

Research Article¹

Human Capital, Economic Intelligence, and Sustainability at Aramco: A Strategic Transformation Perspective

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Abstract

The purpose of this research is to examine how Saudi Aramco might improve its sustainability efforts by using human capital and economic intelligence (2023-2025). It focuses on how the SDGs and the company's strategic decisions are supported by economic information and investments in human capital development. Using a case study of Saudi Aramco to evaluate the impact of variables in a practical organisational environment, the study employs a descriptive-analytical approach to address the theoretical aspects of the research.

The results show that the company's operational efficiency and production have been significantly enhanced by investing in human resources, particularly through training and development initiatives. It is clear from the data that economic intelligence has helped the firm make smart strategic decisions that have improved its performance at both global and local levels, especially in the energy sector, regarding reducing carbon emissions and using renewable energy. To better analyse markets and make strategic decisions, the report suggests investing more in employee development programs and making better use of economic intelligence technologies. To promote clean technology and provide long-term solutions, it also suggests increasing international collaboration.

Keywords: Human Capital; Economic Intelligence; Sustainability; Saudi Aramco.

Jel Classification Codes: J24; Q01; M21; O32; Q56.

1. Introduction

At the national and corporate levels, human capital is often recognized as a critical component of achieving sustainable economic growth. Human capital is the sum of an individual's education and training as well as their practical experience; it helps businesses become more efficient and creative.

Collecting and analyzing pertinent economic data on markets and rivals has also become an essential part of economic intelligence, a tool that supports strategic decision-making. In doing so, businesses are better equipped to identify opportunities and threats and make informed decisions. At the same time, sustainability is about

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balancing the economic, social, and environmental aspects of development in a way that satisfies current and future generations without jeopardizing their capacity to meet their own needs.

1.2. Research Problem

With this context in mind, we arrive at the following **primary research question**:

- **With the help of its human resources and economic acumen, how has Saudi Aramco guided its strategy shift toward sustainability?**

This first inquiry prompts **the subsequent inquiries**:

- How does Saudi Aramco's investment in human capital impact the attainment of sustainability?
- In order to achieve economic sustainability and increase competitiveness, what role does economic intelligence play?
- How may operational procedures be made more efficient by the integration of economic intelligence with human capital?
- To strike a balance between sustainability in all its aspects economic, social, and environmental
- what policies and initiatives should Saudi Aramco implement? When it comes to achieving sustainability,
- how does Saudi Aramco plan to integrate human capital with economic intelligence ?

1.3. Claims for Future Study

The following theories are proposed to research issue and its associated sub-questions:

- Achieving sustainability at Saudi Aramco is greatly aided by investments in human resources.
- A company's operational efficiency and competitiveness may be boosted with the use of economic information.
- More efficient attainment of sustainability goals results from combining human capital with economic knowledge .

1.4. Research Importance

This research is important because it examines how large companies might achieve sustainability goals by leveraging human capital and economic intelligence. Energy firms like Saudi Aramco are actively working to enhance sustainable development in response to growing economic and environmental concerns, making this issue all the more essential to them. Other firms looking to enhance their sustainability-related performance may also find relevant ideas in the report.

1.5. The Study's Goals

This research intends to:

- determine how Saudi Aramco's investments in human capital affect the company's long-term viability ;
- think about how economic information might help the business be more competitive and sustainable ;
- to help Saudi Aramco reach its sustainability goals, suggest ways to integrate human capital and economic intelligence better .

1.6. Approach to Research

The research questions and goals were addressed, and the study was conducted using a descriptive-analytical approach in both the theoretical and practical parts of the research. Furthermore, Saudi Aramco was the organization investigated in the empirical component's case study.

1.7. Literature Review

Various viewpoints have been advanced in the current literature on the relationship among sustainability, technological progress, and human capital. (Alžbeta , Martin , Emese , & Nikola , 2023) surveyed 113 IT businesses in Slovakia and used statistical tests of independence to assess the data. Their research proved that human resource management strategies and investments in staff education boost business results. On the other hand, over 50% of the businesses polled had not established a formal human capital management strategy, and over 1/3 of those had not evaluated the return on investment of employee healthcare expenditures. Human resource managers were the focus of the study's many suggestions for improving their education and career prospects. The significance of human capital in achieving sustainability goals, particularly through training and

education programs, was highlighted by (Canan , Gamze , Mahmut Ünsal , & Yilmaz , 2023)who also examined the symbiotic relationship between human capital and sustainable development. Their research also highlighted the need to raise people’s awareness of the importance of leading healthy lives and being environmentally conscious, as well as the significance of digital transformation in healthcare systems. From a technical standpoint, (Yong , Zeshui , Xinxin , & Marinko , 2024) provided a comprehensive evaluation of the effects of AI on economic growth. To identify the intellectual and structural tendencies of the subject, the authors used analytical methods, including Bibliometrix and bibliographic coupling, to analyze 2,211 papers on AI and economic growth. In the context of the Fourth Industrial Revolution, their findings showed that AI is playing an increasingly important role in intelligent decision-making, social governance, and labour and capital management, all of which contribute to sustainable development.

Additionally, data mining and deep learning were highlighted as significant new areas of study in the report. Despite these advancements, the sustainability of large energy companies resulting from investments in human capital and economic intelligence has received little attention in the literature. In light of the unique economic and environmental challenges facing Saudi Arabia, this study addresses a knowledge gap by examining how human capital development and the use of economic information can bolster Saudi Aramco’s sustainability goals.

2. Human Capital: A Conceptual Framework

Schultz, an American economist, was the first to propose the concept of human capital in 1961. He saw an individual’s skills and knowledge as a kind of capital that could be invested.

2.1. Human capital is defined

Personnel are “the knowledge, skills, and abilities that individuals acquire thru education, training, and experience, which contribute to increasing productivity” (Becker, 1964).

Employee competence is “the set of competencies, talents, and abilities that individuals develop and use within the work environment to achieve organizational objectives” (Schein & Peter, 2016).

Organizations’ competitive advantage is built and maintained by these traits:

Figure 1. Human capital components and dimensions



Source: (Manuel , António , Nourban , Amândio , Jorge , & Isabel, 2025, p. 08)

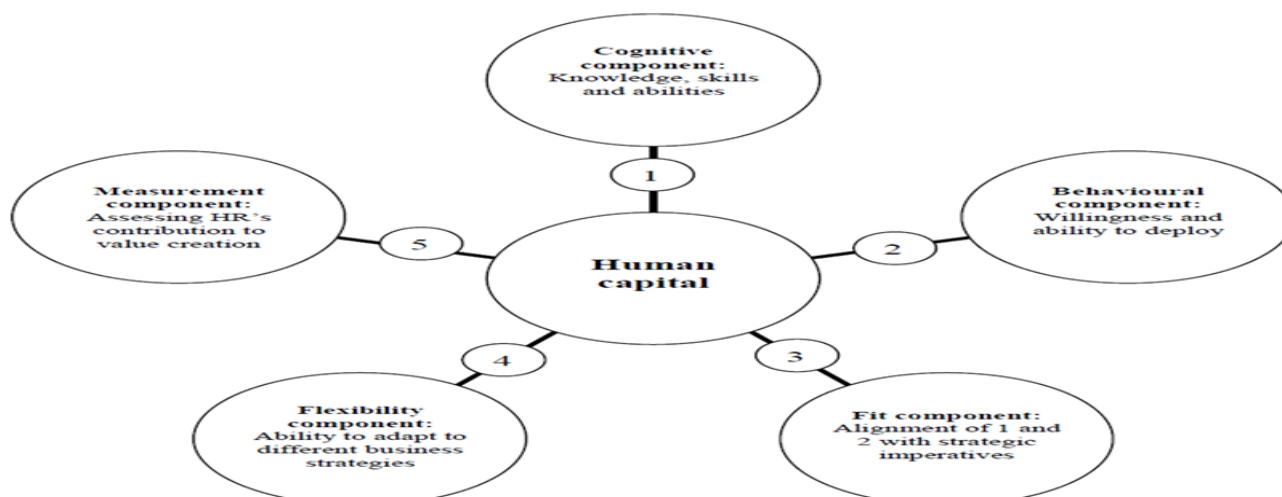
According to Figure 01, the following are the parts of human capital, as shown in:

- **Knowledge**, which encompasses not only general business acumen but also industry-specific and functional expertise;
- **Capabilities and skills**, Coleman argues that people build human capital when they acquire knowledge and skills that allow them to do new things or work more efficiently;
- **Life events**, Every day people learn new things by reading, watching, listening, working, or just being in different places and times.

2.2. Features of Human Capital Investment

The following diagram may illustrate the features of human capital:

Figure 2. Human Capital Traits



Source: (Afiouni, 2013, p. 26)

In the illustration, human capital is shown as a complex concept with five interconnected parts. The cognitive component is the most fundamental intellectual component of human capital; it includes all of an employee's knowledge, skills, and talents. The second part is the behavioural part, which concerns how eager and capable workers are to apply these skills for the company's benefit. Thirdly, there is strategic fit, defined as the extent to which an organisation's strategic goals align with its employees' skill sets. The fourth quality is adaptability, which shows how well human resources can change with the times and the company's goals. The measurement component culminates in an evaluation of HR's impact on the business's value creation. The value of human capital to an organisation depends on more than just the knowledge and abilities of its employees; it is also affected by their behaviour, their capacity to adapt, how well their strategies align, and the impact they have on the company's success.

This figure illustrates the worth of human capital management:

Figure 3. Human Capital Management Value Triangle



Source: (Ingham, 2007, p. 175)

In Figure 3, we can see three primary ways human capital management can generate revenue. Firstly, by ensuring HR is well managed, resulting in value for money. Secondly, by ensuring other parts of the organisation are well supported, which leads to added value. Lastly, by creating value, which is a really strategic approach to making people and the organisation more valuable, we can see that HRM is a great investment in the future of any business.

2.3. Human Capital Assessment

Various methods and metrics for evaluating human capital are detailed in the section that follows:

Figure 4: methods of measuring human capital

①	②	③	④
Human Capital Cost Factor (HCCF)	Human Capital Return on Investment (HCROI)	Employee Economic Value Added (EEVA)	Return on People-Adjusted Capital Employed (ROPACE)
Purpose	Purpose	Purpose	Purpose
Provides the cost of human capital, both immediately and over the long run on a fully-loaded basis. This gives us an understanding of the total investment cost of a firm's human capital.	Explains the fully costed return on monies spent investing in people. This represents the leverage on pay and benefits used to identify the benefits of human capital management.	Estimates the value employees derive from working at a given organization, adjusted for approximate corporation tax. Used to compare against economic value added to proxy gain-sharing between labor and capital.	Allows for the adjustment of balance sheet, Profit & Loss (P&L) and cash flows to reflect human capital as an asset. Allows us to see a fully-loaded return on all types of human capital cost, including carving out employee "expense" versus "investment".
Calculation*	Calculation**	Calculation	Calculation***
Salaries + benefits + stock comp + contingents + lost days + churn + training	$\frac{\text{Net Operating Profit After Tax (NOPAT)} + \text{HCCF}}{\text{HCCF}}$	$\frac{[(\text{Employee average pay} - \text{market average pay}) \times 0.75] \times \text{total number of employees}}{\text{HCCF}}$	$\frac{\text{Adj. NOPAT}}{\text{Adj. fixed assets} + \text{Net Working Capital (NWC)}}$

Source: (Bauer, 2023, p. 07)

In the graphic 04, we can see four methods of measuring human capital that work together; these methods capture various aspects of employees' economic contribution to an organization's success. By adding together factors such as wages, benefits, stock compensation, contingent labour costs, missed workdays, employee turnover, and training expenditures, the Human Capital Cost Factor (HCCF) calculates the overall cost of human capital. Since this is an estimate of the organization's investment in its people, it gives a general idea. By calculating the monetary return on investment (ROI) from employee expenditures, Human Capital Return on Investment (HCROI) goes beyond simple cost assessment. An indicator of the efficacy of investments in remuneration, benefits, and other HR policies, it links post-tax operational success to the cost of human capital. By comparing workers' take-home pay with the going rate for similar work, after accounting for taxes and headcount, the Employee Economic Value Added (EEVA) metric measures workers' monetary value. The goal of this metric is to separate the value-creating contributions of labour and capital inside a company. Last but not least, ROPACE (Return on People-Adjusted Capital Employed) accounts for human capital when calculating capital efficiency.

3. Intelligence on the Economy

The idea of economic intelligence is significant in economics and business. Information literacy is defined as the capacity to gather, process, and use data to enhance strategic decision-making and national and business competitiveness.

3.1. Economic Intelligence: A Definition

When asked to describe economic intelligence, François Jakobiak said it is "a set of activities involving the search for and collection of information related to the economic environment in order to identify associated opportunities and risks" (Jakobiak, 2009, p. 22)

Economist Harbulot calls it "a set of methods used to analyze and interpret strategic information in order to support decision-making within economic organizations" (Eric & Christian, 2011, p. 45)

Economic intelligence is "an organized and continuous process of collecting and analyzing relevant information concerning markets, competitors, and technology in order to maintain competitiveness" (Said & AFQUIR, 2023, p. 67)

3.2. Key Aspects of Economic Acumen

This is a summary of the most important aspects of economic intelligence:

- **The Informational Aspect - The Gathering and Searching for Data;** (Jakobiak, 2009, p. 34)

- **Information Analysis as an Analytical Dimension;** (Eric & Christian , 2011, p. 67)
- **Security Aspect - Data Safeguarding;** (Said & AFQUIR, 2023, p. 82)
- **Decisions Focused on the Future (Strategic Dimension).**(Eric & Christian , 2011, p. 159)

3.3. Economic Intelligence Tools and Needs

If businesses want to succeed in today's market and gain a competitive edge, they need economic information and the resources it provides. Methods for collecting, analyzing, and securing data are all part of these technologies. The following are the primary resources needed for economic intelligence: (Jakobiak, 2009, p. 59)

- Methods for Collecting Data;
- Methods for Analysing Data and Tools for Security.

3.4. The Aspects of Sustainable Development

3.4.1. Sustainable Development

By “an integrated approach to economic, social, and environmental development aimed at improving human well-being within the ecological limits of the planet” (Jeffrey, 2015, p. 25)

Achieving a balance between meeting the basic needs of all people and remaining within the Earth's planetary boundaries, without exceeding them, in order to maintain a healthy and regenerative environment is what "Kate Raworth" means when she says. (Ross, 2019, p. 178)

3.4.2. Key Aspects of Long-Term Sustainability

- **The Aspect of the Economy:** Promoting balanced and sustainable economic development that reduces poverty, creates jobs, and protects natural resources for future generations is the emphasis of the economic dimension. Economic policies that encourage creativity, competitiveness, and crisis resilience are necessary to reach this goal; (Ross, 2019, p. 83)
- **The Aspect of Society:** Reducing social inequities among people is the goal of the social dimension, which includes social justice and well-being. Protecting human rights, enhancing gender equality, healthcare, education, and quality of life; (Ross, 2019, p. 112)
- **The Environmental Aspect:** Ecosystem preservation and resource conservation are the primary goals of the environmental dimension this goal necessitates a more sustainable use of resources, reduced pollution and carbon emissions, the maintenance of ecological balance, and the safeguarding of natural resources for generations to come. (Johan & M. Klum, 2015, p. 125)

4. The Study's Practical Framework: Saudi Aramco

Saudi Aramco is ranked among the top oil and petrochemical conglomerates globally. The Saudi government and an American oil corporation formed the business in 1933 under the name California-Arabian Standard Oil Corporation. By the time the Saudi government had fully owned it, the name was changed to Saudi Aramco. Today, Saudi Aramco plays a pivotal role in the international energy market as one of the world's leading producers of crude oil and condensate. Among the biggest IPOs ever, the firm went public in December 2019 on Tadawul, the Saudi Stock Exchange. (Alsayer, 2025, p. 03)

Social and political change in Aramco was slow, and “the society in 1965 remained heavily imbued with the ancient values, and the development of modern forms of political activity had hardly begun. (Wedian , Tom , & Aly , 2023)

4.1. Saudi Aramco's Spending on Human Resources

4.1.1. Recruitment of Human Capital

Saudi Aramco held recruitment seminars throughout North America, Europe, Asia, and Africa as part of its strategy to attract skilled workers from around the world. Aramco (2023, p. 63) states that Saudi Aramco engaged many Saudi applicants in vocational and professional development programs in order to prepare its staff for future needs.

4.1.2. Training for Human Capital

Indicator	2021	2022	2023
Fatality Rate	Not previously measure	Not previously measure	0.305
Number of Fatalities	01	05	03
Total Recordable Cases	0.054	0.050	0.042
Lost-Time Injury or Illness Rate	0.017	0.014	0.018
Number of Tier 1 process Safety Events	11	11	15

Source : (Aramco & Directors, 2023, p. 56)

The mortality rate was first recorded in 2023 and reached 0.305, as indicated in Table 2. The implementation of this indicator reflects the company's commitment to enhancing oversight of safety standards and progressively reducing fatal events. In 2021, there was one death; in 2022, there were five; and in 2023, there were three. The number of deaths fluctuated across the three years.

Over the three years, the indicator showed a modest drop in total recordable instances, going from 0.054 in 2021 to 0.042 in 2023. This drop suggests improved overall safety management and fewer documented incidents. In 2021, it was 0.017; in 2022, it dropped to 0.014; and in 2023, it rose to 0.018, indicating no variation in the lost-time injury or sickness rate. Further, there was an increase from 11 Tier 1 process safety occurrences in 2021 and 2022 to 15 in 2023.

Table 3. Aramco's Implementation of Human Capital Dimensions

Dimensions / Years		2023	2024	2025	Remarks
Investment in Human Capital	Total Training and Development Hours (Million Hours)	9.0	13.8	16.6	Continuous growth
	Average Training Hours per Employee (Hours/Employee)	95	140	167	Significant increase
	Participation Rate of Industrial Business Employees in Training Programs	-	-	out of 07 every 10	General year 2025
	Digital Training and E-Learning Sessions (My Learning)	-		+1000000	Non- %82 mandatory
Sponsoring Young Human Capital & Academic Programs	Number of Employed Graduates	1665	1124	708	-
	Number of New Joiners	2200	1986	843	-
	Number of Beneficiaries of Academic Programs	3201	3222	2733	-
	Percentage of Students Joining Top 30 Universities Worldwide	included MIT, Caltech, Cambridge University %82			
Human Capital Retention	Percentage of Employees Participating in Performance Review Meetings	%92	%96.5	98.5%	-
	Employee Experience Index Rating (Satisfaction Rate)	N/A	%88	N/A	-
	Job Experience Framework	Passes through three stages: (Listening, Acting, Improving)			
	Global Awards	Winning WTW's "High Performing Company" Award (First in the Middle East and Transport Sector)			

Source: (Directors, 2025, pp. 54-56)

As illustrated in Table 3, Aramco demonstrates a strong commitment to enhancing its human capital development from 2023 to 2025 across three key dimensions: Investment in Human Capital, Sponsoring Young Human Capital & Academic Programs, and Human Capital Retention. Regarding capacity building, the total

training hours surged significantly from 9.0 million hours in 2023 to 16.6 million hours in 2025, raising the average training hours per employee from 95 to 167 hours, while digital learning surpassed 1,000,000 non-mandatory sessions with 7 out of 10 industrial workers participating in training programs by 2025. Conversely, metrics for early-career recruitment showed a downward trajectory, with employed graduates declining from 1,665 to 708 and new joiners dropping from 2,200 to 843 between 2023 and 2025, alongside academic program beneficiaries decreasing from 3,201 to 2,733, even though 82% of sponsored students successfully attended top 30 global universities such as MIT, Caltech, and Cambridge. Finally, retention initiatives reflected sustained operational engagement, as performance review participation grew steadily from 92% in 2023 to 98.5% in 2025, accompanied by an 88% Employee Experience Index rating in 2024 and the attainment of WTW's "High Performing Company" award.

4.2. Saudi Aramco's Economic and Strategic Intelligence

The financial indicators presented in Table 4 highlight Saudi Aramco's strong operational efficiency and financial performance for the year 2023.

Table 4. Financial Indicators for 2023

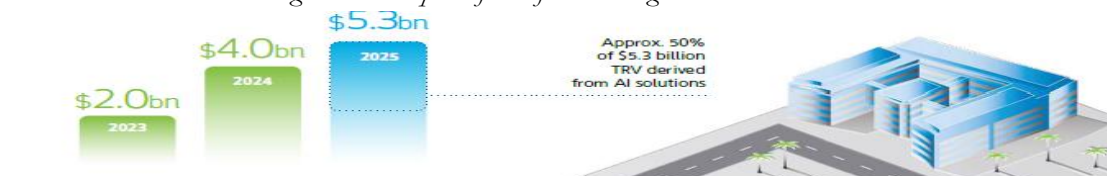
Financial Indicator	Value
Net Income (USD billion)	101
Total Revenue (USD billion)	121.3
Return on Capital Employed (ROCE)	% 22.5

Source: (Aramco & Directors, 2023, p. 02)

These data reflect the company's robust financial solvency, having generated a total revenue of \$121.3 billion and a net income of \$101 billion, which underscores high profitability and operational strength. Furthermore, a Return on Capital Employed (ROCE) of 22.5% demonstrates management's high efficiency in utilizing assets to drive sustainable economic value.

Figure 6 illustrates the expanding financial impact and value generated by Artificial Intelligence (AI) solutions at Aramco over the three-year period from 2023 to 2025.

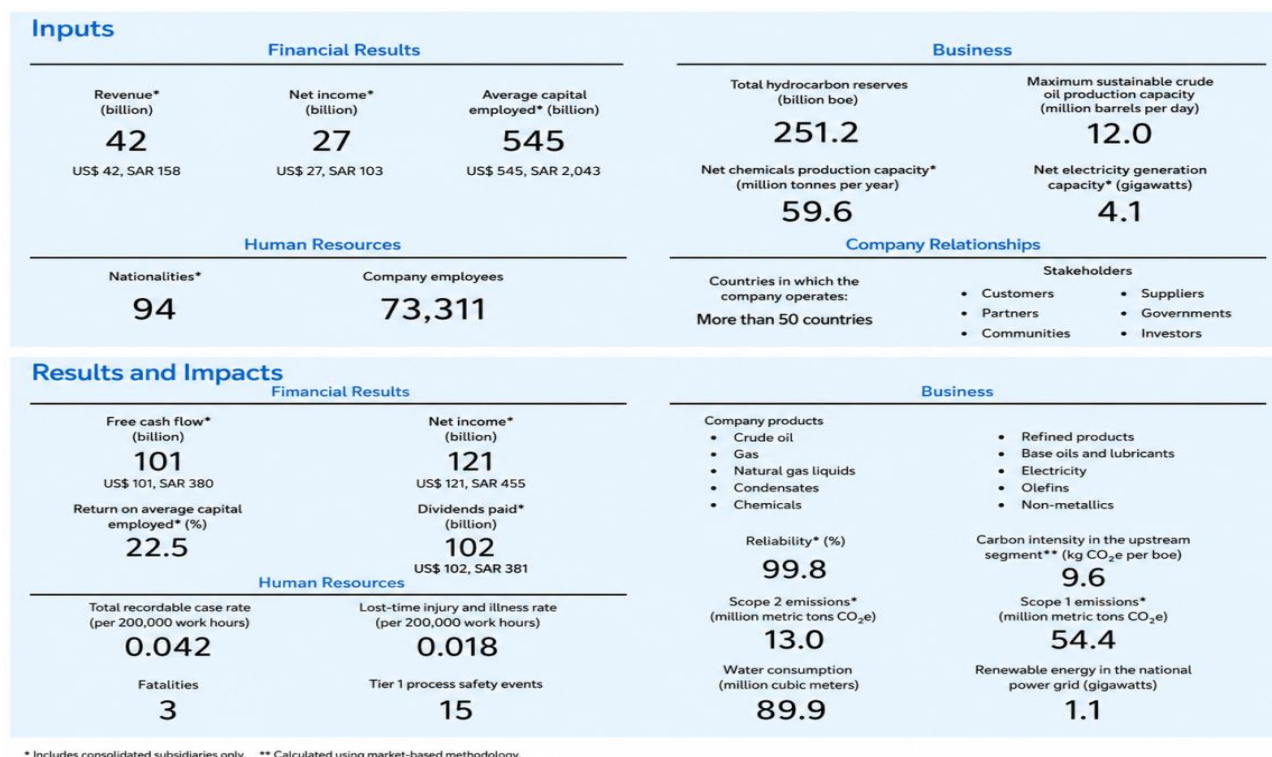
Figure 6. be Impact of Artificial Intelligence and Its Solutions in Aramco



Source: (Directors, 2025, p. 65)

The data demonstrates a clear upward trajectory, with the generated value growing significantly from \$2.0 billion in 2023 to \$4.0 billion in 2024, and reaching a projected peak of \$5.3 billion in 2025. Notably, approximately 50% of the \$5.3 billion total realized value (TRV) by 2025 is directly derived from AI solutions, underscoring the critical role of artificial intelligence as a primary growth driver and strategic enabler in optimizing company operations.

Figure 7. Economic Performance of Saudi Aramco



Source: (Aramco & Directors, 2023, p. 02)

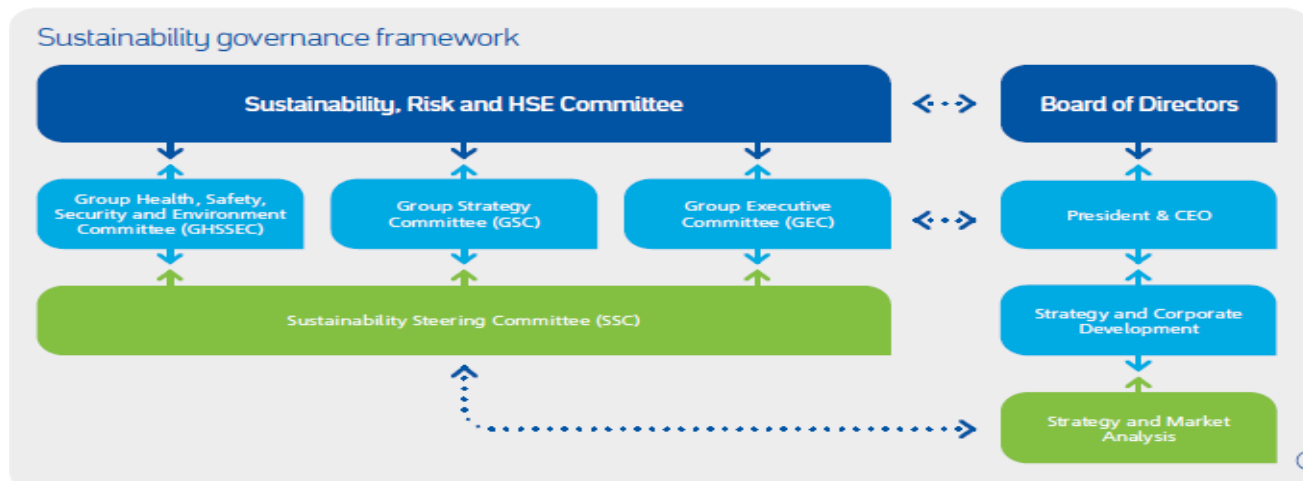
Figure 7 allows us to draw the following conclusion:

- The rise in revenue to USD 121.3 billion reflects the role of economic intelligence in guiding investments toward suitable prospects through sophisticated analysis of data and marketplaces;
- Improved occupational health and safety indicators, such as a decreased lost-time injury rate to 0.018, result from operational efficiency gains made possible by applying economic intelligence to safety and productivity analyses;
- One way the corporation is showing its support for the SDGs is by its investments in renewable energy. It is actively seeking out collaborations in sustainable energy initiatives;
- Investment decisions that back this strategic approach are aided by economic information;
- Going global: Signing deals with nations like South Korea shows that economic intelligence can see prospects outside of the home market and boosts the company's worldwide standing .

4.3. Investing in Human Capital and Economic Intelligence for Saudi Aramco's Long-Term Sustainability

The Sustainability Governance Framework, detailing the structural hierarchy and reporting pathways between high-level oversight bodies, executive committees, and operational units. (Abdullah , Gabriel , Abdulaziz , Ahmed , Talal , & Yufeng, 2022, p. 14)

Figure 8. Sustainability Governance Framework



Source: (Directors, 2025, p. 70)

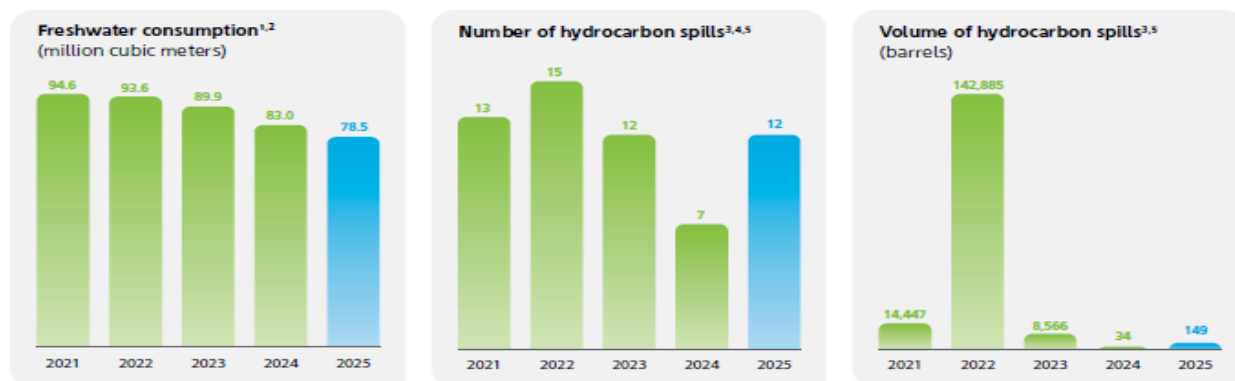
The framework demonstrates a well-integrated, dual-track structure where governance and strategy work in alignment to drive sustainability initiatives. At the top level, the Sustainability, Risk and HSE Committee collaborates directly with the Board of Directors, establishing strategic direction and oversight. Executive execution is driven downstream through specialized management committees—including the GHSSEC, GSC, and GEC—which coordinate directly with the Sustainability Steering Committee (SSC) to monitor operational progress. Concurrently, executive oversight flows from the Board down through the President & CEO to strategic and market analysis teams, ensuring continuous alignment between corporate vision, operational compliance, and market strategy.

4.3.1. Economic Intelligence and Human Capital's Role in Sustainability-Focused Areas The following are included in these domains

Through:

- **Maximising efficiency and production of energy:** The corporation analyses energy demand using economic intelligence and allocates investments to clean energy sources to reach 27% of total energy from renewable sources. This focus helps the business stay in business by reducing environmental-related expenses;
- **Workplace security and new product creation:** A company's human resources are its most valuable asset, and innovation is its backbone. To meet its long-term sustainability goals, Saudi Aramco invests in staff skill development so they can develop innovative technologies that improve operational efficiency and reduce environmental impacts;
- **Ecological and financial spearheading:** The business studies marketplaces and finds green economy-friendly prospects with the use of economic intelligence. Economic intelligence significantly contributes to sustainable decision-making that promotes economic growth, as shown by achieving 64% environmental leadership;
- **Human capital, including investments in education and governance,** empowers social development and governance by strengthening community involvement and supporting social projects. By investing in its employees and communities, the firm has achieved a 71% social improvement rate, a testament to its commitment to sustainable development .

Figure 9. Minimizing environmental impact



Source: (Directors, 2025, p. 75)

Additionally, despite minor fluctuations in the number of hydrocarbon spills, the overall spill volume has decreased dramatically from its peak of 142,885 barrels in 2022 to just 149 barrels in 2025, demonstrating effective environmental risk mitigation.

4.3.2. Critical Facilitating Elements Connected to Academic Prowess and Human Capital

By means of:

- In international relations, economic intelligence plays a major role in laying the groundwork for productive partnerships that foster sustainable energy innovation and collaboration;
- Supporting national capabilities and localization;
- Enhancement of operational processes .

4.3.3. The Strategic Areas of Saudi Aramco and the Function of Economic Intelligence and Human Capital Upstream exploration and production industry leadership

In order to enhance exploration and production methods, the corporation uses economic intelligence to examine geological and market data. The sector also uses specialised human resources to develop technologies that make industrial processes sustainable.

One way to improve operational efficiency is by integrating refining and marketing operations. One way to do this is to use economic intelligence to evaluate supply chains and identify opportunities for integration. To maintain high product quality and ensure these operations run smoothly, trained human capital is essential

Programs to reduce carbon emissions: The business uses economic intelligence to determine the monetary and ecological effects of emissions, and then uses those findings to design solutions that reduce emissions. Innovative human capital capable of developing technology solutions to support carbon-reduction goals is also crucial to the success of these endeavours

Supporting innovation and localisation: The firm helps promote innovation and localisation, which in turn helps national growth. Human capital is essential for effectively implementing economic intelligence-identified prospective areas.

Figure 10. Sustainability Areas at Saudi Aramco



Source: (Aramco & Directors, 2023, p. 03)

The infographic highlights (10) four core pillars driving the company's sustainability and operational framework: Protecting the Environment, Transforming the Energy Sector, Enriching Communities, and Safe Operations and People Development. Under environmental protection, the organization achieved an Environmental Performance Index of 85.6%, issued 12 technology patents, reached an 89.9% water reuse rate, and spent over \$1 billion on initiatives including wildlife conservation and flaring reduction. In transforming the energy sector, it reported 544 million metric tons of Scope 1 & 2 GHG emissions, 130 million metric tons of Scope 3 emissions, and \$9.6 billion in low-carbon technology investments, supported by plans to scale blue hydrogen sales to 11 million tons annually by 2030 alongside key international MoUs. Regarding community impact, a \$475 million social investment disbursement helped yield a 65% performance improvement, benefiting over 65,000 individuals, supporting 18,000 SME entrepreneurs, and achieving a 90.3% localization rate. Finally, operational safety metrics reveal 15 incident-free process safety events, 3 fatalities, a 72.2% asset reliability rate, and dedicated human capital growth through training programs for over 73,000 employees and well-being support for 120,000 workforce members and families.

5. Conclusion

Human capital and economic intelligence were the primary foci of this research because of their importance in ensuring Saudi Aramco's long-term viability. The study finds that economic intelligence supports effective strategic decision-making and increases the company's capacity to respond to climate- and market-related issues. At the same time, investment in human capital improves the company's efficiency and

productivity. In addition to enhancing the company's environmental and social performance, the results show that integrating these two factors helps with economic sustainability.

5.1. Results of the Research

The following is a synopsis of the key results obtained from the theoretical and practical examination:

- Increasing production efficiency and backing the goals of Saudi Vision 2030 are two ways in which investments in human capital help Saudi Aramco achieve sustainability;
- By analysing markets and rivals, economic intelligence helps Saudi Aramco make better strategic choices. By combining economic information with human capital, the business can streamline its operations, reduce costs, and increase efficiency;
- Human capital helps the organisation innovate more, which aids in the shift to renewable energy and other environmentally friendly technology;
- The research shows that Saudi Aramco has gone to great lengths to keep the economic, social, and environmental aspects of sustainability under control, which is essential for achieving sustainability;
- Saudi Aramco's commitment to its employees' professional growth and development via ongoing training and development programs is a key factor in the company's capacity to endure in the long run;
- The company's dedication to environmental sustainability is evident via its substantial expenditures in technology that reduce carbon emissions. The results show that occupational health and safety indicators, such as decreases in specific work-related injury measures, have improved, indicating that human capital management is important for a safe workplace. Supporting sustainable financial returns and increasing the company's overall financial performance, the integration of human capital and economic intelligence has played a role .

5.2. Ideas suggested

The study's conclusions led to the following suggestions:

- Boost innovation and operational process efficiency by increasing investment in staff training and professional development programs;
- Make better economic intelligence tools and utilise them more often in making strategic decisions, especially for investments in renewable energy;
- Work together with leading universities and research centres throughout the world to find creative ways to help the environment;
- Grow the company's social responsibility activities by creating more socially responsible programs and increasing its involvement in local communities.

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