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Review Article

A Comparative Examination of Saudi Arabia's Industrial Cities: Jubail and Yanbu as Drivers of Economic Diversification in the Vision 2030 Era

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Abstract: Established in 1975, the Royal Commission for Jubail and Yanbu (RCJY) has played a pivotal role in developing two major coastal industrial centers in Saudi Arabia: Jubail on the Arabian Gulf and Yanbu on the Red Sea. These cities have evolved from undeveloped coastal zones into sophisticated industrial complexes that support the Kingdom's efforts to diversify its economy away from oil dependence, in alignment with Vision 2030 objectives. This study presents a comprehensive comparative assessment across multiple domains, including industrial categorization and expansion, investment trends, infrastructure capacity, agricultural and fisheries output, population characteristics, corporate social responsibility programs, port operations, and international positioning. Evidence from RCJY publications, national statistics, and scholarly sources indicates that Jubail substantially exceeds Yanbu in terms of scale, investment volume, industrial concentration, and infrastructural development. Jubail contributes 85% of Saudi Arabia's non-oil exports, 11.5% of national GDP, and 7% of worldwide petrochemical production, while capturing more than half of the Kingdom's inbound foreign direct investment. Although Yanbu operates on a smaller scale across most indicators, it shows promising development in areas such as green hydrogen production and environmentally sustainable industrialization. The analysis identifies significant developmental imbalances, including an investment difference of approximately 440 billion SAR, a population disparity of around 330,000 residents, and an area variance of 410 km^2. These gaps highlight the importance of implementing focused policy measures to foster equitable regional advancement. The study concludes with data-supported policy suggestions in five key areas: foreign investment incentives, infrastructure enhancement, industrial diversification, workforce skill development, and environmental sustainability integration, all aimed at achieving balanced progress consistent with Vision 2030 goals.

Keywords: Saudi Arabia, Industrial Cities, Jubail, Yanbu, Economic Diversification, Vision 2030, Petrochemical Sector, Infrastructure Expansion, Foreign Direct Investment, Sustainable Industrial Development.

1. INTRODUCTION

1.1 Context and Historical Background

For more than fifty years, Saudi Arabia has actively pursued strategies to reduce its reliance on hydrocarbon revenues and establish a resilient, knowledge-driven economy. A landmark step in this direction was the creation of the Royal Commission for Jubail and Yanbu (RCJY) through a royal decree issued on September 21, 1975, tasked with overseeing the development of industrial cities, initially concentrating on Jubail on the eastern coast and Yanbu on the western coast (Dashash, 2017). These locations were chosen for their advantageous coastal access, enabling the growth of energy-intensive industries such as refining and petrochemical production as part of broader efforts to move beyond oil exports (Spitler, 2017).

Over the subsequent decades, both cities have undergone remarkable growth, with total investments surpassing 1.4 trillion Saudi Riyals by 2024. Among the four industrial cities now managed by RCJY—also including Ras Al-Khair and Jazan—Jubail and Yanbu remain the dominant contributors (Biryukov *et al*., 2025). The industrial city model was designed to concentrate economic activity in specialized zones, capitalizing on scale advantages and purposebuilt infrastructure to draw domestic and international capital (Al-Hajri *et al*., 2018).

1.2 Vision 2030 and the Role of Diversification

Launched in 2016, Vision 2030 constitutes the Kingdom's most comprehensive economic reform initiative to date, seeking to broaden economic activity beyond petroleum, strengthen public services, and cultivate a robust private sector (Garba *et al*., 2025). The plan prioritizes resource efficiency, citizen welfare, and technology-led progress (Bélaïd *et al*., 2023). Industrial cities such as Jubail and Yanbu serve as critical platforms for testing and implementing sustainable industrial practices and diversification policies (Abedalrhman *et al*., 2024).

Resource-abundant nations often face distinctive obstacles to diversification, including institutional constraints and structural impediments that hinder meaningful reform (Fattouh *et al*., 2021). Although diversification has been a recurring objective in Saudi development plans, oil revenues continue to dominate the economy, notwithstanding notable advances in non-oil industries (Albassam, 2015). Manufacturing output is forecasted to approach 205 billion USD by 2023, representing approximately 13% of GDP, bolstered by extensive infrastructure and dedicated industrial zones (Alnaim *et al*., 2023).

1.3 Objectives and Research Importance

This study conducts a systematic comparison of Jubail and Yanbu, identifying imbalances and prospects for balanced advancement. The primary objectives are to:

1. Offer a multidimensional comparative framework across core domains.
2. Examine developmental trajectories since RCJY's inception in 1975.
3. Highlight existing disparities between the cities.
4. Identify pathways toward equitable regional progress.
5. Provide evidence-based policy recommendations to bridge identified gaps.

The value of this research stems from its integrated, cross-dimensional analysis of two cornerstone elements of Saudi Arabia's industrialization strategy. Prior studies have addressed diversification at the national level (Albassam, 2015; Naimi *et al*., 2021) or examined specific industrial aspects (Ali, 2020), but few have delivered a detailed, head-to-head comparison of Jubail and Yanbu across economic, social, and infrastructural facets. This work addresses that gap and offers practical guidance for policymakers pursuing regionally balanced growth under Vision 2030.

2. HISTORICAL EVOLUTION AND INDUSTRIAL CATEGORIZATION

2.1 Origins of the Industrial City Model

Saudi Arabia's organized industrialization efforts commenced with the First Five-Year Development Plan (1970–1975), and the establishment of RCJY in 1975 represented a turning point (Spitler, 2017). The decision to create dedicated industrial cities acknowledged that effective industrialization required integrated planning, specialized utilities, and coordinated support systems beyond isolated facilities (Dashash, 2017).

By 2006, the two cities hosted 218 industrial operations supplying 7.9% of global petrochemical needs (Dashash, 2017). Their transformation constitutes one of the most extensive civil engineering undertakings worldwide, especially in Jubail (Al-Mutairi *et al*., 2015).

2.2 Industrial Classification Framework

RCJY employs a three-tier classification system based on capital requirements, scale, and value chain position:

- **Primary (Large-Scale) Industries**: Capital-intensive core operations such as

petrochemical plants, refineries, and steel mills.

- **Secondary (Mid-Scale) Industries**: Downstream processing facilities converting primary outputs into intermediate or consumer goods.
- **Support (Light) Industries**: Ancillary services and small manufacturing units serving the broader ecosystem.

This structure promotes industrial clustering, where primary anchors stimulate demand for secondary and support activities, generating economic multipliers (Al-Hajri *et al*., 2018).

2.3 Jubail's Development Path

Jubail's original master plan envisioned 19 primary, 136 secondary, and 100 support industries. By 2023, it had 25 primary facilities and over 170 total operating enterprises. Recognized as the largest industrial complex in the Middle East, Jubail specializes in hydrocarbon-based industries and contributes 85% of Saudi non-oil exports, 11.5% of national GDP, and 7% of global petrochemical output. SABIC's expansion from 13 million metric tons in 1994 to 40.6 million by 2002 exemplifies this growth (Al-Mutairi *et al*., 2015; Spitler, 2017).

The Jubail Research & Innovation Cluster Hub (J-RICH) facilitates industry–academia partnerships, supporting the shift toward knowledge-intensive growth (Al-Hajri *et al*., 2018).

2.4 Yanbu's Development Path

Yanbu has concentrated on refining and petrochemicals, capitalizing on Red Sea access to Europe and Africa. By 2024, it operated three major refineries and multiple downstream plants, with significant expansion underway. Covering 185 km^2 (plus 420 km^2 planned), Yanbu emphasizes sustainable models, including the Smart Yanbu Industrial City initiative (Almontshery *et al*., 2019; Bélaïd *et al*., 2023).

2.5 Aggregate RCJY Achievements

Across all RCJY cities, approximately 541 industries were operational by mid-2024, with Jubail and Yanbu accounting for the majority. Primary industries dominate output despite fewer units. Private investment reached 1,222 billion SAR, yielding a multiplier of 8.9 SAR private capital per 1 SAR of public funding (Biryukov *et al*., 2025).

3. INVESTMENT TRENDS AND ECONOMIC PERFORMANCE

3.1 Aggregate Investment Outcomes

Cumulative private investment of 1,222 billion SAR by 2024, with an 8.9:1 private-to-public multiplier, illustrates the effectiveness of public infrastructure in catalyzing private participation (Biryukov *et al*., 2025). Nevertheless, foreign direct investment has fallen short of targets, requiring sustained public funding (Biryukov *et al.,* 2025; Fattouh *et al*., 2021).

3.2 Foreign Direct Investment Comparison

Table 1: Foreign Direct Investment Metrics (2022, billion SAR)

Metric	Jubail (Eastern Province proxy)	Yanbu (Madinah Region proxy)	Difference (Jubail – Yanbu)
FDI Inflow	90.7	2.0	88.7
FDI Stock	300.6	31.3	269.3
Net Inflow	86.0	1.4	84.6

Mathematical Note: Difference = Jubail value − Yanbu value. The inflow gap of 88.7 billion SAR represents a ratio of approximately 45:1.

Source*: Compiled from regional proxy data reported in Biryukov et al., (2025).*

Jubail captured over half of total Kingdom FDI, including 68% of basic industry investment.

Yanbu's projected 80 billion SAR FDI over 2023–2033 signals future convergence potential.

3.3 Overall Investment Distribution

Estimated total investments: Jubail ≈ 831 billion SAR; Yanbu ≈ 391 billion SAR. Gap calculation: 831 − 391 = 440 billion SAR. This disparity reflects Jubail's earlier momentum and geographic advantages for Gulf markets. Chemical production is expected to double by 2040, raising Saudi Arabia's global share to 17% (Fattouh *et al*., 2021).

4. Infrastructure Capacity and Development

4.1 Comparative Overview

Table 2: Selected Infrastructure Indicators

Infrastructure Aspect	Jubail	Yanbu	Gap/Note
Total Area (km^2)	1,016	606	410 km^2 (1,016 – 606)
Fire Stations	4	1	3 stations
Grain Storage Capacity (tons)	Relies on Dammam	156,000 (12 silos)	Yanbu-specific capacity
Road Network	Extensive highways/rail	10 million m^2	—
Desalination/Power	World's largest facility	Yanbu 4 IWP: 450,000 m^3/day	—

Mathematical Note: Area gap = 1,016 − 606 = 410 km^2.

Source*: Compiled from Dashash (2017), Bélaïd et al. (2023), and RCJY reports.*

Jubail's larger footprint supports greater expansion capacity. Yanbu is advancing a 4.4 GW green hydrogen facility, positioning it for sustainable energy leadership (Bélaïd *et al*., 2023).

5. Agricultural and Fisheries Sectors

5.1 Agricultural Constraints

Arid conditions and land prioritization for industry limit agriculture in both cities.

5.2 Fisheries Production

Table 3: Marine Capture Fisheries (tonnes)

Year	Arabian Gulf Coast (Jubail proxy)	Red Sea Coast (Yanbu proxy)	National Total
2012	45,261	26,130	71,391
2023	46,981	27,719	74,700

Growth calculation (2012–2023): Gulf coast +3.8%; Red Sea coast +6.1%.

Source*: National fisheries statistics cited in the original analysis.*

Aquaculture reached 139,949 tonnes nationally in 2023, offering future diversification potential.

6. Population Profiles and Labor Dynamics

Table 4: Demographic Indicators (2025 estimates)

Indicator	Jubail	Yanbu	Gap/Note
Population (metro)	695,000	371,327	~324,000 (695,000 – 371,327)
Annual Growth Rate	~3.0%	~2.0%	1 percentage point
Gender Ratio (males:100 females)	233	124	—
Working-Age Population (%)	72%	68%	4 percentage points
Non-Saudi Share	60–70%	50–60%	—

Mathematical Note: Population gap ≈ 695,000 − 371,327 = 323,673 residents.

Source*: Compiled from multiple demographic estimates (2024–2025).*

Extreme gender imbalances and expatriate dominance underscore the need for Saudization and skill development initiatives.

7. Corporate Social Responsibility Programs

Table 5: Selected CSR Focus Areas

Domain	Jubail Initiatives	Yanbu Initiatives
Education	Back-to-school support, summer training	Co-operative training, youth programs
Health	Breast cancer campaigns, HSSE weeks	Blood drives, awareness campaigns
Environment	Awareness and conservation programs	Clean-up drives, water conservation
Community	Orphan support, national events	CSR Council (72 million SAR invested)

Source*: RCJY corporate reports and community program summaries.*

Both cities align CSR with Vision 2030 quality-of-life and sustainability goals.

8. Port Infrastructure and Logistics

Table 6: Commercial Port Comparaison

Aspect	Jubail Commercial Port	Yanbu Commercial Port	Gap/Note
Area (km^2)	44	4.2	39.8 km^2 (44 – 4.2)
Berths	16	12	4 berths
Annual Capacity (M tonnes)	36	15	21 M tonnes
Container Capacity (M TEU/year)	1.8	Not specified	—

Mathematical Note: Capacity gap = 36 − 15 = 21 million tonnes annually.
Source*: Port authority data summarized in RCJY publications.*

Jubail's superior facilities support its dominant export role, while Yanbu's location offers strategic access to western markets.

9. International Positioning and Comparative Metrics

Table 7: Summary of Key Developmental Gaps

Metric	Jubail	Yanbu	Gap (Jubail – Yanbu)
Area (km^2)	1,016	606	410
Population (approx.)	695,000	365,000	330,000
Total Investment (billion SAR)	~831	~391	440

Source*: Compiled from Biryukov et al., (2025) and RCJY cumulative reports.*

Jubail ranks among the world's top 10 industrial cities, while Yanbu holds strong potential in sustainable sectors.

10. Analysis of Developmental Imbalances and Future Paths

Disparities arise from historical sequencing, geographic advantages, agglomeration economies, and self-reinforcing investment cycles. Jubail benefits from proximity to feedstock and established clusters, including J-RICH (Al-Hajri *et al*., 2018). Vision 2030 enables complementary specialization: Jubail in large-scale petrochemicals, Yanbu in green hydrogen and smart-city innovation.

11. Policy Recommendations for Equitable Regional Development

1. **Targeted FDI Incentives for Yanbu** – Offer sector-specific tax breaks and streamlined procedures for sustainable industries.
2. **Symmetric Infrastructure Expansion** – Prioritize port capacity, emergency services, and logistics hubs in Yanbu.
3. **Industrial Diversification** – Promote secondary and support industries via public-private partnerships and mandatory large-firm investment in SMEs (Dashash, 2017).
4. **Human Capital Enhancement** – Establish additional vocational centers and international partnerships in Yanbu.
5. **Sustainability Integration** – Scale green hydrogen and smart-city platforms to attract environmentally conscious investment.
6. **Transparent Data Reporting** – Mandate annual city-level metrics disclosure.
7. **Academic–Industry Collaboration** – Replicate J-RICH model in Yanbu.
8. **Coordinated Implementation** – Set measurable targets and accountability mechanisms under RCJY oversight.

12. CONCLUSION

Jubail and Yanbu exemplify both the achievements and ongoing challenges of Saudi Arabia's industrial city strategy. Jubail has achieved global prominence through scale and integration, while Yanbu demonstrates distinctive potential in sustainability and geographic diversification.

Persistent imbalances—440 billion SAR in investment, 330,000 in population, and 410 km^2 in area—necessitate deliberate policy action. The recommended measures provide a practical framework for realizing Vision 2030's vision of balanced, sustainable, and inclusive national development.

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