national committee in 2016 called Tanfeedh, an acronym for the National Program for Enhancing Economic Diversification. Tanfeedh has determined that the government can generate fresh revenue by developing tourism and logistics sectors [47]. Consequently, The Ministry of Transportation was required to establish the Sultanate of Oman Logistics Strategy 2040 (SOLS 2040). To implement this strategy, the ministry established Oman Global Logistics Company (OGL) or ASYAD to execute the plan and transfer the control of logistics hubs (ports, dry ports, warehouses) and logistics operators (Oman Rail, National Ferries Company, Oman Shipping Company) to OGL (Ithraa, 2016, pp. 2–19) [46]. Concurrently, the Supreme Council for Planning (SCP) is proactively examining various projects inside the country and striving to provide a comprehensive overview of the anticipated changes nationally (National Spatial Strategy in Oman, N.A.). The Oman National Spatial Strategy Project (ONSS) refers to this extensive endeavor. This initiative aims to identify and address all aspects of national development, including socio-economic challenges often overlooked by conventional master plans [80]. A crucial element of the ONSS project is the assessment of regional connectivity and logistics to analyze the present state of the transportation and logistics industries in terms of their performance, efficiency, connection, and competitiveness [81]. Moreover, Oman's strategic position is situated amid crucial transportation routes connecting the Eastern and Western regions, Asia, and Africa (see Figure 5). The government is leveraging Oman's nautical heritage, which is a prominent Asian commercial center and a crucial node on the old Silk Road [82]. The political instability hinders the current attempt to revive the situation since Gulf nations such as the United Arab Emirates (UAE), Saudi Arabia, and Bahrain have severed their commercial connections with Qatar [83].

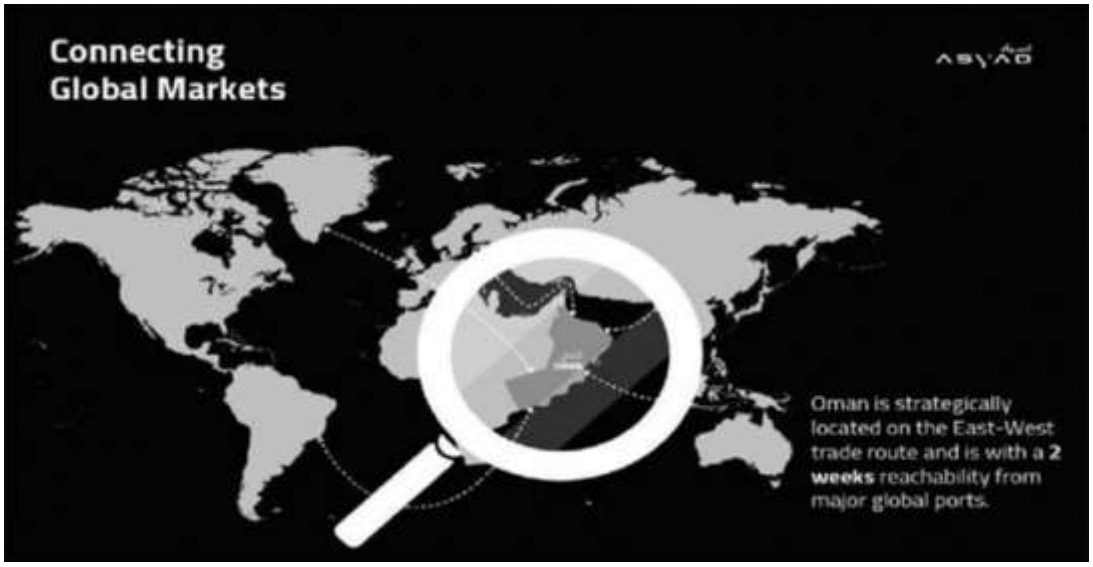

Figure 5. The Strategic location Map in Oman's (ASYAD group)

This political incident substantially affects the establishment of a self-sufficient logistical system in an emergency. Qatar is now experiencing the repercussions of depending too much on Dubai as the area's central logistics center [84]. As a result, Qatar cannot meet its own logistical needs independently, which is crucial for a strong economy. For this study, we will primarily focus on ports when defining logistics hubs

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due to the limited availability of airport data and their relatively little contribution to the present national logistics system. In addition, airports operate autonomously and are not included in the SOLS 2040 plan or ASYAD. In the following years, the nation will unveil the revised framework for airport services and its strategic plan, which may be examined in future studies. Similarly, Oman depends on Dubai for the transportation and transfer of products and services to meet the needs of local enterprises. In 2017, the UAE accounted for 24 percent of Oman's non-oil export and re-export globally, as reported by the NCSI. Regrettably, Oman is still falling behind the UAE in terms of offering cost-effective logistic services, which prompts Omani firms to rely on Dubai for their export and import needs [46]. As a reaction, the government is making a determined effort to construct a self-sufficient logistics system that can serve the local market and compete with the UAE's dominant position as the only logistical center in the area [15]. This essay analyzes the possible connection between the ongoing political instability in the Gulf area and the strategic location of logistics hubs in Oman. It will specifically focus on the recent political developments among the GCC States [85]. The modified version of the gravity model analyzes potential variables that might influence ports' non-oil export and re-export operations. This analysis will allow us to predict future export values based on three primary scenarios. I anticipate our ability to comprehend the political impact on the placement of logistics facilities in Oman and how these political and strategic choices might eclipse the economic viability of establishing a logistics hub in a particular area. However, comprehending the political aspects may enhance our comprehension of present logistics placements and the future growth of the nation's logistics business. Oman's pursuit of economic diversification is complex and ambitious. Implementing Vision 2040, in conjunction with focused policies in critical sectors, aims to decrease reliance on oil, bolster economic adaptability, and guarantee sustainable growth. Oman is establishing the groundwork for a diverse economy built on knowledge by investing in human resources, fostering innovation, and attracting international investment. The efficacy of these endeavors will hinge upon the efficient execution of policies, cooperation between the public and private spheres, and the capacity to adjust to global economic fluctuations. Oman is dedicated to constructing a bright and sustainable future for its people as it pursues diversification.

Prospects in Oman's Supplies and Logistics Industry

Several studies examine Oman's logistics and supply chain services, including Oman's potential as a future logistics center (Ba-Awain et al., 2018) and the integration of Oman ports into global supply networks [86]. The study conducted by Stalinska (2014) examines the supply chain practices in Oman. Taderera (2018) analyzes the supply chain network [87], while Al-Harrasi (2017) [88] focuses on modeling the same network. Currently, there is a lack of studies that have identified Oman's specific possibilities and problems as the primary factor in improving logistics and supply chain performance to accomplish and enhance economic diversification. In addition, the concerns and difficulties about Oman's logistics and supply chain industry have not yet been sufficiently resolved. Hakro (2016) asserts that the Oman economy is at risk in the future owing to the negative impact of energy sector circumstances, including decreased production capacity, increased production costs, and volatile oil prices [89]. Under the Oman 2020 vision, the government of Oman embarked on a diversification strategy to establish a robust economy that is not reliant on natural resources. According to Çelebib (2016) [90], the current transformation of the global economy presents a more challenging situation that requires careful analysis and action. In addition to this assertion, several nations in the developing world, particularly those in the Gulf region, have economic challenges. Oman should reduce its reliance on logistics and supply chains, agriculture, tourism, and disruptive industries to enhance revenue streams. Tanfeedh (2017) [91] is anticipated to impact the country's economy substantially. This is corroborated by Stalinska (2014) [92], who said that Oman had economic difficulties and pressures exacerbated by a lack of financial resources. The government underwent a program focused on implementing substantial economic structure changes. This represents a significant transition from countries that rely heavily on oil to more diversified economies, with increased savings and investment levels and an emphasis on identifying suitable sources of national revenue. However, in recent years, global commerce has transformed and necessitates a strong linkage with international activities. Furthermore, the anticipated impact of logistics and supply chain has not been well defined. Furthermore, the current study indicates a significant correlation and impact between logistics and supply chains and several sectors, such as transportation, infrastructure, and communication. This is supported by Çelebib

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(2016) [90], who asserts that global commerce is seeing a fast transformation due to the division of production processes and the incorporation of developing economies. The researcher anticipates assessing the logistics and supply chain industry prospects to enhance the national economy. The next step is to ascertain the degree of the issues in that area. In addition, it can improve the efficiency of logistics and supply chain operations. Prior research on Oman's logistics and supply chain industry, such as the studies "Oman as a future logistics hub" by [86] and "Integrate Oman ports into global Supply Chains" by [92], acknowledge the significance of Oman's geographic position. However, a lack of research explicitly aims to optimize the site to promote logistics and supply chain performance, bolstering the national economy.

Economists widely anticipate that Oman will be prominent in the logistics and supply chain industry in the following years. This is primarily due to the development of integrated infrastructure in critical sectors. As a result, the government has made significant expenditures in this area. A study conducted by [93] said that the logistics and supply chain industry has become a crucial component of commerce by actively participating in its growth. The government allocates a substantial number of Omani Riyals to enhance and streamline the logistics and supply chain industry to achieve the goal of diversification and stimulate Oman's economy. In addition, Oman maintained strong international economic contacts [92] and trade agreements with major global economies. Therefore, it may enable Oman to progress in the logistics and supply chain industry. Table 1 provides the means to examine and evaluate different possibilities in the following manner:

Table 1. Opportunities in the Logistics Sector in the Sultanate of Oman Are Now Available for Application

Opportunity	Definition	Reference
Port Development and Management	Investing in the expansion of port facilities, improving current infrastructure, and incorporating innovative technology may enhance port efficiency and capacity. Salalah, Sohar, and Duqm, which are essential ports, have the potential to be expanded to accommodate more significant amounts of cargo. This expansion would make them more attractive to international shipping companies and increase transshipment operations.	[93] [94]
Warehousing and Distribution Centers	There is an increasing need for expensive, contemporary warehouses equipped with automation and intelligent technology to manage inventories. These facilities provide additional services that enhance the value of products, such as packing, labeling, assembly, and order fulfillment. They appeal to various businesses, including retail, manufacturing, and medicines.	[95], [96]
Cold Chain Logistics	Investing in temperature-controlled storage and transportation infrastructure helps guarantee the secure and effective management of perishable goods. This encompasses chilled storage facilities, vehicles, and sophisticated surveillance systems that maintain the necessary temperatures throughout the distribution process.	[97], [13]
Technology and Automation	The use of technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain has the potential to transform supply chain management completely. These technologies provide real-time data monitoring, predictive analysis, and the execution of secure transactions, resulting in enhanced decision-	[98], [99]

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	making, decreased expenses, and heightened transparency.	
Last-Mile Delivery Services	Adopting cutting-edge delivery methods, such as drone deliveries, autonomous cars, and crowd-sourced delivery networks, may enhance the efficiency and dependability of last-mile logistics. Solutions that improve customer experiences, such as real-time tracking and flexible delivery alternatives, are also highly needed.	[100], [101]
Freight and Cargo Services	Creating multimodal transport solutions that include air, sea, and land freight services may improve connections and decrease transit times. Investing in state-of-the-art fleets, cutting-edge tracking systems, and highly efficient logistics networks may make Oman's freight services more appealing to companies.	[101], [102]
Logistics Education and Training	Creating dedicated institutions and training programs targeting logistics and supply chain management may give people the essential skills required in this field. Engaging in partnerships with multinational logistics businesses and academic institutions helps guarantee that the training programs adhere to global standards and industry demands.	[86], [103]
Sustainable and Green Logistics	Allocating resources to environmentally friendly technology, such as electric cars, warehouses powered by renewable energy, and sustainable packaging materials, can potentially decrease the ecological footprint of logistics operations. Strategies such as route optimization and waste reduction may further enhance sustainability initiatives.	[104], [105]
Customs Brokerage and Clearance Services	Implementing measures to simplify customs processes, integrating digital solutions for paperwork and compliance, and enhancing collaboration with government agencies may effectively decrease the time and expenses associated with clearance. Offering value-added services, such as consultation and assistance with regulatory compliance, might incentivize more enterprises to use these services.	[87], [106]
Special Economic Zones (SEZs) and Free Zones.	Providing incentives like tax exemptions, streamlined regulations, and infrastructural assistance in special economic zones (SEZs) and free zones may entice enterprises to establish logistics and manufacturing facilities. These zones may function as central points for enterprises focused on exporting goods, taking advantage of Oman's advantageous position and trade agreements.	[80], [107]

This assessment presents solutions, economic prospects for the logistics industry in Oman, and the potential for technological advancements. These possibilities should be carefully considered. Oman's strategic geographical location at the intersection of critical international shipping routes presents it as a

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promising candidate for becoming a logistics center. Oman can strengthen its position in the global supply chain by capitalizing on its proximity to the Strait of Hormuz, through which a substantial amount of the world's oil transportation occurs. Oman can enhance its ability to attract international shipping firms and promote transshipment operations by investing in port infrastructure and logistics services. Investments in infrastructure, including in ports, airports, and road networks, are essential. The Port of Salalah, Port of Sohar, and Duqm Port have substantial opportunities for growth and upgrading. Improving these ports' advanced facilities and efficient cargo handling systems would enhance their competitiveness. In addition, establishing logistics parks and free zones in proximity to these ports has the potential to attract international logistics enterprises, therefore fostering an atmosphere favorable for supply chain operations. Emerging technologies like blockchain, the Internet of Things (IoT), and artificial intelligence (AI) potentially transform Oman's logistics business completely. Blockchain technology may provide transparency and security in supply chain transactions, minimizing fraud and mistakes. IoT may enhance the real-time tracking of items, improving inventory management and minimizing losses. Artificial intelligence (AI) can enhance route planning and demand forecasting, reducing costs and enhancing operational efficiency.

Oman has the potential to expand its logistics services beyond the conventional practices of shipping and storage. Creating value-added services such as cold chain logistics, specialized storage, and e-commerce fulfillment centers may meet the needs of many sectors, including medicines, agriculture, and retail. This diversification strategy will appeal to a broader spectrum of clients and enhance the sources of income. Enacting beneficial policies and regulatory changes may strengthen investor confidence and facilitate corporate operations. Implementing streamlined customs processes, lowering tariffs, and offering incentives for foreign investments may effectively entice global logistics businesses. Creating public-private partnerships (PPPs) may also enhance infrastructure development and improve operational efficiency. The expansion of the logistics business relies heavily on the strategic allocation of resources towards the development of human capital. Training and enhancing employees' skills in logistics management, supply chain analytics, and technology adoption will guarantee a reservoir of proficient specialists. Engaging in partnerships with educational institutions to provide specialized courses and certifications may effectively augment the sector's talent pool. Establishing strategic alliances with neighboring nations and global logistics firms may improve Oman's connectivity and expand its market presence. Engaging in regional trade agreements and efforts, like the Belt and Road Initiative (BRI), may provide access to fresh trade routes and investment prospects. Engaging in partnerships with international logistics companies may provide access to specialized knowledge, advanced technology, and industry-leading methods. Implementing sustainable practices in logistics has the potential to appeal to environmentally aware organizations and consumers. Allocating resources towards renewable energy sources, electric cars, and green logistical infrastructure has the potential to decrease the industry's carbon footprint. Adopting environmentally friendly procedures may also conform to global sustainability standards and improve Oman's standing as a green logistics center. Ultimately, Oman can tap into substantial economic opportunities in the supply and logistics sector by using its advantageous geographical position, making significant investments in infrastructure and technology, expanding its range of services, and enacting favorable legislation. These measures will improve the country's logistical skills and contribute to general economic development and diversification.

Global Perspectives on Logistics Performance

Global supply chain management encompasses the transportation of commodities across borders and the coordination of worldwide logistics and operations management by companies and their executives [108, 109]. The expenses associated with cross-border logistics continue to be substantial [110] due to spatial disparities and geographical obstacles that hinder the movement of goods [17]. Evaluating the efficiency of national logistics systems is crucial for companies when deciding where to locate their global supply chains. This is why there is a need to assess the performance of country logistics systems for operations management decision-making [111, 112]. Prior research indicates that the logistical capacities of a nation influence how enterprises manage their supply chains and choose where to locate their global supply chains [113]. Regarding the literature on the evaluation of national logistics systems, a limited, although growing,

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body of literature has evolved in the last twenty years. Mainstream literature considers evaluating a country's logistics performance as a consistent and foreseeable process. It involves regularly updating a predefined set of quantitative measures related to trade facilitation, which allows for comparing and measuring progress over time between different countries [114, 115]. This is a sort of performance evaluation that aims to operate inside existing definitions and a predetermined framework for measuring performance. However, its drawback is that it is less flexible in addressing particular decision-making scenarios. The Logistics Performance Index (LPI) by the World Bank is a well-recognized and practical instrument used to assess nations' performance in the logistics field. It is specifically designed for policymakers and is readily accessible [116]. Due to its narrow policy focus, restricted range of performance measures, and lack of industry and business-specific information, the current approach is inadequate for addressing the intricate nature of global supply chain decisions that necessitate a more thorough analysis of capabilities and institutions. Complex cross-border manufacturing and commerce operations need performance management systems rich in information. Logistics frictions may cause supply chain complexity; hence, creative techniques that use information technology (IT) are required to effectively manage global supply chains [117]. The complexity of decision-making in global supply chains is influenced by both environmental and information factors [117]. Upgrading the information system, such as incorporating more advanced communication media [118], is a viable option to alleviate the difficulties of managing this complexity [108]. An untapped opportunity lies in utilizing the wealth of information in rich communication media, such as country reports, wikis, and other unstructured textual significant data sources that contain country logistics assessments. This information can be leveraged for performance assessment and benchmarking purposes. This existing information may serve as a powerful and flexible addition to other methods of assessing national logistics found in the literature. This will enhance the support for global and local decision-making. According to [119], it has been argued that the capacity of software to evaluate text is somewhat restricted. The primary obstacle is in deciphering significance [120]. However, new advancements and prospects in big data and predictive analytics may facilitate the formulation of such a methodology [121].

Logistics management encompasses the strategic coordination and oversight of the movement, storage, and retrieval of commodities, services, and associated information from their source to their destination [110, 122-124]. The shipping, warehousing, packing, materials handling, and inventory management expenses may account for around 10 to 25 percent of a company's worldwide sales costs [125]. A country's logistics efficiency is of utmost importance since it directly affects the expenses incurred in cross-border activities, such as time and distance costs. To effectively manage these costs, it is necessary to establish public-private partnerships [126-128]. Trade facilitation provides a macroeconomic viewpoint on how policymakers may effectively and beneficially impact the capacities of global supply chains and firms' operations. Implementing policy changes at the national level may result in substantial improvements in enhancing supply chain capabilities. The logistics performance of a country is strongly linked to its logistics capability, which refers to the country's ability to offer modern, dependable, and well-developed infrastructures, a business-friendly atmosphere, top-notch logistic services, and trade facilitation to meet the current business requirements for efficient transportation of raw materials to manufacturers and finished products to end consumers [128]. There is a lack of research on the significance of country logistics performance. However, evaluating and comparing the performance of national logistics systems may be necessary when choosing where to locate global supply chain operations, such as warehouse sites. Nevertheless, academic research has not adequately established a connection between country logistics performance evaluation, management decision-making, and normative assessments. This research gap hinders the ability to present national logistics assessments from a global supply chain decision-making perspective.

The Primary Analytical Method for Evaluating the Logistics Performance of Countries in Global Supply Chains

There are several methods for evaluating the success of a country's logistics, which vary based on how each one understands the differences in logistics costs across different areas [117]. The most widely accepted approaches are those presented within the economics and trade facilitation framework. We specifically concentrate on these approaches since they have been advocated in the context of global supply chains

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[129]. In economics and trade facilitation, it is often believed that differences in geographical location are caused by the distribution of resources within a country and the trading patterns between nations. For example, the widespread use of the gravity model [130] represents the acceptance of this viewpoint in academic literature [17, 131]. The performance assessments are derived from either existing quantitative data that are easily accessible [132] or logistics managers' opinions regarding trade facilitation performance at the country level [133]. An often-encountered constraint in the existing body of literature is the absence of discussion on organizational objectives, the intricacy of decision-making, and the significance of information in global supply chains and performance evaluation. [134] argue that there is a need for a more comprehensive knowledge of the spatial impedance variables and metrics necessary for decision-maker complexity in logistics systems. One notable example is the Logistics Performance Index (LPI), which has been regularly assessing the logistics performance of nations every two years since 2007. It is perhaps the most significant instrument that has emerged from the trade facilitation framework. The primary subject of this study is international trade logistics. It assesses the level of connectedness in logistics across nations based on six performance dimensions: customs, infrastructure, tracking and tracing, ease of international shipments, logistics service quality, and timeliness. Despite significant advancements since its establishment, the predominant emphasis on public policy [116] and limited use in industry [135] makes it inadequate for evaluating the complexity of global supply chains. One of the flaws of the LPI is that it treats and assigns equal importance to the input and output performance categories and dimensions. This is very unlikely considering national logistics systems' geographical and complicated nature [9, 136]. Furthermore, global supply chain management encompasses more than transporting products from one port to another. When evaluating the effectiveness of a country's logistics, it is essential to include many additional distances relevant to global supply chains, as highlighted by [127, 137].

Furthermore, evaluating the complexity of global supply chains necessitates increasingly advanced communication methods and real-time systems. [118]Lastly, the LPI is flawed due to its excessive dependence on "soft data" and limited range of transport and information infrastructure performance measures. To obtain a more comprehensive evaluation, a more thorough assessment of logistics capabilities, focusing on the complexities of global supply chain operations, is necessary.

An Evaluation Framework for Assessing the Logistical Performance of Countries

Assessing a country's logistics performance involves evaluating various components that contribute to the efficiency and effectiveness of its logistics and supply chain operations. Here, I'll illustrate a constructive framework for logistics performance assessment focusing on Oman. Oman has made significant investments in improving its transportation infrastructure. The Port of Salalah, Port Sultan Qaboos, and Sohar Port are critical maritime hubs. [108]. The country also boasts well-developed road networks and an expanding network of airports. Oman's logistics performance can be assessed effectively using the above framework, which covers all critical aspects of logistics operations. By continuously improving these areas, Oman can enhance its logistics capabilities, thereby improving its position in global trade and commerce. In the context of Oman, the framework highlights elements such as critical ports, logistics hubs like Khazaen Economic City and Salalah Free Zone, the adoption of electronic customs systems, and international and local logistics companies. It also emphasizes the importance of regulatory policies, market competitiveness, skill development, and technological innovation to enhance logistics performance. [108].

The efficiency and effectiveness of a country's logistics system are crucial for its economic performance, international trade, and overall competitiveness. A robust evaluation framework must consider multiple dimensions and indicators that reflect the complexity of logistics. This framework aims to provide a holistic assessment, helping policymakers, businesses, and researchers identify strengths, weaknesses, and areas for improvement. The framework evaluates logistical performance across six key dimensions: Infrastructure, Technology, Regulatory Environment, Human Capital, Operational Efficiency, and Sustainability. Each dimension comprises several indicators that provide a comprehensive view of a country's logistics performance. Each indicator is assigned a weight based on its relative importance within its dimension. Countries are scored on a scale (e.g., 0 to 100) for each indicator, and weighted scores are aggregated to produce an overall score for each dimension. The final logistical performance score is a composite of these dimension scores. Benchmarking involves comparing scores across countries to identify best practices and

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improvement areas. Clustering countries with similar logistical profiles can help tailor recommendations and policy interventions [138].

To contextualize the framework, detailed case studies of high-performing countries can illustrate successful strategies and innovations (Figure 6). These case studies should highlight (1) Effective infrastructure development projects, (2) Technological advancements and their impacts, (3) Regulatory reforms that facilitated logistical efficiency, (4) Workforce development programs, and (5) Sustainability initiatives in logistics.

A comprehensive evaluation framework for assessing countries' logistical performance provides a valuable tool for identifying strengths and weaknesses in logistics systems. By analyzing multiple dimensions and indicators, stakeholders can gain insights into the factors driving logistical efficiency and effectiveness. This framework supports evidence-based decision-making, helping countries enhance their logistical capabilities, improve competitiveness, and foster sustainable development.

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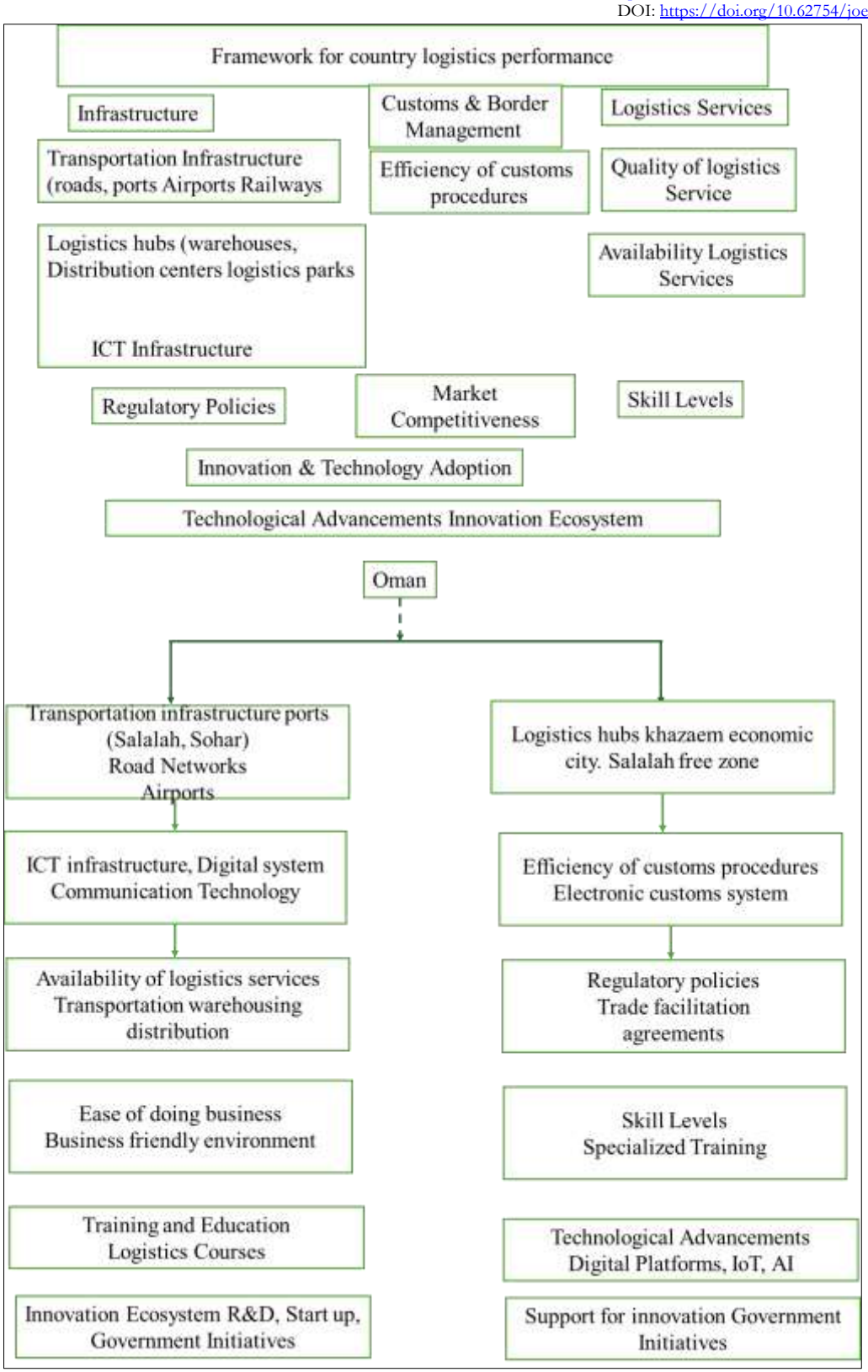

Figure 6. Suggested Logistics performance framework for Country (Oman)

Figure 6 illustrates a framework for an alternative big data strategy to analyze a nation's logistics performance. This technique is designed to help manage the complexity of decision-making in global supply chains. [139]. The many categories of prominent criteria and information measurements that evaluate a

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country's logistics performance in global supply chain complexity have previously been established. [117]We use these aspects and refer to them as performance measurement categories and metrics, which we combine with automated big data solutions. These strategies can extract metrics for performance evaluation and classify and rank depending on the retrieved information. The measurements are found, retrieved, and classed for several nations. The design artifact for performance evaluation is constructed and trained using a combination of text mining methods and mentioned data sources.

The Primary Factors Influencing Logistic Performance on A Worldwide Scale

Logistics is a field that involves the strategic management of the smooth and productive movement and storage of products, services, and associated information from where they are produced to where they are consumed to satisfy consumer needs. [140]The dynamic character of logistics arises from its integrative function in overseeing the supply chain, which includes diverse operations like transportation, storage, inventory management, and information dissemination. [140]. Throughout history, logistics has progressed from basic commerce and military uses to a sophisticated, technology-oriented discipline crucial for contemporary commercial activities. Ballou (2007) states that logistics as a commercial function emerged in the 1950s and 1960s due to the introduction of containerization. [141]This innovation greatly enhanced the efficiency of shipping products. In the following years, information technology was incorporated, further altering logistics into a crucial strategic role necessary for gaining a competitive edge. [142].

Transportation is a fundamental element of logistics, and it includes several modes, including road, rail, air, and sea. Factors such as cost, speed, dependability, and the characteristics of the commodities being carried impact the selection of the transportation method [143]. Progress in transportation technology, such as self-driving cars and uncrewed aerial vehicles, is transforming the field of logistics by enhancing productivity and decreasing expenses [144]. Warehousing encompasses storing items and is crucial in guaranteeing a consistent flow of products. Contemporary methods of storing goods prioritize using automation and technological tools to manage inventories, resulting in enhanced precision and decreased operating expenses [145]. Efficient inventory management involves balancing satisfying consumer demand and minimizing inventory costs. Methods such as Just-in-Time (JIT) and Economic Order Quantity (EOQ) models are often used to enhance inventory management [146]. Efficient information flow is essential in logistics as it guarantees effective coordination across the supply chain. Enterprise Resource Planning (ERP) systems, Radio-Frequency Identification (RFID), and blockchain technologies improve transparency, traceability, and communication among supply chain stakeholders [147].

The quality of infrastructure, which includes transportation networks, ports, and storage facilities, has a substantial influence on logistics performance. Inadequate infrastructure might prolong timelines, escalate expenses, and diminish dependability. [148]Technological progress enhances effectiveness and fosters creativity in logistics. Utilizing digital technologies like the Internet of Things (IoT), Artificial Intelligence (AI), and big data analytics allows for the immediate monitoring, proactive maintenance, and enhancement of logistics operations. [149].

The presence and proficiency of the workforce are vital for logistical operations. A proficient workforce can enhance efficiency and guarantee the seamless operation of logistical operations. Nevertheless, the business faces difficulties due to scarce workers and the need for specific expertise. [150]. Education and training programs targeting logistics and supply chain management are crucial for cultivating a skilled workforce. Academic institutions that provide courses linked to logistics have a significant role in enhancing the industry's collective knowledge and ability for innovation. [151]. Institutional variables, such as corruption and political stability, substantially impact logistics success. Corruption has the potential to result in higher expenses and time delays, while political instability may interrupt supply chains and generate unpredictability. [152]. Logistics performance is significantly influenced by corruption and political stability. Corruption, which refers to the misuse of authorized authority for personal benefit, may appear in several guises, including bribery, embezzlement, and fraud. According to [153], it raises the expenses associated with transactions, leads to inefficiencies, and erodes confidence in institutions. Political stability fosters a favorable atmosphere for economic endeavors, such as logistics. Stable political environments can attract

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investments, facilitate the development of infrastructure, and guarantee the presence of consistent regulatory frameworks. [154].

The foundation of this research is based on the idea that logistics performance is affected by a blend of infrastructure, technology, labor, education, and institutional quality. The framework incorporates these aspects to provide a thorough comprehension of their interplay and impact on logistics efficiency and effectiveness. It is postulated that the quality of infrastructure directly influences logistical performance. Efficient transportation networks, ports, and storage facilities enhance the seamless movement of commodities and save operating expenses. Technological developments are anticipated to bolster logistics performance by improving efficiency, precision, and communication. By using digital tools and systems, logistics operations may be tracked and optimized in real time. Efficient logistics operations rely heavily on the presence of a sufficient number of highly qualified workers. Adept personnel guarantee the seamless implementation of logistical operations, enhancing efficiency. Education and training programs play a crucial role in fostering the growth of a highly qualified workforce and stimulating innovation in logistics. Specialized educational institutions that provide logistics and supply chain management courses play a crucial role in improving the industry's skills.

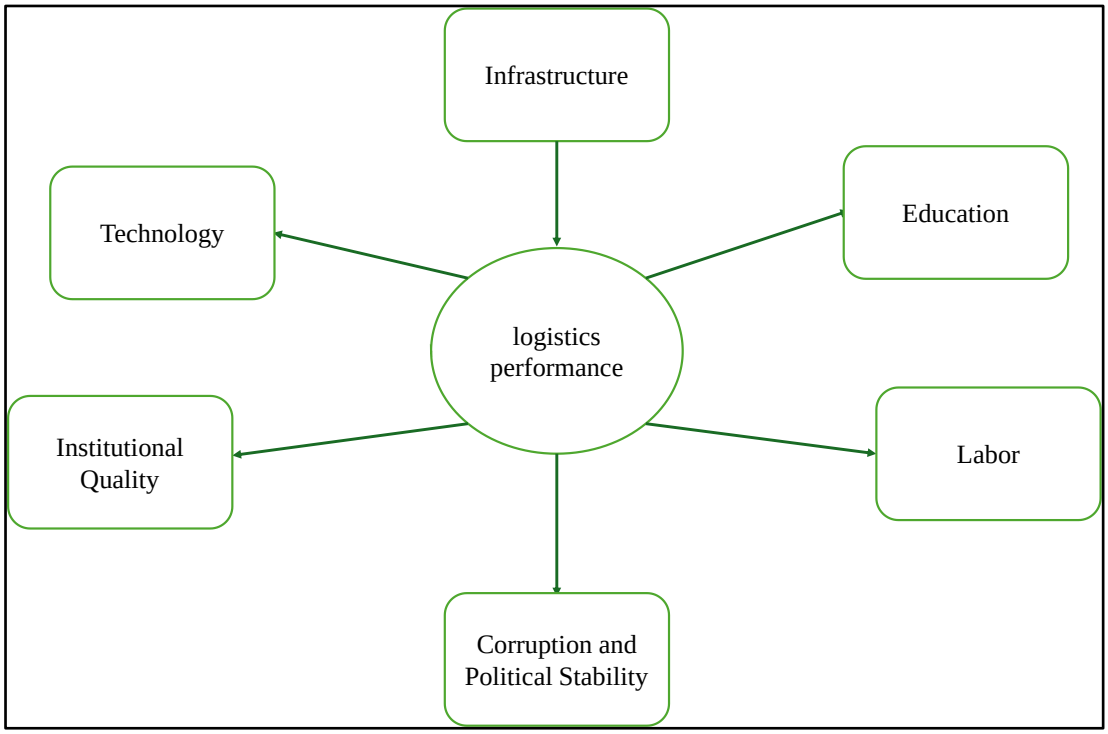

Figure 7. Logistics Performance Conceptual Framework

The hypothesis suggests that the quality of institutions, including factors such as corruption and political stability, substantially influences logistical performance. Lower levels of corruption and more robust political stability are linked to reduced transaction costs, better efficiency, and a favorable economic climate. Corruption is anticipated to harm logistics performance via the escalation of expenses and the generation of inefficiencies. On the other hand, political stability is expected to favorably impact logistics performance by creating a secure and predictable setting for logistical operations.

The conceptual framework, as shown in Figure 7, demonstrates the interconnections between these components and their combined influence on logistical performance. The framework functions as a foundation for examining how enhancements in infrastructure, technology, labor, education, and institutional quality might augment the efficiency and efficacy of logistics operations. Logistics is a complex and versatile field that has a crucial impact on the worldwide economy. The literature study emphasizes the fundamental elements of logistics, including transportation, warehousing, inventory management, and

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information flow. Additionally, it examines the many elements that influence logistics efficiency, including infrastructure, technology, workforce, education, and institutional quality, explicitly focusing on corruption and political stability. The conceptual framework combines these aspects to thoroughly comprehend their influence on logistics performance, serving as a basis for further study and actual implementations in the field.

Prospects of Logistics Performance Index in the Context of Oman's

Oman, a geographically advantageous nation on the Arabian Peninsula, has been trying to improve its logistics capabilities to establish itself as a prominent logistics center. The Logistics Performance Index (LPI), created by the World Bank, is an essential instrument for evaluating the logistics performance of nations. This index assesses nations using six criteria: customs, infrastructure, international shipping, logistical competency, tracking and tracing, and punctuality. To accomplish its economic diversification objectives described in Vision 2040, Oman considers it crucial to enhance its LPI ranking. This article examines the potential of Oman's Logistics Performance Index, assessing its advantages, difficulties, and possibilities for improvement. Oman has made substantial progress in improving its logistics industry by capitalizing on its advantageous geographical location along the Strait of Hormuz, a crucial bottleneck in global oil shipping. The nation has made substantial investments in its infrastructure, including ports, airports, and road networks. Oman has established itself as a crucial marine logistics center due to key infrastructure developments such as the Port of Salalah, the Duqm Port and Dry Dock, and the Sohar Port. Oman has enhanced its customs and border management protocols, explicitly focusing on streamlining and accelerating customs operations. The Bayan system, an electronic platform for customs clearance, has optimized customs procedures, decreased clearing durations, and improved overall efficiency. Although these initiatives have favorably influenced Oman's LPI rating, there is still potential for development in terms of further reducing bureaucratic delays and boosting transparency.

Oman's logistics infrastructure has seen significant advancements, characterized by state-of-the-art ports, airports, and road networks enabling the streamlined transportation of commodities. The Sultanate has made substantial investments in expanding and modernizing its ports to handle bigger boats and enhance its cargo-handling capabilities. For example, the Port of Salalah is one of the main transshipment hubs in the area. In addition, the objective of the Oman Rail project is to provide a comprehensive railway system that links vital urban centers and industrial regions, therefore enhancing the logistics industry. Oman's advantageous geographical position makes it a crucial conduit for global cargo transportation. The nation's ports function as transshipment centers, connecting the Eastern and Western regions. The government's emphasis on strengthening port infrastructure and optimizing customs processes has increased efficiency in international exports. Nevertheless, it is essential to maintain competitive shipping expenses and minimize logistical obstacles to continue development in this field. Oman's proficiency in logistics has been improving since there is an increasing number of logistics service providers providing diverse services. The Sultanate has prioritized the improvement of its workforce's abilities via training programs and collaborations with multinational logistics businesses. Cultivating a proficient workforce handling intricate logistics operations is crucial to enhancing Oman's logistics performance. Deploying sophisticated tracking and tracing technology is essential for improving the transparency and productivity of supply chain operations. Oman has advanced in this domain by using digital technologies that immediately monitor cargo. Nevertheless, it is essential to consistently allocate resources toward technology and innovation to maintain a competitive edge in the fiercely contested global logistics industry.

Timely delivery of products is crucial for optimizing logistics performance. Oman's efforts to optimize customs operations, upgrade infrastructure, and boost logistical proficiency result in improved punctuality. Nevertheless, it is crucial to resolve any lingering disruptions in the distribution network and maintain a consistent degree of dependability to attain a top position in the Logistics Performance Index (LPI). Although Oman has made progress, it still faces several hurdles in enhancing its LPI rating. A key obstacle is the need for ongoing investment in the construction and upkeep of infrastructure. Financial resources and strategic planning are necessary to stay abreast of the swiftly evolving technology and global logistics trends. Another obstacle that must be addressed is regulatory changes to improve transparency and decrease bureaucratic obstacles. Enhancing the efficiency of regulatory processes and maintaining uniformity in

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customs procedures are crucial for increasing operational effectiveness and attracting more international commerce. Furthermore, the logistics industry in Oman must prioritize addressing environmental sustainability issues. To remain competitive, Oman must embrace environmentally friendly practices and invest in green technology in response to the growing worldwide focus on green logistics and sustainability. Oman has several prospects to exploit to enhance its logistics efficiency. The country's geographic position offers a distinct advantage as a transshipment center connecting Asia, Europe, and Africa. Oman can use this geographical advantage to attract more international shipping lines and logistics businesses.

The establishment of free zones and industrial zones, such as the Duqm Special Economic Zone and the Sohar Free Zone, offers substantial prospects for enhancing logistical operations. Oman's zones provide benefits for firms, including tax breaks and streamlined customs processes, making it an appealing choice for logistics projects. In addition, promoting public-private partnerships (PPPs) may expedite the progress of infrastructure development and improve the efficiency of logistical services. Partnering with global logistics firms may enhance Oman's logistics capabilities using their experience, advanced technology, and industry best practices. Oman has a crucial opportunity to invest in digital transformation. Adopting digital technologies like blockchain, the Internet of Things (IoT), and artificial intelligence (AI) can completely transform logistics operations, increase transparency in the supply chain, and boost overall efficiency. Oman's Vision 2040 delineates the nation's aspiration to broaden its economic base and diminish reliance on oil-generated income. The logistics industry is crucial in achieving this objective, as it aims to position Oman as a prominent regional logistics center. To accomplish this aim, a comprehensive strategy is needed, which encompasses the development of infrastructure, changes in regulations, enhancement of capacity, and technological developments. Sustained investment in infrastructure is crucial for bolstering Oman's aspirations in logistics. Enhancing and updating ports, airports, and road networks will streamline the transportation of commodities and entice more international commerce. Implementing the Oman Rail project will significantly improve connectivity both inside the nation and with adjacent areas. Implementing regulatory changes to streamline customs operations, minimize bureaucratic delays, and increase transparency is essential. This is vital for enhancing logistical efficiency. Establishing a conducive business climate will draw the attention of more multinational logistics firms and stimulate foreign direct investment. Creating a proficient workforce is crucial for maintaining and supporting development in the logistics industry. Enhancing the competency of Oman's logistics experts may be achieved by investing in education and training programs and forging collaborations with foreign logistics businesses.

Adopting digital transformation is crucial for maintaining competitiveness in the global logistics industry. Adopting cutting-edge technologies like blockchain, IoT, and AI will enhance the supply chain's transparency, effectiveness, and dependability. Integrating intelligent logistics solutions will simultaneously tackle environmental sustainability issues and bolster green logistics endeavours. Oman has substantially improved its logistics performance by capitalizing on its strategic position and investing in infrastructure development. Nevertheless, to enhance its rating in the Logistics Performance Index, Oman must confront obstacles such as implementing legislative changes, making consistent investments in infrastructure, and promoting environmental sustainability. Oman can realize its goal of becoming a prominent logistics centre in the region by leveraging its favourable geographical position, facilitating collaborations between the public and private sectors, and embracing digital transformation. Oman's logistics industry has a positive outlook, and by implementing appropriate plans and making investments, the country may attain sustained development and economic diversification.

Conclusion

The comprehensive analysis of Oman's logistics performance demonstrates substantial progress and identifies areas that need more improvement. Oman has made significant expenditures to improve its logistics infrastructure by using its strategic position on the Arabian Peninsula. This includes the renovation of ports, airports, and road networks. Oman's endeavours have established it as a pivotal hub for marine logistics, enabling the efficient movement of goods and enhancing its connectivity with international markets. The research used the Logistics Performance Index (LPI) and Multi-Criteria Decision-Making (MCDM) methodologies to assess the logistics industry in Oman. The results suggest that while Oman has

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achieved certain advancements, there is still potential for improvement, namely in decreasing administrative delays and improving transparency. For the global logistics business to remain competitive, using modern tracking and tracing technology and engaging in staff training is crucial.

Oman's Vision 2040 delineates a strategy plan for expanding the economy via diversification, with the logistics sector assuming a crucial position. The study utilizes an advanced gravity model to gain insights into non-oil exports and re-exports. It reveals substantial correlations between trade flows and parameters such as GDP, population growth, distance, and Free Trade Agreements (FTAs). These insights give policymakers and stakeholders a robust strategic planning and decision-making tool. The leading suggestions include continuous investment in infrastructure development, implementing legal changes to simplify customs processes, and promoting public-private partnerships (PPPs) to accelerate growth. Adopting digital transformation using technologies such as blockchain, the Internet of Things (IoT), and artificial intelligence (AI) can improve supply chain transparency, effectiveness, and environmental friendliness. Furthermore, it is essential to consider environmental sustainability to conform to worldwide green logistics trends. Ultimately, Oman finds itself at a pivotal moment in its endeavor to establish itself as a prominent center for logistics. Oman can significantly enhance its LPI rating and achieve its Vision 2040 objectives by using its geographical advantage, investing in infrastructure and technology, and cultivating a supportive regulatory framework. Oman has the opportunity to significantly contribute to economic diversification and sustainable development by developing its logistics sector, which would establish the country as an essential participant in the global logistics industry. Oman is in a favorable position to achieve long-term growth and economic success due to its strategic efforts and ongoing commitment.

Declarations

Ethics Approval And Consent To Participate: Not Applicable

Consent For Publication: Not Applicable

Availability Of Data And Materials: Not Applicable

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References

A. McKinnon, C. Flöthmann, K. Hoberg, and C. Busch, "Logistics competencies, skills, and training: a global overview," 2017.
Y.-y. Lau, A. K. Ng, and J. Acevedo, Principles of global supply chain management. Anthem Press, 2019.
A. Z. Acar and H. Yurdakul, "Evaluation of competitive power of logistics industry in Turkey," Journal of Caspian Affairs, vol. 1, no. 1, pp. 1-22, 2015.
K. Rashidi and K. Cullinane, "Evaluating the sustainability of national logistics performance using Data Envelopment Analysis," Transport Policy, vol. 74, pp. 35-46, 2019.
L. Martí, R. Puertas, and L. García, "The importance of the Logistics Performance Index in international trade," Applied economics, vol. 46, no. 24, pp. 2982-2992, 2014.
L. Ojala and D. Celebi, "The World Bank's Logistics Performance Index (LPI) and drivers of logistics performance," Proceeding of MAC-EMM, OECD, pp. 3-30, 2015.
A. Göçer, Ö. Özpeynirci, and M. Semiz, "Logistics performance index-driven policy development: An application to Turkey," Transport policy, vol. 124, pp. 20-32, 2022.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 630 – 658
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DOI: https://doi.org/10.62754/joe.v3i8.4757
L. Martí, J. C. Martín, and R. Puertas, "A DEA-logistics performance index," Journal of applied economics, vol. 20, no. 1, pp. 169-192, 2017.
J. Rezaei, W. S. van Roekel, and L. Tavasszy, "Measuring the relative importance of the logistics performance index indicators using Best Worst Method," Transport policy, vol. 68, pp. 158-169, 2018.
R. G. Landen, Oman since 1856. Princeton University Press, 2015.
P. Risso, Oman and Muscat: an early modern history. Routledge, 2016.
A. S. Idrisi and O. Al-Ejli, "History and Geography of the Arabian Gulf," The Arabian Seas: Biodiversity, Environmental Challenges and Conservation Measures, pp. 9-46, 2021.
N. S. F. A. Rahman, S. A. M. Al-Balushi, A. A. Hamid, K. S. Al-Kalbani, and A. E. Alemu, "Logistics Sector Development Integration with Oman Logistics Vision 2040: Analyzing Using Porter's Value Chain Theory," Academy of Strategic Management Journal, vol. 20, pp. 1-19, 2021.
S. Thangavel, A. Kumar, and M. Heidari, "Strategic and technical analysis of sustainable smart cities development in Oman," Sustainable Technologies for Energy Efficient Buildings, p. 156, 2024.
A. K. M. Al-Makhmari, H. H. Al Yaqoopi, and Z. Slimi, "A Study on Attracting Local And International Investments and Improving an Integrated Logistics System Allows Local Products to Reach Global Markets," European Journal of Business and Management Research, vol. 6, no. 4, pp. 215-229, 2021.
H. H. Tuama, "Economic diversification and oil revenues in the Arab Gulf countries-the case of Saudi Arabia," Journal of Economics, vol. 6, no. 4, pp. 122-130, 2018.
W. H. Hausman, H. L. Lee, and U. Subramanian, "The impact of logistics performance on trade," Production and Operations Management, vol. 22, no. 2, pp. 236-252, 2013.
E. M. Nganga, "Effect of Coordination of Border Management Practices on Cargo Clearance Efficiency in Kenya; A Case of Key Border Stations in Kenya," Kenya School of Revenue Administration_Moi University, 2021.
F. Ding, Developing e-commerce logistics in cross-border relation. Technische Universitaet Berlin (Germany), 2018.
M. L. Juma, "Cargo Tracking System as a Competitive Strategy in Service Delivery," University Of Nairobi, 2014.
H. Li, J. Yang, and Z. Xiang, "A fuzzy linguistic multi-criteria decision-making approach to assess emergency suppliers," Sustainability, vol. 14, no. 20, p. 13114, 2022.
M. R. Kurinjimalar Ramu, M. Nathiya, and M. Manjula, "Green supply chain management; with dematel MCDM analysis," Recent trends in Management and Commerce, vol. 2, no. 3, pp. 8-15, 2022.
Y. R. Lim, A. S. Ariffin, M. Ali, and K.-L. Chang, "A hybrid MCDM model for live-streamer selection via the fuzzy delphi method, AHP, and TOPSIS," Applied Sciences, vol. 11, no. 19, p. 9322, 2021.
P. Guarnieri, Decision models in engineering and management. Springer, 2015.
A. Söllner, A. Bröder, A. Glöckner, and T. Betsch, "Single-process versus multiple-strategy models of decision making: Evidence from an information intrusion paradigm," Acta Psychologica, vol. 146, pp. 84-96, 2014.
A. C. Gontijo and C. S. C. Maia, "Tomada de decisão, do modelo racional ao comportamental: uma síntese teórica," Caderno de Pesquisas em Administração, vol. 11, no. 4, pp. 13-30, 2004.
W. Edwards, R. F. Miles, and D. Von Winterfeldt, "Advances in decision analysis," Cambridge, New York, 2007.
J.-P. Brans, B. Mareschal, J. Figueira, and S. Greco, "Multiple criteria decision analysis: state of the art surveys," New York, USA: Springer Science+ Business Media, Inc, pp. 163-196, 2005.
J. Mingers and J. Rosenhead, "Problem structuring methods in action," European journal of operational research, vol. 152, no. 3, pp. 530-554, 2004.
L. F. A. M. Gomes and C. F. S. Gomes, Tomada de decisão gerencial: enfoque multicritério. Editora Atlas SA, 2000.
J. Wallenius, J. S. Dyer, P. C. Fishburn, R. E. Steuer, S. Zionts, and K. Deb, "Multiple criteria decision making, multiattribute utility theory: Recent accomplishments and what lies ahead," Management Science, vol. 54, no. 7, pp. 1336-1349, 2008.
A. Tsoukias and P. Vincke, "Extended preference structures in multicriteria decision aid," in Multicriteria Analysis: Proceedings of the XIth International Conference on MCDM, 1–6 August 1994, Coimbra, Portugal, 1997: Springer, pp. 37-50.
K. P. Fabbri, "A methodology for supporting decision making in integrated coastal zone management," Ocean & Coastal Management, vol. 39, no. 1-2, pp. 51-62, 1998.
A. Boru İpek, "Multi-objective simulation optimization integrated with analytic hierarchy process and technique for order preference by similarity to ideal solution for pollution routing problem," Transportation Research Record, vol. 2677, no. 1, pp. 1658-1674, 2023.
C.-N. Wang, H.-T. Tsai, V. T. Nguyen, V. T. Nguyen, and Y.-F. Huang, "A hybrid fuzzy analytic hierarchy process and the technique for order of preference by similarity to ideal solution supplier evaluation and selection in the food processing industry," Symmetry, vol. 12, no. 2, p. 211, 2020.
P. Vincke, "Robust solutions and methods in decision-aid," Journal of multi-criteria decision analysis, vol. 8, no. 3, pp. 181-187, 1999.
C. Zopounidis and M. Doumpos, "Multi-criteria decision aid in financial decision making: methodologies and literature review," Journal of Multi-Criteria Decision Analysis, vol. 11, no. 4-5, pp. 167-186, 2002.
E. Triantaphyllou and E. Triantaphyllou, Multi-criteria decision-making methods. Springer, 2000.
R. L. Keeney and H. Raiffa, Decisions with multiple objectives: preferences and value trade-offs. Cambridge University Press, 1993.
R. Yadav, "Analytic hierarchy process-technique for order preference by similarity to the ideal solution: a multi-criteria decision-making technique to select the best dental restorative composite materials," Polymer Composites, vol. 42, no. 12, pp. 6867-6877, 2021.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 630 – 658
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https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4757

[K. Mukherjee, "Analytic hierarchy process and technique for order preference by similarity to the ideal solution: a bibliometric analysis 'from past, present and future of AHP and TOPSIS," International Journal of Intelligent Engineering Informatics, vol. 2, no. 2-3, pp. 96-117, 2014.

A. Kluczek and B. Gladysz, "Analytical Hierarchy Process/Technique for Order Preference by Similarity to Ideal Solution-based Approach to the Generation of environmental improvement options for Painting Process e Results from an Industrial Case Study," Journal of Cleaner Production, vol. 101, pp. 360-367, 2015.

H.-Y. Chang and S.-Y. Chen, "Applying Analytic Hierarchy Process-Technique for Order Preference by Similarity to Ideal Solution (AHP-TOPSIS) model to evaluate individual investment performance of retirement planning policy," African Journal of Business Management, vol. 5, no. 24, p. 10044, 2011.

D. Banister, "Transport and economic development: reviewing the evidence," Transport Reviews, vol. 32, no. 1, pp. 1-2, 2012.

J.-P. Rodrigue and T. Notteboom, "North American maritime gateways logistics," Port Technology International, vol. 55, pp. 50-53, 2012.

M. H. Hamed Al-Wahaibi, "Logistics hubs in Oman and political uncertainty in the Gulf," Contemporary Review of the Middle East, vol. 6, no. 2, pp. 109-153, 2019.

A. Al Harthy, "Royal Decree announces new rail project in Oman," Times of Oman, 2017.

[S. L. Kastner, "When do conflicting political relations affect international trade?," Journal of Conflict Resolution, vol. 51, no. 4, pp. 664-688, 2007.

S. Weijers, H.-H. Glöckner, and R. Pieters, "LOGISTIC SERVICE PROVIDERS AND SUSTAINABLE PHYSICAL DISTRIBUTION," LogForum, vol. 8, no. 2, 2012.

G. Persson and H. Virum, "Growth strategies for logistics service providers: a case study," The International Journal of Logistics Management, vol. 12, no. 1, pp. 53-64, 2001.

A. Cozzolino, E. Wankowicz, and E. Massaroni, "Logistics service providers' engagement in disaster relief initiatives: an exploratory analysis," International Journal of Quality and Service Sciences, vol. 9, no. 3/4, pp. 269-291, 2017.

J. Pradabwong, C. Braziotis, J. D. Tannock, and K. S. Pawar, "Business process management and supply chain collaboration: effects on performance and competitiveness," Supply chain management: an international journal, vol. 22, no. 2, pp. 107-121, 2017.

S. A. R. Khan and D. Qianli, "Impact of green supply chain management practices on firms' performance: an empirical study from the perspective of Pakistan," Environmental Science and Pollution Research, vol. 24, pp. 16829-16844, 2017.

J. Korinek and P. Sourdin, "To what extent are high-quality logistics services trade facilitating?," 2011.

C. Sénquiz-Díaz, "Transport infrastructure quality and logistics performance in exports," ECONOMICS-Innovative and Economics Research Journal, vol. 9, no. 1, pp. 107-124, 2021.

B. Hoekman and A. Nicita, "Non-tariff measures and trade facilitation: WTO disciplines and policy space for development," Non-Tariff Measures, vol. 13, 2018.

H. Riadh, "Modelling and quantifying the effects of trade facilitation on trade and international transport costs using the logistics performance index," International Journal of Shipping and Transport Logistics, vol. 12, no. 5, pp. 462-486, 2020.

A. Portugal-Perez and J. S. Wilson, "Export performance and trade facilitation reform: Hard and soft infrastructure," World Development, vol. 40, no. 7, pp. 1295-1307, 2012.

J. Roy and S. Bagai, "Key issues in trade facilitation: Summary of World Bank/EU workshops in Dhaka and Shanghai in 2004," World Bank Policy Research Working Paper, no. 3703, 2005.

A. Portugal-Perez and J. S. Wilson, "Why trade facilitation matters to Africa1," World Trade Review, vol. 8, no. 3, pp. 379-416, 2009.

N. S. F. A. Rahman, A. Ismail, M. K. Othman, R. A. M. Roslin, and Y. V. Lun, "Decision making technique for analysing performance of Malaysian secondary ports," International Journal of Shipping and Transport Logistics, vol. 10, no. 4, pp. 468-496, 2018.

D. P. Irfani, D. Wibisono, and M. H. Basri, "Logistics performance measurement framework for companies with multiple roles," Measuring Business Excellence, vol. 23, no. 2, pp. 93-109, 2019.

A. Gunasekaran and B. Kobu, "Performance measures and metrics in logistics and supply chain management: a review of recent literature (1995–2004) for research and applications," International journal of production research, vol. 45, no. 12, pp. 2819-2840, 2007.

M. L. Domingues, V. Reis, and R. Macário, "A comprehensive framework for measuring performance in a third-party logistics provider," Transportation Research Procedia, vol. 10, pp. 662-672, 2015.

R. Dubey, A. Gunasekaran, S. J. Childe, and T. Papadopoulos, "Skills needed in supply chain-human agency and social capital analysis in third party logistics," Management Decision, vol. 56, no. 1, pp. 143-159, 2018.

L. Verbivska, Z. Zhygalkevych, Y. Fisun, I. Chobitok, and V. Shvedkyi, "Digital technologies as a tool of efficient logistics," 2023.

H. Chen and M. A. E. Damian, "Warehouse Management Information System Technology Review," International Journal of Emerging Technologies and Advanced Applications, vol. 1, no. 3, pp. 24-32, 2024.

F. Wei, C. Alias, and B. Noche, "Applications of digital technologies in sustainable logistics and supply chain management," Innovative logistics services and sustainable lifestyles: Interdependencies, transformation strategies and decision making, pp. 235-263, 2019.

K. A. Chupanova, O. Y. Otrokov, N. V. Mosina, V. D. Sekerin, A. N. Zharov, and S. V. Garnik, "Supply chain management concept and digital economy: Digital supply chain technological innovation," Indian Journal of Economics and Development, vol. 17, no. 4, pp. 928-933, 2021.

B. L. Ruddell, H. Gao, O. Pala, R. Rushforth, and J. Sabo, "Infrastructure," The Food-Energy-Water Nexus, pp. 259-295, 2020.

E. Gonzalez-Pascual, J. Nosedal-Sanchez, and J. Garcia-Gutierrez, "Performance evaluation of a road freight transportation company through SCOR metrics," Case Studies on Transport Policy, vol. 9, no. 4, pp. 1431-1439, 2021.
M. Mandaza, W. M. Goriwondo, and K. Von Leipzig, "Critical analysis of behavioural training method for supply chain operation reference (SCOR) model compliant supply-chain-management (SCM)," 2012.
C.-S. Yang and T.-C. Lirn, "Revisiting the resource-based view on logistics performance in the shipping industry," International Journal of Physical Distribution & Logistics Management, vol. 47, no. 9, pp. 884-905, 2017.
A. Ajitabh and K. Momaya, "Competitiveness of firms: review of theory, frameworks and models," Singapore management review, vol. 26, no. 1, pp. 45-61, 2004.
H.-L. Wang, "Theories for competitive advantage," 2014.
W.-C. Wang, C.-H. Lin, and Y.-C. Chu, "Types of competitive advantage and analysis," International Journal of Business and Management, vol. 6, no. 5, p. 100, 2011.
R. Dubey, A. Gunasekaran, and T. Papadopoulos, "Green supply chain management: theoretical framework and further research directions," Benchmarking: An International Journal, vol. 24, no. 1, pp. 184-218, 2017.
S. S. Kamble and A. Gunasekaran, "Big data-driven supply chain performance measurement system: a review and framework for implementation," International journal of production research, vol. 58, no. 1, pp. 65-86, 2020.
Z. Hamid and R. M. Amin, "Oman's economic diversification cum trade structure," Omani Journal of Applied Sciences, pp. 21-34, 2017.
S. Al-Muharrami, "Large Projects in Light of Oman's Diversification Strategy: the Case of Special Economic Zone in Duqm," Социално-икономически анализи, no. 2, pp. 178-186, 2019.
H. D. A. M. Al Sarmi, "ISSN 1990-5149 PATRON."
O. Clausewitz, "Challenges for Civil-Military Relations," Parameters, vol. 1, pp. 16-2019.
G. Collins, "Anti-Qatar embargo grinds toward strategic failure," The GCC Crisis at One Year: Stalemate Becomes New Reality, pp. 59-71, 2018.
R. Selmi and J. Bouoiyour, "Arab geopolitics in turmoil: Implications of Qatar-Gulf crisis for business," International Economics, vol. 161, pp. 100-119, 2020.
M. H. Hamed, "Logistics Hubs in Oman and Political Uncertainty in the Gulf."
A. Ba-Awain and D. Daud, "Oman as a future logistics hub: A conceptual study," International Journal of Economics, Commerce and Management, vol. 6, no. 6, pp. 141-148, 2018.
F. Taderera, M. M. Mubarak Al Qasmi, and M. S. Al Balushi, "Analysing Oman Supply chain practices versus global best practices," Global Journal of Business Disciplines, vol. 2, no. 1, 2018.
A. Al-Harrasi et al., "Modeling supply chain network for a poultry industry in Oman: A case study," in 7th Annual Conference on Industrial Engineering and Operations Management, IEOM 2017, 2017: IEOM Society, pp. 2282-2288.
A. N. Hakro and A. M. Omezzine, "Oil prices and macroeconomic dynamics of the Oman economy," The Journal of Developing Areas, pp. 1-27, 2016.
Y. Candemir and D. Çelebi, "An inquiry into the analysis of the Transport & Logistics Sectors' Role in Economic Development," Transportation research procedia, vol. 25, pp. 4692-4707, 2017.
T. Handbook, "The National Program for enhancing economic diversification (TANFEEDH)," ed, 2017.
A. Stalinska, "Integration of Oman ports into global supply chains: Case of duqm port," Journal of Management and Business Studies, vol. 3, no. 5, pp. 189-200, 2014.
P. W. de Langen, Towards a better port industry: Port development, management and policy. Routledge, 2020.
Y. Xiao, S. Wang, J. J. Liu, J. Xiao, and Y. Hu, "Throughput estimation based port development and management policies analysis," Maritime Policy & Management, vol. 43, no. 1, pp. 84-97, 2016.
N. S. F. A. Rahman, R. R. A. Al Moqbali, N. H. Karim, and M. P. Mcdaid, "Value Chain Analysis of Warehouse Business Activities Associated with Global and National Approaches: A Case Study in Oman," Academy of Strategic Management Journal, vol. 20, pp. 1-19, 2021.
H. Magd and B. Ruzive, "Current Issues and Emerging Trends in Logistics and Supply Chain Management in Oman," Global Business & Management Research, vol. 13, no. 3, 2021.
A. al Kalbani, R. Masengu, and J. al Habsi, "Challenges and Opportunities in Implementing Digital Solutions in Cold Chain Logistics in Oman."
M. Rahamtallah, A. Abri, W. Abdel Rahman, and Q. AlZain, "Building the Next-Generation Process Automation System: An O-PAS Field Pilot Initiative Between Schneider Electric & Petroleum Development Oman," in International Petroleum Technology Conference, 2024: IPTC, pp. IPTC-24610-EA.
D. K. Saini and M. R. S. Al-Mamri, "Investigation of technological tools used in education system in Oman," Social
F. Louis and M. Saleh, "The Rise of E-commerce and its Impact on Logistics in Oman," 2024.
F. Taderera, M. S. Al Balushi, and R. Masengu, "Marketing Air Cargo and Courier Services in Oman as a Niche Logistics Market Segment and Delving into the Complex Intricacies of this High-Value Industry," European Journal of Science, Innovation and Technology, vol. 3, no. 4, pp. 224-244, 2023.
A. S. A. Nizar and M. T. Matriano, "The Challenges and Opportunities in SCL Optimization of SME Cargo Companies in Muscat, Oman," GSJ, vol. 10, no. 8, 2022.
N. Al Harrasi, M. Salah El Din, M. Reason, B. Al Balushi, and J. Al Habsi, "Knowledge and skills gap of graduates entry-level: perception of logistics and supply chain managers in Oman," Higher Education, Skills and Work-Based Learning, vol. 13, no. 6, pp. 1269-1285, 2023.
F. Alshubiri, "The impact of green logistics-based activities on the sustainable monetary expansion indicators of Oman," Journal of Industrial Engineering and Management, vol. 10, no. 2, pp. 388-405, 2017.
A. M. A. Al Jabri, Z. Slimi, H. H. Al Yaqoopi, and U. Mehmet, "Logistic companies in Oman: role in boosting economy, implementing eco-friendly, technological logistics for sustainable development," European Journal of Business and Management Research, vol. 6, no. 5, pp. 209-218, 2021.

Journal of Ecohumanism
2024
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DOI: https://doi.org/10.62754/joe.v3i8.4757
C. Lundberg, "Process Mapping with a Lean Approach: A Case Study at Gulf Agency Company Oman," ed, 2015.
R. Mogielnicki and R. Mogielnicki, "Free Zones in Oman, Saudi Arabia, Bahrain, Qatar, and Kuwait," A Political Economy of Free Zones in Gulf Arab States, pp. 89-132, 2021.
A. Kinra, K. S. Hald, R. R. Mukkamala, and R. Vatrapu, "An unstructured big data approach for country logistics performance assessment in global supply chains," International Journal of Operations & Production Management, vol. 40, no. 4, pp. 439-458, 2020.
R. D. Klassen and D. C. Whybark, "Barriers to the management of international operations," Journal of Operations management, vol. 11, no. 4, pp. 385-396, 1994.
T. H. Oum and J.-H. Park, "Multinational firms' location preference for regional distribution centers: focus on the Northeast Asian region," Transportation Research Part E: Logistics and Transportation Review, vol. 40, no. 2, pp. 101-121, 2004.
A. Kinra and H. Kotzab, "Understanding and measuring macro-institutional complexity of logistics systems environment," Journal of Business Logistics, vol. 29, no. 1, pp. 327-346, 2008.
A. Kinra and H. Kotzab, "A macro-institutional perspective on supply chain environmental complexity," International Journal of Production Economics, vol. 115, no. 2, pp. 283-295, 2008.
F. Wiengarten, M. Pagell, M. U. Ahmed, and C. Gimenez, "Do a country's logistical capabilities moderate the external integration performance relationship?," Journal of Operations Management, vol. 32, no. 1-2, pp. 51-63, 2014.
D. J. Bowersox, R. J. Calantone, and A. M. Rodrigues, "Estimation of global logistics expenditures using neural networks," Journal of business logistics, vol. 24, no. 2, pp. 21-36, 2003.
C. C. Bozarth, D. P. Warsing, B. B. Flynn, and E. J. Flynn, "The impact of supply chain complexity on manufacturing plant performance," Journal of operations management, vol. 27, no. 1, pp. 78-93, 2009.
J.-F. Arvis et al., "Connecting to Compete 2018: Trade Logistics in the Global Economy-The Logistics Performance Index and Its Indicators," 2018.
A. Kinra, "Environmental complexity related information for the assessment of country logistics environments: implications for spatial transaction costs and foreign location attractiveness," Journal of Transport Geography, vol. 43, pp. 36-47, 2015.
A. Stringfellow, M. B. Teagarden, and W. Nie, "Invisible costs in offshoring services work," Journal of Operations Management, vol. 26, no. 2, pp. 164-179, 2008.
H. Chen, R. H. Chiang, and V. C. Storey, "Business intelligence and analytics: From big data to big impact," MIS quarterly, pp. 1165-1188, 2012.
P. DiMaggio, M. Nag, and D. Blei, "Exploiting affinities between topic modeling and the sociological perspective on culture: Application to newspaper coverage of US government arts funding," Poetics, vol. 41, no. 6, pp. 570-606, 2013.
O. Matthias, I. Fouweather, I. Gregory, and A. Vernon, "Making sense of Big Data–can it transform operations management?," International Journal of Operations & Production Management, vol. 37, no. 1, pp. 37-55, 2017.
S. C. Ailawadi and P. R. SINGH, Logistics and Supply Chain Management. PHI Learning Pvt. Ltd., 2021.
П. Н. Резько and В. И. Рахуба, "Fundamentals of Logistics," 2016.
J. Mangan and C. Lalwani, Global logistics and supply chain management. John Wiley & Sons, 2016.
Y. Krykavskyy and N. Fihun, "The place of reverse logistics in the modern society," Logistics and Transport, vol. 25, pp. 5-12, 2015.
D. F. Davis and W. Friske, "The role of public–private partnerships in facilitating cross-border logistics: a case study at the US/Canadian border," Journal of Business Logistics, vol. 34, no. 4, pp. 347-359, 2013.
T. F. Halaszovich and A. Kinra, "The impact of distance, national transportation systems and logistics performance on FDI and international trade patterns: Results from Asian global value chains," Transport Policy, vol. 98, pp. 35-47, 2020.
M. Verougstraete, "Public-private partnership for cross-border infrastructure development," 2018.
C. L. Mann, "Supply chain logistics, trade facilitation and international trade: a macroeconomic policy view," Journal of Supply Chain Management, vol. 48, no. 3, pp. 7-14, 2012.
J. E. Anderson, "A theoretical foundation for the gravity equation," The American economic review, vol. 69, no. 1, pp. 106-116, 1979.
V. Roy, S. Mitra, M. Chattopadhyay, and B. Sahay, "Facilitating the extraction of extended insights on logistics performance from the logistics performance index dataset: A two-stage methodological framework and its application," Research in Transportation Business & Management, vol. 28, pp. 23-32, 2018.
M. P. Hauer, X. C. Hofmann, T. D. Krafft, and K. A. Zweig, "Quantitative analysis of automatic performance evaluation systems based on the h-index," Scientometrics, vol. 123, no. 2, pp. 735-751, 2020.
O. Memedovic, L. Ojala, J.-P. Rodrigue, and T. Naula, "Fuelling the global value chains: what role for logistics capabilities?," International Journal of Technological Learning, Innovation and Development, vol. 1, no. 3, pp. 353-374, 2008.
M. Hesse and J.-P. Rodrigue, "The transport geography of logistics and freight distribution," Journal of transport geography, vol. 12, no. 3, pp. 171-184, 2004.
P. Kent, "Logistics efficiency: why corridors should lead to open doors," in IFC Public Private Partnerships Seminar, 2010: Ports, Cairo, Egypt, pp. 12-13.
M. Kashiha, J.-C. Thill, and C. A. Depken II, "Shipping route choice across geographies: Coastal vs. landlocked countries," Transportation Research Part E: Logistics and Transportation Review, vol. 91, pp. 1-14, 2016.
H. Lorentz, M. Kumar, and J. S. Srai, "Managing distance in international purchasing and supply: a systematic review of literature from the resource-based view perspective," International Business Review, vol. 27, no. 2, pp. 339-354, 2018.
S. H. Park and G. R. Ungson, "Rough diamonds in emerging markets: legacy, competitiveness, and sustained high performance," Cross Cultural & Strategic Management, vol. 26, no. 3, pp. 363-386, 2019.

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J. Bhattacharjya, A. B. Ellison, V. Pang, and A. Gezdur, "Creation of unstructured big data from customer service: The case of parcel shipping companies on Twitter," The International Journal of Logistics Management, vol. 29, no. 2, pp. 723-738, 2018.
W. P. Wong and C. F. Tang, "The major determinants of logistic performance in a global perspective: evidence from panel data analysis," International Journal of Logistics Research and Applications, vol. 21, no. 4, pp. 431-443, 2018.
R. H. Ballou, "The evolution and future of logistics and supply chain management," European business review, vol. 19, no. 4, pp. 332-348, 2007.
R. van Hoek, J. Godsell, and A. Harrison, "Embedding "insights from industry" in supply chain programmes: the role of guest lecturers," Supply Chain Management: An International Journal, vol. 16, no. 2, pp. 142-147, 2011.
J.-P. Rodrigue, B. Slack, and C. Comtois, "Green logistics," in Handbook of logistics and supply-chain management, vol. 2: Emerald Group Publishing Limited, 2017, pp. 339-350.
A. Goodchild and J. Toy, "Delivery by drone: An evaluation of unmanned aerial vehicle technology in reducing CO2 emissions in the delivery service industry," Transportation Research Part D: Transport and Environment, vol. 61, pp. 58-67, 2018.
J. Gu, M. Goetschalckx, and L. F. McGinnis, "Research on warehouse operation: A comprehensive review," European journal of operational research, vol. 177, no. 1, pp. 1-21, 2007.
S. Chopra, "The evolution of omni-channel retailing and its impact on supply chains," Transportation research procedia, vol. 30, pp. 4-13, 2018.
A. F. Christopher, R. P. Kaur, G. Kaur, A. Kaur, V. Gupta, and P. Bansal, "MicroRNA therapeutics: discovering novel targets and developing specific therapy," Perspectives in clinical research, vol. 7, no. 2, pp. 68-74, 2016.
T. R. Lakshmanan, "The broader economic consequences of transport infrastructure investments," Journal of transport geography, vol. 19, no. 1, pp. 1-12, 2011.
G. Wang, A. Gunasekaran, E. W. Ngai, and T. Papadopoulos, "Big data analytics in logistics and supply chain management: Certain investigations for research and applications," International journal of production economics, vol. 176, pp. 98-110, 2016.
D. I. MacKenzie, J. D. Nichols, J. A. Royle, K. H. Pollock, L. Bailey, and J. E. Hines, Occupancy estimation and modeling: inferring patterns and dynamics of species occurrence. Elsevier, 2017.
P. Murphy and R. F. Poist, "Skill requirements of senior-level logisticians: a longitudinal assessment," Supply Chain Management: An International Journal, vol. 12, no. 6, pp. 423-431, 2007.
E. Lavallée, M. Razafindrakoto, and F. Roubaud, "Corruption and trust in political institutions in sub-Saharan Africa," in CSAE Conference 2008-Economic Development in Africa, 2008, p. 21.
S. Rose-Ackerman, "Political corruption and democracy," Conn. J. Int'l L., vol. 14, p. 363, 1999.
D. Kaufmann, A. Kraay, and P. Zoido-Lobatón, Aggregating governance indicators. world Bank publications, 1999.