

The Impact of Organizational DNA on Corporate Agility and Sustainability - A Field Study on the Egyptian Petroleum Sector (Oil & Gas Companies)

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Abstract Purpose: Egypt's energy industry is going through a significant shift, particularly concerning the natural gas industry. The Egyptian government has now implemented practical measures to promote Egypt as a regional oil and gas center after becoming aware of the potential benefits brought about by these developments, as the petroleum sector is one of the essential sectors affecting the economy of Egypt. Therefore, this study examines corporate DNA's impact on corporate agility and sustainability in the Egyptian Petroleum sector. The results show that the independent variable affected both dependent variables significantly. **Aim and objectives:** Analyze the extent to which Organization DNA influences agility and sustainability in Egypt's oil and gas industries. **Research methodology:** the paper adopts the positivism philosophy and follows a deductive approach. Using a quantitative design with survey strategy targeting, the Sample size of 381 from 20 companies from all sector divisions operating in Egypt. **Main results:** The study found that dimensions of organizational DNA directly impact both agility and sustainability. **Recommendations:** Businesses try to qualify employees to prepare them for growth and change. Businesses must define flexible, realistic, achievable objectives structured, controlled, and prioritized within the industry by their importance. **Limitations and Future Work:** researchers should consider that participants with low levels of English literacy would not be able to reply to the survey. Future research should include bilingual questionnaires to boost participation. The study focused on Organizational DNA (as an independent variable). Therefore, it is suggested to study the factors affecting Organizational DNA.

Keywords: organizational DNA, corporate agility, corporate sustainability, petroleum sector, Egypt

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1. Introduction

Organizations are dynamic, interconnected entities. They operate as a system, with each component (or the organization's DNA) strengthening or weakening other parts around it. When in good alignment, it makes the organization more resilient and thriving in an ever-changing business environment. When deviating, the opposite is true [1].

"The DNA of an agile culture is among the people in the organization and not so much in the structure, processes, and systems." Agile Business Consortium, towards Agile Culture, requires people to have an agile mindset, requires unleashing the contribution and productivity of individuals, both individually and collectively, requires removing barriers to rapid response, and requires a systematic view that creates a common goal that eliminates collaborative friction [2].

Agility, as a noticeable result of an organization's performance, is the behaviors and skills of the organization's managers in taking and implementing strategic actions. The key to strategic agility is not just an analytical strategy of superior minds or a thoughtful and effective organizational design but a set of managerial practices, behaviors, skills, values, and beliefs that drive the top management of the organization in developing and implementing strategic commitments [3].

DNA carries the molecular instructions for growth, development, and function. Therefore, if an organization can include agile culture in its DNA, it will be sustainable and guide "the way things are done here." For an organization, having the ability to respond, adapt, and succeed in the face of uncertainty is compelling.

This study will attempt to examine the role of Organization DNA in agility and sustainability applied to oil and gas companies in Egypt in light of the importance of these topics. It was crucial to find an effective method

of motivating these organizations to embrace Organization DNA, agility, and Sustainability as an important and influential basis for the effectiveness of performance, which in turn is reflected in increased productivity. Due to the oil and gas industry's importance to the economy, this research focuses on it. As Egypt has significant energy resources, whether in traditional fossil fuels or renewable energy, and oil and gas are among the most dynamic industries in Egypt, and these capabilities have enabled it to play a vital role in international energy markets [4].

Over the past two years, the petroleum sector has worked with a new strategy in line with Egypt's Vision 2030 and began implementing an ambitious program to develop and modernize the petroleum sector and raise its efficiency in cooperation with major international specialized expertise houses to increase the sector's contribution to the comprehensive development of Egypt by working more efficiently, attracting more investments, and training Qualified young petroleum cadres to maximize revenues, sustainably develop Egypt's natural wealth and maximize its value.

In order to secure the ongoing growth of this industry, the government makes several strategies and investments.

For example, Egypt is implementing seven refining projects nationwide with estimated investments of \$8.031bn [5].

It is essential to recognize the contribution that the oil and gas sector makes to the economy of emerging nations and the achievement of their peoples' aspirations for sustainable development.

All these new processes dictated to the petroleum sector companies the need to reconsider their operations to catch up with progress by re-engineering by exploiting the tremendous progress in communications and information technology, using advanced technology for targeted operations, getting rid of rigid policies that prevent their exploitation, and allowing workers to innovate by introducing new through exploit this technology

As a result of the scarcity of studies and research that examine the effects of organizational DNA on corporate agility and sustainability, it is argued that this research has distinct and distinctive qualities. The Egyptian oil and gas industry will be impacted, which would have a favorable effect on the Egyptian economy, if the organizational DNA is identified and the linked problems are resolved by the organizations.

1.1. Research Statement

It is essential to focus on Organization's DNA and activate its role in promoting corporate solid Agility and Sustainability to meet these challenges, so that is one of the most important strategic objectives of these corporates. This study revolves around demonstrating the impact of Organization DNA on achieving Agility and Sustainability by applying it to Oil and Gas companies in Egypt.

Therefore, this study seeks to answer some questions, which can be summarized as follows:

- What is the strength of the Organization's DNA in Oil & Gas companies?
- What is the strength of Agility and Sustainability in Oil & Gas companies?

- How Does Organization DNA Make Organization more Agile and Sustainable in Oil & Gas companies?

1.2. Research Gap

A review of previous studies revealed diversity in the applied fields, but there was a shortage and deficiency in dealing with the oil and gas companies. Therefore, the research gap is as follows:

- Deficiency in the study of the Organization DNA in oil and gas companies.
- Deficiency in studying the Organization's DNA and its impact on Agility and Sustainability in Oil and gas companies.

Therefore, the current study will address this deficiency by addressing the issue of Organization DNA and its relationship to Agility and Sustainability, specifically in oil and gas companies in Egypt.

1.3. Research Objectives

The main objective of this research is to study and test the effects and the relationships of the variables identified:

- Standing on the strength of the Organization's DNA in Oil and gas companies in Egypt
- Measuring the Agility and Sustainability of Oil and gas companies.
- Determine the extent of the impact of Organization DNA on corporate agility and Sustainability in Oil and gas companies.

1.4. Research Questions

- What is organization DNA?
- What is corporate agility?
- What is corporate sustainability?
- What is the relationship between organization DNA and corporate agility and sustainability in the Egyptian petroleum sector?

1.5. Research Significance

- The purpose of this study is to help close the research gap in studies and research on the idea of organizational DNA, specifically in relation to corporate practices that help achieve agility and sustainability. The study also serves as a response to many earlier studies that called for more research on this subject due to their significant value in enhancing academic libraries. This study might also give researchers and academics a database to use when they do more research in this area.
- The study's field of application determines its significance, and oil and gas businesses were crucial to Egypt's development. The industry has been essential to the government's economic reforms, which have contributed to the development of an inviting climate for investors. In 2020, the oil and gas industry provided 24% of Egypt's GDP and was a crucial sector in the nation's economic recovery following difficulties since 2011.

- The study is significant because more businesses are becoming interested in organizational DNA as a critical value for overcoming obstacles and attaining objectives. The study's significance also stems from the fact that it addresses a crucial administrative issue that is central to the operation of oil and gas businesses, which operate in a setting marked by growth, change, and renewal and place a high value on quality and efficiency. The primary tools that allow it to achieve its objectives with perfection.

2. Organizational DNA

Organizational DNA is one of the metaphors that have been recently considered in organization and management subjects that describe organizations with a genetic approach. Analysis, discovery, classification, and description of inheritance facts and variations are considered important targets in genetics [6].

Corporate DNA or regulatory DNA is a metaphor based on the biological term DNA, which is the molecule that encodes genetic instructions in living organisms. The term organizational DNA can be used as a metaphor for the fundamental organizational and cultural design factors that define an organization's personality and determine whether it is strong or weak in implementing strategy [2].

Organizational DNA expresses a way of analyzing, ideologically, clarifying, and thinking about organizations, in which their models, managerial functions, leadership, and concepts of other organizations are considered. It uses quite diverse approaches to defining organizations rather than organizations' shapes and models by considering teamwork, decision-making, and human workforce development, as separate or at least independent variables [7].

2.1. The Importance of Studying Organizational DNA

The success or failure of a company in today's market is often not a matter of strategy; it is the Execution function. Execution is the product of organizational DNA. Organizational DNA is a technique or means used to identify the difficulties facing an organization and discourage its performance, along with ways to overcome these difficulties [8].

When companies have problems with implementation, they just have to look at their organizational structure, decision-making rights, motivations, and information flows for answers. These constitute the core of the organization's identity and distinct personality, the 'nucleotides' There are four elements that may be called chromosomes that determine the regulatory gene, which is the right to a decision, information, motives, and structure [9].

Organizational DNA plays an effective role in defining organizations and their leadership and management functions, such as decisions, organizational structure, teamwork, and communication, and identification of

corporate DNA can help improve innovative performance in organizations [10]. In the pursuit of performance improvement, attention has been directed to organizational excellence to remain competitive through innovation and creativity.

In summary, organizational DNA is an important concept for understanding the fundamental characteristics and values of an organization. Understanding an organization's DNA can help leaders shape its culture, decision-making processes, strategy, and approaches to change management to support the organization's goals and values.

2.2. The Building Blocks of Organizational DNA

The DNA of living organizations is made up of four building blocks, which combine and recombine to express distinct teeth or personalities. These organizational building blocks (structure, decision rights, motives, and information) largely determine how a company looks and behaves, both internally and externally.

Decision Rights: Who decides what? How many people are involved in the decision-making process? Where does one person's decision-making power end and another person's begin? [7].

Motivators: What career goals, incentives, and alternatives do people have? How people are financially and non-financially rewarded for what they achieve? What are they encouraged to care about, by any means, explicit or implicit? [7].

Information: What metrics are used to measure performance? How are activities coordinated, and how is knowledge transferred? How are expectations and progress communicated? Who knows what? Who wants to know what? How is information transferred from the owners to the people who request it? [7].

Structure: What does the organizational hierarchy look like? How are lines and boxes connected in an org chart? How many layers are in the hierarchy, and how many direct reports are there for each layer? [7]

In summary, the building blocks of organizational DNA include elements. These elements work together to define an organization's fundamental characteristics and values, and can have a significant impact on its behavior, decision-making, and performance.

The construction of organizational blocks and their groups determines the behavior of the organization and the success or failure in achieving organizational goals.

2.3. Organizational DNA Dimensions

Organizations are dynamic, interdependent entities. They function like a system with all the components (or DNA of the organization) in it. When well aligned, they make the organization more resilient and successful in an ever-changing business environment. When they are misaligned, the opposite is true. The following are the various components that make up the DNA or culture of an organization. [1]



Figure 1. Organizational DNA [source: <https://www.syngineering.solutions/dna-organization>]

- **Purpose:** Why the organization exists. What industry or market does it operate in? What products and services does it offer, and to whom? In achieving goals?
- **Priorities:** What the organization values and makes decisions on. How are these factored into what organization chooses to focus on or assign resources to at any given point in time? How well-known and understood are they? How often are they reviewed? Are resources distributed to the right places?
- **Process:** Ways of working to achieve a specific output, including inputs, dependencies, and interfaces.
- **People:** Competencies and capabilities to get work done. Is staff empowered at the right level to make key decisions and progress their work when needed?
- **Patterns:** Relationships between different roles, processes, and outcomes. What does an organization's structure look like?
- **Power:** How authority and decision-making are recognized and distributed? What roles or individuals are accountable for strategy?
- **Policies:** How organizations operationalize performance expectations and staffing decisions.

In summary, Organizational DNA is a term used to describe the underlying principles, assumptions, and cultural norms that influence how an organization functions. By knowing these aspects of organizational DNA, businesses may see places where they might need to make adjustments in order to advance their desired culture and values and build a more resilient and responsible organization.

3. Corporate Agility

Business agility refers to an organization's ability to respond quickly and effectively to changes in its environment. This can include a variety of factors such as: Changes in customer needs, market conditions, technological advances or other external factors affecting the organization's operations.

The concept of agility appeared as a term used in research at the beginning of 1991 through the efforts of a group of researchers at the Institute (Iacocca) at The Hague University in a study entitled (The Strategy of Manufacturing Enterprises in the Twenty-first Century: From the Perspective of Industry Experts). [11].

Agility is the efficiency with which organizations respond to continuous change by consistently adapting. The process of continuously adapting to changes in the environment results in changing the entire organization slowly without sensing that change is taking place. [12]

3.1. The Importance of Corporate Agility

Agility enables organizations to deal with constant change. It allows them to thrive in a world of increasing volatility, uncertainty, complexity, and ambiguity. The continuous and remarkable increase in agility is driven by the passion of those organizations who prefer to work in this way, which are the leading and innovative organizations, and for these organizations: the only way to sustainably deal with today's market is to embrace agility, companies must become smart to keep pace with the rapidly changing business environment in which they are located, and since software management has become fundamental to the success of most businesses, agility has become the key to managing everything [13].

In an agile organization, self-organizing teams continually deliver new value to customers, and because work is done in an iterative manner with continuous interaction with users, an organization can continually improve what it does for each individual user, sometimes in near real-time. Many teams work together to tackle enormous, complex challenges in a coordinated manner [14]. When agility is implemented correctly, teams operate within a business model in which the organization creates value for itself and the customer, and everything—the work that is done, the information, the money—moves easily and in an integrated way, enabling it leads to low or no marginal costs and huge returns [15].

The importance of agility represents the main key to the success of organizations and taking advantage of the opportunities available to them in the changing environment and facing the institutions of changing situations by using them to evaluate their previous work and orient themselves within the new developments. Entering into strategic alliances or breaking away from them quickly, in addition to its ability to search for basic capabilities and capabilities within the organization to identify strengths and work to exploit them, as well as identify the business environment, take advantage of appropriate opportunities, and confront threats.

It is believed that Organizations need to foster a culture that emphasizes adaptability, quickness, teamwork, creativity, and customer focus in order to develop business agility. This entails giving individuals the freedom to make decisions, simplifying procedures, and exhibiting strong leadership that fosters creativity and agility. Organizations can be better prepared to handle the possibilities and challenges of the future by being more agile.

3.2. Corporate Agility Laws

Organizations that have embraced agility have three basic characteristics:

- **Small Team Law:** The number one global characteristic of agile organizations is the law of the small team, where agile practitioners share a mindset that work should, in principle, be done in small, independent, cross-functional teams working in short cycles on relatively small tasks and getting constant feedback from the end customer or end user [16].
- **Customer Law:** The second characteristic of agile organizations is the law of the customer. Agile practitioners are deeply concerned with delivering value to customers, and the critical importance of the customer is recognized in the first principle of the agile manifesto: [17]
- **Network Law:** Under this concept, an organization is a network of high-performing teams, and in these organizations, managers realize that efficiency resides throughout the organization and that innovation can come from anywhere and from anyone in the organization, and the entire organization, including senior management positions, their focus is on delivering more value to customers, agile teams take the lead on their own, and interact with other agile teams to solve common

problems, and in fact, the entire organization shares a common mindset in which the organization is viewed and operated as a network of high-performing teams [17].

Thus, agility operates according to three laws, the first: is the law of the small team, the second: is the law of the client, and the third: is the law of the network. Together, they generate the fundamentals of the organization of agility, and the three laws enable us to understand the myriad agility practices that may or may not be applicable in any given context. To transform the organization into agility.

3.3. Reasons to be Interested in Agility

Organizations are currently facing many challenges as a result of rapid and successive environmental changes and developments and the escalation of the forces of change in different parts of the world. Undoubtedly, this requires organizations to adapt and harmonize, take into account the requirements of change and development, and face internal and external challenges affecting the survival and growth of these organizations [18].

These days, organizations need the ability to adapt to environmental changes and speed in making the right decisions. In light of the high degree of uncertainty of the external environment conditions surrounding companies, as well as the constantly turbulent environment, strategic planning by traditional methods no longer works [19].

Strategic agility and agile business need leaders who develop adaptive strategies and communicate well, enabling teams to identify opportunities to implement these strategies in innovative and previously unanticipated ways [16].

Businesses are drawn to agility for a number of reasons, including: Competitive Advantage as Business agility enables businesses to respond more quickly and successfully to market developments, giving them a competitive advantage. Capitalizing on these opportunities can help companies stay ahead of the competition. Innovation, Agility and innovation are closely related, as agility requires organizations to be open to trying new strategies and concepts. Business agility gives companies the ability to react quickly to unforeseen events or market changes, which can help them manage risk more effectively. Organizations can do this to reduce negative impact on their business and avoid future losses. Finally, agility can increase employee engagement by giving employees more freedom to make decisions and contribute to the success of the organization. This can result in higher job satisfaction, productivity and employee retention.

3.4. Building an Agile Organization

Agile organizations are able to be resilient and comfortable with being in a state of discomfort associated with change. This requires leaders to be comfortable with interruption and, in doing so, overcome deep human fears of change, uncertainty, and loss of control.

- **Committing to being agile as a strategic imperative:** An agile organization is committed to being agile from top to bottom, recognizing

organizational resilience as a strategic organizational ability, which in turn drives behaviors and business practices to be flexible across an organization's value creation system [20].

- **Commit to rapid cycles of sensing, thinking, and action:** The core of resilience is thinking in terms of rapid cycles of sensing, thinking, and action, adapting an organization's capabilities to respond in relation to the business practices and behaviors that enable it. Think in terms of business practices and behaviors that promote trust-based collaboration systematically across an organization's value creation system [20].

Accepting the commitment to be an agile organization, and embracing an agile mindset, opens the door to creativity in building capacity and agile practice when there is a will for the organization to be agile.

- **Continuously surface and remove obstacles to agility:** This includes both visible and invisible obstructions. Visible hindrances include any form of wasted time and delay, such as delayed decision-making, bureaucratic practices, excessive meetings, etc. Invisible barriers include collaborative friction, lack of psychological safety, honesty, transparency, and trust, low levels of people's participation and energy, and a work environment that is not conducive to cognitive work [20].

In conclusion, creating an agile organization requires a comprehensive approach that emphasizes continuous learning, process simplification, technology investment, the creation of cross-functional teams, and the promotion of an agile culture. These actions can help organizations respond more quickly and be better prepared to take advantage of possibilities when the business environment changes quickly.

3.5. Dimensions of Corporate Agility

- **Sensor:** It is a diverse range of capabilities required by the firms to identify and comprehend the critical forces of environmental change, which may include a change in customers' preferences and competitors' actions, government regulatory and legal policy changes, change in economic growth, IT infrastructural changes, etc. [21].
- **Response:** After accurately sensing the environmental changes, it is vital that firms make the right response toward them, such as an opportunity available to introduce a new product, and the function of this dimension is to make the organization in a state of permanent motion, and this falls on the shoulders of the executive management by directing individuals to better perform the duties and tasks assigned to them because This leads to achieving efficiency, effectiveness, and speed of response to the surrounding variable [22].
- **Efficiency:** Organizations respond to continuous change by consistently adapting. The process of continuously adapting to Changes in the environment results in changing the entire organization slowly without sensing that change is taking place. The ability to fundamentally reshape organizational

resources, modify business processes, and introduce new products, services, and price models to the market in a cost and timely manner. [23]

The speed of response is also a new source of competitive advantage, as many companies such as (Federal Express), (McDonald) compete mostly based on speed, and this requires the organization to be described as fast-moving, as well as delegating the decision-making process to lower levels in the organization, The work is done by teams of diverse skills [19].

From the above, it is clear that agility is one of the essential requirements for the success of institutions and ensuring their survival and continuity, and that it is a competitive advantage that accumulates over time to become sustainable to enable the institution to have a good vision to know its position among the competitors in the market.

4. Corporate Sustainability

Corporate sustainability is the capacity of an organization to function in a way that satisfies current requirements without risking the ability of future generations satisfy their own needs. This includes overseeing resources, minimizing waste and pollution, and taking into account how corporate actions may eventually affect the economy, society, and environment.

In the current business climate, corporate sustainability is becoming more and more crucial as stakeholders like consumers, investors, and governments place a greater focus on environmental and social responsibility.

The topic of "corporate sustainability" has received a lot of attention recently in the business, academic, and popular press. Business sustainability is gaining considerable attention in the aftermath of the 2007–2009 global crisis as a means to ensure the long-term sustainability of corporates and their accountability to a variety of stakeholders. Global investors demand regulators require public companies to disclose their economic, governance, social, ethical, and environmental (EGSEE) sustainability performance [24].

4.1. Sustainability Concept

The concept of Corporate Sustainability also appeared in 1980 in one of the publications of the International Union for the Protection of the Environment. To develop and improve human life, livelihood, and well-being at the present time and without compromising the integrity of the environment, vital resources, and systems, thus ensuring that future generations have the right to a decent life, prosperity, and availability of resources [25].

Sustainable development is also defined as real development with the ability to continue and communicate from the perspective of its use of natural resources, which can occur through a strategy that takes the environmental balance as its controlling axis for that balance that can be achieved through the social-environmental framework, which aims to raise the livelihood of individuals through The political, economic, social and cultural systems that maintain the integrity of the ecological framework [26].

This concept of sustainable development also carries the principle of the need for the world to confront the dangers of environmental degradation that must be overcome without abandoning the needs of economic development as well as equality and social justice [27].

4.2. Foundations of Sustainable Development

The idea of addressing the demands of the present without sacrificing the capacity of future generations to meet their own needs is known as sustainable development. Sustainable development is significant because it acknowledges that what we do now affects how future generations will be able to develop. It also acknowledges that environmental responsibility and social responsibility are necessary for achieving economic growth and social advancement.

The concept of sustainable development is based on a set of foundations or guarantees aimed at achieving its goals, the most important of which are:

- That development takes into consideration the preservation of the characteristics and level of performance of the current and future natural resources as a basis for the partnership of future generations in the available resources of those resources [28].
- Development in view of this concept is not based on the value of the proceeds of economic growth as much as it is based on the quality and method of distributing those revenues, the consequent improvement in the living conditions of citizens in the event of linking between development policies and the preservation of the environment [25].
- The current investment patterns must be reviewed while promoting the use of technical means more compatible with the environment aimed at reducing the manifestations of damage and upsetting the ecological balance, and preserving the continuity of natural resources [29].
- It should not be enough to modify investment patterns and production structures; it is also necessary to modify the prevailing patterns of consumption in order to avoid waste, waste of resources, and pollution of the environment [28].
- The concept of return from development must include everything that brings benefits to society so that this concept is not limited to return and cost, based on the return of indirect environmental effects and the consequent social costs that embody the deficiencies in natural resources [30].

The most important thing that must be clarified when talking about sustainability is that sustainable development goals SDG's that were set by the United Nations in 2015 with the aim of achieving them by 2030. And there are seventeen goals that represent the three dimensions (economic - environmental - social)

4.3. Sustainability in Business Practices

The concept of sustainability is a business approach that encourages institutions to integrate a number of socially, environmentally, and economically responsible practices into their daily work in addition to their dealings with

relevant authorities (such as employees, customers, the environment, the local community, and suppliers).

Sustainability is a top priority for most of the leading companies across business sectors, which continually announce specific initiatives, commitments, and goals to enhance their sustainability practices. However, there is still a clear gap between words and deeds. In addition, sustainability commitments do not appear to be as rigorously pursued as other business objectives [31].

Responsibility urges companies to balance long-term interests with immediate returns, with the goal of pursuing environmental and inclusive goals. Moves toward sustainability include a wide range of potential actions, such as reducing emissions, reducing energy consumption, sourcing products from fair trade organizations, and ensuring the disposal of physical waste. Its carbon footprint is also minimal [31].

Therefore, the introduction of environmental concepts into corporate practices has become mainstream. Companies that do not follow this pattern are more likely to lose investor credibility, as well as income generation opportunities and the potential to become role models in society.

It is deduced that corporate sustainability is an approach to business that combines economic, social, and environmental factors into decision-making with the aim of generating long-term value for the organization and society at large. With an emphasis on encouraging sustainability and minimizing detrimental effects on the environment and society, it is about balancing the interests of stakeholders, including shareholders, workers, consumers, suppliers, and communities. Corporate sustainability is significant because it acknowledges that businesses have a responsibility to take action in ways that encourage economic development as well as social and environmental well-being. The interconnection of the economic, social, and environmental systems is also acknowledged, as is the necessity of coordinating these factors in order to provide long-term sustainable value.

4.4. Dimensions of Sustainability

Organizations may become more sustainable and responsible, better serve the demands of stakeholders, and provide long-term value for the company and society at large by focusing on these components of corporate sustainability

Sustainability is characterized by multiple and different dimensions that overlap with each other; therefore, focusing on them would make progress in achieving sustainable development. ESG-rated companies have a lower cost of debt and equity, and sustainability initiatives can help improve financial performance while boosting public support, according to McKinsey. The strongest motivators for adopting a sustainable mindset in 2017 were alignment with company goals, missions, and values; Building, maintaining, or improving reputation; meeting customer expectations; and developing new growth opportunities [31].

Dimensions are as follows:

- Environmental Sustainability: The environmental dimension of sustainable development is of great importance because it came to address the

relationship of development with the environment by laying the foundations on which the limits should not be exceeded. This dimension consists in preserving natural resources and optimizing their use on a sustainable basis, anticipating what may happen to ecosystems as a result of development for precaution and prevention [29].

The environmental dimensions can be summarized as follows: not damaging the soil by using pesticides, destroying vegetation cover, working on water conservation, that is, putting an end to wasteful uses, improving the efficiency of water networks, and reducing the refuges of biological species, that is, making the earth rich in biodiversity for future generations and protecting the climate from global warming. Thermal energy, rational use of energy, and mineral resources [31].

This concludes that, the goal of environmental sustainability is to improve the long-term resilience and health of natural ecosystems while minimizing the negative impacts of human activities on the environment. It recognizes that the environmental impacts of human activities can be serious and that it is vital to manage natural resources in a way that preserves their availability for future generations. Promoting renewable energy, reducing waste and conserving resources are all part of environmental sustainability. In addition, it includes reducing the negative impact of human activities on the environment and protecting and restoring natural ecosystems and biodiversity.

- **Social Sustainability:** The most important elements of the social dimension are stabilization of demographic growth - social mobility - health and education - Popular participation - cultural diversity - achieving social justice among the members of the current generation on the one hand, then between members of the current and future generation on the other hand [32].

It is not possible to talk about corporate sustainability without referring to that social pillar, which is usually associated with another concept, which is social licensing. Sustainable work must have the support and approval of company employees, stakeholders, and society at large [33].

In conclusion, Social sustainability is a dimension of sustainability that focuses on promoting social justice and addressing social issues. It recognizes that economic and environmental sustainability are linked to social sustainability and that addressing social issues is critical to achieving sustainable development. Social sustainability includes promoting diversity and inclusion, ensuring fair labor practices, supporting community development and promoting human rights. It also involves working with local communities and understanding their needs and priorities, and working together to find solutions to common challenges.

- **Economic Sustainability:** It is intended to improve the standard of living of individuals by meeting their needs for goods and services. The economic dimension of sustainable development revolves around the current and future repercussions of the economy on the environment, as it raises the issue of selecting, financing, and improving industrial technologies in the field of employing natural resources [26]. The economic dimension can be summed up as follows:

- The share of per capita consumption of natural resources.
- Stop wasting natural resources by changing consumption patterns that threaten biodiversity.
- The responsibility of the developed countries for pollution and its treatment, as the global pollution problems fall on the shoulders of the industrialized countries, the reduction of the dependence of developing countries.
- Natural resources must be devoted to the purposes of continuous improvement in living standards, as there are close links between poverty, environmental degradation, rapid population growth, backwardness resulting from colonial history, and absolute dependence on capitalist forces, reducing income inequality, thus an equitable distribution of resources, reducing military spending.

This pillar is sometimes referred to as good governance or good corporate governance, but what is important is that corporate sustainability cannot be achieved without profit; for enterprises to be sustainable, they must be profitable [27].

Accordingly, it becomes clear that corporate sustainability is not just a theoretical concept but is imperative for all organizations and institutions operating in all societies that seek to achieve comprehensive sustainable development. Administrative leaders who apply the principles of sustainability in the activities and operations of their organizations do not only serve their organizations but also their countries in order to achieve real, sustainable development towards a better life for current and future generations, a leadership that has the ability to achieve a state of an effective balance between economic, social and environmental goals within a framework of excellence and leadership. A leadership that believes in the importance of participation through conscious communication and fruitful cooperation between it and its subordinates, between all parties involved in decision-making and problem-solving processes.

5. Relationship between Variables

5.1. The Relationship between Organizational DNA and Agility

When DNA identified the strategic capabilities of its organization a few years ago, agility was chosen as one of them. Agile methods have already been applied in DNA projects, but the goal was to spread agile thinking on a larger scale. Agile organizations focus on shorter time-to-value as an integral trait in their DNA.

Well, speaking of such an important and necessary, but equally difficult, need for flexibility, how is agile management or agility possible? What should an organization pay attention to in order to become agile? How can organizational flexibility be increased, and how can the outcome be transformed into success as consumer satisfaction? In "DNA of Agile Management" starts with the premise that companies need to become more resilient. The organization will find answers to the above questions. In this sense, we will examine resilient outlook, evolutionary

growth, experimental processes, team composition, self-management, individual and team motivation, goal orientation, commitment, transparency, a culture of continuous improvement, and change leadership.

This has implications for the way of thinking within agile organizations and what is related to them in order to face contemporary challenges in a more comprehensive and in-depth manner. The importance of innovation and innovative thinking stems from the necessary strategic agility that is compatible with these changes. The organizational DNA that supports innovation also contributes to introducing new concepts that improve the internal environment and the quality of the organization's performance [18].

Many giant corporations have engaged in a wave of quick training as a result of this kind of magical thinking, only to discover that the benefits of agility do not materialize, the organization remain the unchanged, and the organization comes to a conclusion that “agility does not work.” The reality is that agility includes changing the culture of the entire organization, not just learning a new management approach. [34]

In summary, the fundamental principles, assumptions, and cultural norms that influence how an organization functions are referred to as its organizational DNA. It is the unnoticeable thread that binds a group of people together and shapes their behavior. The capacity of an organization to react swiftly and successfully to shifting market conditions, consumer wants, and other external variables is referred to as agility. Agility and an organization's DNA have a close link. The capacity of an organization to be flexible may either be enabled or constrained by its DNA. Overall, the agility of an organization may be significantly impacted by its DNA. Businesses that understand the value of agility and are prepared to change their DNA to foster agility are more likely to succeed in the current, quickly evolving business climate

5.2. The Relationship between Organizational DNA and Sustainability

All successful organizations have one thing in common: DNA creates sustainable success. One of the common elements to achieving sustainable success is the assessment and input of the right DNA. Organizations use concepts such as strategic planning, alignment, prioritization, and culture to address the set of success. Since each of us has a reference point that determines our understanding of the world around us, the use of DNA helps people internalize the concept of an improved organizational DNA.

Sustainable DNA through a three-stage cycle of change: Diagnose, Define, and Develop.

By closing consensus gaps and operating more sustainably, businesses can deliver greater financial value in tandem with positive environmental and societal impact [35].

Several practices have been identified that deepen relationships with stakeholders and bring their perspectives into the heart of the work. These practices form the DNA of Sustainability and enhance focus on stakeholders in three ways: driving human connections, collective intelligence, and accountability at all levels [35].

Strong sustainability DNA is associated with higher financial value and sustainable impact for all stakeholders. Companies with a strong sustainability DNA are more likely to achieve ESG impact. By building strong, mutually beneficial relationships with diverse stakeholders, leadership teams can also enhance financial performance. The Sustainability Organization Index (SOI) ranks nearly 4,000 companies on the Evidence of Market Resilience to ESG Support Practices in 146 areas.

The econometric analysis finds a positive relationship between these index scores and measures of financial and non-financial performance at the company level. In other words, the strength of the company's sustainability DNA is fundamental to the ability of companies to operate profitably and rationally. Companies with the strongest sustainability DNA are more likely to deliver financial value and a lasting positive impact on society and the environment [35].

In conclusion, the organizational DNA and sustainability are closely related. The ability of an organization to remain sustainable may either be enabled or inhibited by its DNA. Environmental and social responsibility are frequently valued in the cultures of organizations that place a high priority on sustainability. They frequently place a higher priority on sustainable practices include lowering emissions and waste, encouraging renewable energy, and consulting with stakeholders to better understand their requirements. In order to build long-term sustainable value, these organizations also frequently have a long-term view and are prepared to make challenging choices and concessions.

In general, the sustainability of an organisation may be greatly influenced by its DNA. Businesses that understand the significance of sustainability and are ready to modify their DNA to support sustainability have a higher chance of long-term success and value creation for all stakeholders.

5.3. Proposed Research Model

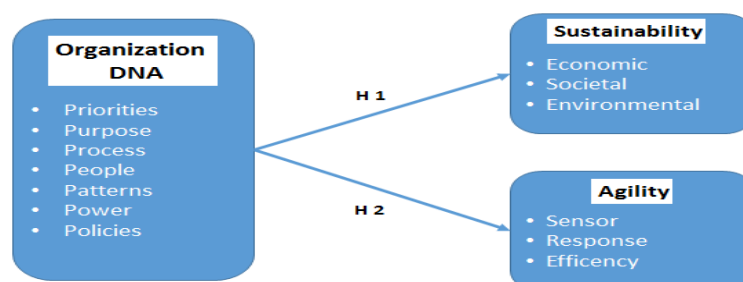


Figure 2. Model framework of the study

The main framework of the study may be represented by the model that is shown above:

5.4. The Hypothesis of the Research

- H1: Organizational DNA positively affects Organizational Agility
- H1a: Organizational DNA positively affects Sensor
- H1b: Organizational DNA positively affects Response
- H1c: Organizational DNA positively affects Efficiency
- H2: Organizational DNA positively affects Organizational Sustainability
- H2a: Organizational DNA positively affects Economic
- H2b: Organizational DNA positively affects Societal
- H2c: Organizational DNA positively affects Environmental

6. Research Methodology

6.1. Population

The target population is mainly personnel of the Egyptian oil and gas industry makes up the study's sample since the aim of the investigation is to examine how organizational DNA impacts agility and sustainability in oil and gas companies. The research, which was carried out in Egypt, focused on the country's petroleum sector, including both Egyptian oil companies (EOCs) and international oil companies (IOCs).

The holding companies managed about **147** companies divided into four main sectors:

Public sector companies	12 companies
Joint venture companies	84 companies
Investment companies	41 companies
Petroleum service companies	10 companies

In addition to the international oil companies (IOCs), the study focused on a specific number of companies based on the cluster sampling technique. Based on the above information, the total employees' number in the Egyptian oil and gas sector is **(285,000)** which is considered my research population.

6.2. Sample Size

The study focused on a specific number of companies based on the cluster sampling technique. Therefore, the study focused on **(4)** companies from each group (The Public sector companies, joint venture sector companies, Investment sector companies, service sector companies, and IOCs) with a total of **20** companies. Based on the selected companies, the total employees' number is (44,000) which is considered my research population. According to [36], the Sample size represents the population calculated by the following formula: N

(Population Size) = **44,000**; the Confidence Level is **95%**, a Confidence interval is **5%**, and the sample size will be **381**.

6.3. Research Strategy

This study relies on a self-administered questionnaire that was developed in accordance with prior research as part of its survey methodology. Surveys are one type of quantitative methodology [36]. When combined with quantitative design and the deductive method, the survey strategy is successful.

The researcher uses a survey strategy and the tool is the questionnaire to collect the relevant data. It is correlational as the researcher is aiming to test the relationship between the organizational DNA and corporate agility and sustainability in the Egyptian oil and gas sector. Data is collected and analyzed from employees from different age groups and different titles in the sector. It is a cross-sectional study as data has been gathered just once to test the research hypotheses. The questions in the survey are typically arranged into web-based self-administered questionnaires that a respondent completes on his/her own, via the computer.

6.4. The Survey Procedure

6.4.1. Developing the Data Collection Instrument

The questionnaire used in the research consists of four sections: demographics, organizational DNA, Corporate Agility and corporate sustainability.

6.4.2. Demographics

This section includes questions regarding gender, age group, job nature, total working experience, and experience in the oil and gas sector, type of company.

6.4.3. Organizational DNA

This section consists of 26 questions measured by a 5 Likert scale which ranges between strongly disagree and strongly agree. This section is based on [1]. There were 4 questions measuring the (Purpose) dimension, 3 measuring the (priorities), 5 questions measuring the (process), 6 questions measuring (People), 4 measuring the (Pattern), 2 measuring (Power), and 2 measuring the (policies).

6.4.4. Corporate Agility

This section consists of 15 questions measured by a 5 Likert scale which ranges between strongly disagree and strongly agree. There were 5 questions measuring the (sensor) dimension, 4 questions measuring (Response), and 6 questions measuring (Efficiency).

6.4.5. Corporate sustainability

This section consists of 11 questions measured by a 5 Likert scale which ranges between strongly disagree and strongly agree. There were 3 questions measuring (Economic) dimension, 4 questions measuring the (Societal), and 4 questions measuring the (environmental).

6.5. Variables and Dimension

6.5.1. Independent Variable

The independent variable of this study is **Organization DNA**, defined as the basic factors that together determine the “personality” of an organization and help explain its performance. Organizations fail to deliver because they go straight to structural reorganization and ignore the most powerful drivers of effectiveness - decision-making rights and the elements of information flow.

6.5.2. Dependent Variable

The dependent variables of this study are Organization agility and Organization sustainability.

Organizational agility is the organization's ability to quickly respond to changes and seize opportunities to achieve leadership, which enables the organization to meet its customers' demands quickly, introduce new products, and achieve strategic alliances to solve its customers' problems and identify the work environment to seize opportunities [37].

Organizational sustainability” has received a lot of attention recently in the business, academic, and popular press. This term refers to organizations with a purpose that motivate their staff and partners to provide long-term financial performance, fair impact, and societal value that gain and uphold the confidence of all stakeholders. Focuses on a better living that is highly valuable to every member of society in the present and the future and is described as the ideal and effective utilization of all environmental resources, social life, and the economy for the far future [38].

7. Statistics and Results

7.1. Respondents’ Demographics

The demographic characteristics of respondents are reported of the respondents, there about 68% of the sample were males, and 32% were females. About 69% were university graduates, and 31% were postgraduates. Regarding the respondents' function level, 45% were middle management, 43% were senior management, and 12% were the junior staff. Furthermore, there about 10% of the sample were aged less than ten years, 29% were aged from 10 to less than 15 years, 31% were aged from 15 to less than 20 years, and 31% were aged above 20 years old. Finally, 87% of the sample was reported to the Egyptian Operating Company (EOC), and 13% was reported to the International Operating Company (IOC).

7.2. Internal Consistency Reliability

Internal consistency reliability examines whether all of the indicators associated with a construct are actually measuring it [39]. There are different ways to measure internal consistency. Cronbach's alpha is a statistical measure that is the most commonly used for this purpose that provides the average correlation between all of the indicators that belong to one construct.

Table 1. Reliability of Measurement Model Analysis

Construct	Cronbach's Alpha	Composite Reliability	Remark
Economic	0.701	0.834	Reliability attained
Efficiency	0.864	0.902	
Environmental	0.854	0.901	
Organizational Agility	0.94	0.948	
Organizational DNA	0.959	0.963	
Organizational Sustainability	0.899	0.916	
Patterns	0.857	0.903	
People	0.872	0.907	
Policies	0.788	0.904	
Power	0.817	0.915	
Priorities	0.807	0.886	
Process	0.819	0.874	
Purpose	0.821	0.881	
Response	0.861	0.906	
Sensor	0.878	0.911	
Societal	0.838	0.892	

The results of hypothesis testing in Table 2 showed that the Organizational DNA construct yielded a significant direct positive effect on Organizational Agility since ($\beta=0.885$, $t=58.96$, $P<0.001$, 95% CI for $\beta=[0.85,0.909]$), consequently, the first hypothesis is confirmed. Moreover, Organizational DNA yielded a significant direct positive effect on the dimensions of Organizational Agility for *Sensor* ($\beta=0.827$, $P<0.001$), *Response* ($\beta=0.802$, $P<0.001$), and *Efficiency* ($\beta=0.8$, $P<0.001$); consequently, the sub-hypotheses (H1a, H1b, H1c) of the first hypothesis were also supported. Furthermore, The results also showed that Organizational DNA yielded a significant direct positive effect on Organizational Sustainability since ($\beta=0.723$, $t=23.63$, $P<0.001$, 95% CI for $\beta=[0.656,0.777]$); consequently, the second hypothesis is confirmed. Moreover, Organizational DNA yielded a significant direct positive effect on the dimensions of Organizational Sustainability for *Economic* ($\beta=0.652$, $P<0.001$), *Societal* ($\beta=0.647$, $P<0.001$), and *Environmental* ($\beta=0.593$, $P<0.001$); consequently, the sub-hypotheses (H2a, H2b, H2c) of the second hypothesis were also supported.

Table 2. Results of Hypothesis testing

Path	B	t-value	P-value	95% CL for B		Remark
				LL	UL	
H1: Organizational DNA -> Organizational Agility	0.885	58.96	***	0.85	0.909	Supported
H1a: Organizational DNA -> Sensor	0.827	40.55	***	0.775	0.862	Supported
H1b: Organizational DNA -> Response	0.802	44.89	***	0.761	0.832	Supported
H1c: Organizational DNA -> Efficiency	0.8	36.64	***	0.756	0.839	Supported
H2: Organizational DNA -> Organizational Sustainability	0.723	23.63	***	0.656	0.777	Supported
H2a: Organizational DNA -> Economic	0.652	18.68	***	0.572	0.711	Supported
H2b: Organizational DNA -> Societal	0.647	20.62	***	0.573	0.7	Supported
H2c: Organizational DNA -> Environmental	0.593	17.46	***	0.506	0.649	Supported

*** P < 0.001; LL= Lower Limit; UL= Upper Limit; CI= Confidence Interval.

The assessment of the structural model has produced the following results, presented in Table 3, regarding the acceptance and rejection of the hypotheses.

Table 3. Hypothesis testing summary

Hypothesis	Decision
H1: Organizational DNA positively affects Organizational agility	Supported
H1a: Organizational DNA positively affects Sensor	Supported
H1b: Organizational DNA positively affects the response	Supported
H1c: Organizational DNA positively affects the efficiency	Supported
H2: Organizational DNA positively affects Organizational Sustainability	Supported
H2a: Organizational DNA positively affects Economic	Supported
H2b: Organizational DNA positively affects Societal	Supported
H2c: Organizational DNA positively affects Environmental	Supported

8. Discussion and Recommendations

Results of the Relationship between Organizational DNA, Agility, and Sustainability.

In keeping with the goal of this article, hypothesis testing revealed that a company's direct organizational DNA significantly affects its agility and sustainability. Organizational DNA architecture shapes its characteristics, such as Sensor, reaction, and efficiency, and has a direct positive impact on organizational agility. The organizational DNA construct also has a favorable and direct impact on organizational sustainability since it affects an organization's economic, social, and environmental elements.

8.1. Practical Implication

The study demonstrates the enormous impact organizational DNA has on the agility and sustainability of businesses and the petroleum sector as a whole. Considering the significant contribution, the oil and gas sector makes to the expansion of the national economy.

The researcher made the following recommendations based on the study to help the oil and gas industry continue to play a vital role in economic growth. The researcher advises a greater understanding of the company's goals and the methods used by firms to set priorities based on the study's findings. Businesses must define flexible, realistic, and achievable objectives that are structured, controlled, and prioritized within the business in accordance with their importance.

1. Businesses try to qualify employees, so they are prepared for growth and change. In order to attain the most significant levels of performance excellence and to utilize their full potential, individual talents, abilities, and knowledge at work, the company must support employees in growing their capabilities.
2. New suggestions from staff members should also be embraced and encouraged by the corporate. Similarly to this, laws that organizations rely on need to be flexible so that everyone can respond to changes swiftly.
3. Dependence on delegation and decentralization for authority and power needs to be taken into

consideration to help businesses foster the growth of their workforce.

4. Decentralized decision-making should be practiced by businesses, and employees should be given the freedom to share authority and responsibility.
5. Employees' promotions, should be changed based on the level of education, performance, recommendations, and interviews. No longer dependent on the number of years of experience.
6. Performance appraisal process should be transparent, and be done on quarter basis, to inform employees with their performance status.
7. Performance should be measured against set of approved and communicated KPI's.

In order to achieve these goals and avoid more issues, businesses must endeavor to ensure that policies and procedures are updated so that they are tied to plans and objectives and have quick responsiveness to changes. To avoid any challenges or issues facing employees, businesses should focus on streamlining work processes and creating work systems.

Lastly, in order to maintain their contribution to economic growth, oil and gas businesses should work to promote economic development by creating new, viable projects, bringing in new foreign direct investments, and hiring young people to lower unemployment. The aforementioned measures together will cut inflation rates, end unemployment, and fight poverty.

8.2. Limitations

There are different limitations that the researcher encountered in this study, the majority of the research's possible weaknesses are connected to the manner in which the data was acquired.

- Participants with low levels of English literacy won't be able to reply to the survey. Future research should include bilingual questionnaires to boost participation.
- Formal permission should be taken into consideration in order to expand participation since administrative obstacles limit reaching out to a larger target audience.
- Survey was sent by email, not all the employees have email access.

8.3. Proposals for Future Studies

The current study has been defined in some respects, so it is suggested that work be done to complete the scientific application in this field with future studies for applicants for graduate studies programs in Egyptian universities; here are some suggested topics related to the current study topics:

- The application of this study is limited to Oil & Gas operating companies in Egypt, so it is suggested to apply also to other sectors and fields such as banks, hospitals, and hotels...
- The study focused on the topic of Organizational DNA (as an independent variable). Therefore, it is suggested to study the factors affecting Organizational DNA. The issue of Organizational Sustainability (as a dependent variable) has been

addressed, so it is suggested to study other factors that may be affected by Organizational Sustainability.

- Some Organizational DNA dimensions have been addressed, so it is suggested to study other dimensions that represent Organizational DNA. Some dimensions of organizational Sportsmanship have also been covered, so it is suggested to study other dimensions of Organizational Sustainability.
- Studying other recent topics related to and influencing Organizational DNA, such as:
- Study the impact of Organizational DNA on achieving the competitive advantage of companies.

Study the effect of making use of Organizational DNA in achieving entrepreneurship.

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