SUSTAINABILITY ENTREPRENEURSHIP IN SAUDI ARABIA: A COMPARATIVE ANALYSIS OF GLOBAL PRACTICES AND LOCAL IMPACT

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ABSTRACT

Purpose - This paper aims to identify the importance of my research and provide a literature review of previous research on the sustainability entrepreneurship in Saudi Arabia, and the gap or unsolved issues in this topic. This paper will explore the role of entrepreneurship in the economic development of Saudi Arabia and examine the relationship between green innovation and sustainability, with a focus on the moderating role of foreigners in the Saudi context. The paper will also explore the measurement frameworks and discuss the research limitations and then provide recommendations for further research. The Saudi Arabian government's Vision 2030 plan strongly emphasizes promoting entrepreneurship and innovation to diversify the country's economy and reduce its reliance on oil. Entrepreneurship has been identified as a key driver of economic growth and development, as it can lead to the creation of new jobs, the development of new technologies, and the introduction of innovative products and services.

Design/methodology/approach - A qualitative analysis approach has been applied (data analysis and case studies method)

Practical implications - This research explains the importance of green innovation and sustainability in entrepreneurship in Saudi Arabia

Originality/value - The research should be valuable to entrepreneurs, business owners, organizations, both private and public, and decision makers in Saudi Arabia

Keywords: Sustainability Entrepreneurship, Saudi Arabia, Vision 2030, Global Benchmarks, Entrepreneurial Success, Economic Development, Market Challenges, Saudi Green Initiative, policy impact

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ABBREVIATIONS

CDP	Carbon Disclosure Project
CSR	Corporate Social Responsibility
DJSI	Dow Jones Sustainability Index
ESG	The Environmental, Social, and Governance
EVs	Electric Vehicles
FTSE	Financial Times Stock Exchange
GCC BDI	GCC Board Directors Institute
GRI	The Global Reporting Initiative
GSAS	The Global Sustainability Assessment System
GSPs	Global Citizenship Signature Programs
IKTVA	In-Kingdom Total Value Add
ISE	IKEA Social Entrepreneurship
ISO 14001	Environmental Management System
ISO 26000	Social Responsibility
Ithra	King Abdulaziz Center for World Culture
KAUST	King Abdullah University of Science and Technology
LEED	Leadership in Energy and Environmental Design
MENA	The Middle East and North Africa
MGI	Middle East Green Initiative
Monsha'at	The General Authority for Small and Medium Enterprises
NGOs	Non-Government Organizations
NIDLP	National Industrial Development and Logistics Program
NIF	NEOM Investment Fund

OECD	The Organization for Economic Co-operation and Development
SASB	Sustainability Accounting Standards Board
SDGs	Sustainable Development Goals
SE	Sustainable Entrepreneurship
SGI	Saudi Green Initiative
Shareek	Private Sector Partnership Reinforcement Program
TBL	The Triple Bottom Line
TCFD	Task Force on Climate-Related Financial Disclosures
UN	United Nations
WCED	World Commission on Environment and Development

CHAPTER 1

SUSTAINABILITY ENTREPRENEURSHIP IN SAUDI ARABIA: A COMPARATIVE ANALYSIS OF GLOBAL PRACTICES AND LOCAL IMPACT

This introductory chapter comprises five sections: the background of the research, the research questions, the justification and significance of the research, a brief description of the methodology, and an outline for the rest of the thesis.

The chapter is designed to provide a clear and organized foundation for examining sustainability entrepreneurship, specifically in Saudi Arabia. It begins with a detailed background section that highlights the growing global focus on sustainable business practices. By placing Saudi Arabia within this broader context, the chapter emphasizes the importance of national initiatives like Vision 2030 and the Saudi Green Initiative (SGI), which are key in shaping the country's approach to sustainability. Next, the research questions are clearly defined, guiding the study's specific focus. This section aims to draw relevant local and global comparisons while also identifying the challenges and opportunities that exist in this emerging field. The justification and significance section further reinforces why this research is vital, explaining its relevance to academic discussions of entrepreneurship and sustainability, as well as its practical implications for policymakers and business leaders in Saudi Arabia. I also added a brief overview of the methodology used in this research, which offers transparency about the research design and data sources. Finally, the chapter outline acts as a roadmap for the thesis, giving a preview of how the content is organized and guiding the reader through the logical flow of the analysis.

1.1 Background

Sustainability and entrepreneurship have become increasingly intertwined concepts in the global business landscape. Entrepreneurial activity has been identified as a key driver for addressing

sustainable development challenges, with the potential to foster innovation and economic growth in an environmentally conscious manner. In Saudi Arabia, fostering a culture of sustainability-oriented entrepreneurship is a crucial element of the Kingdom's ambitious Vision 2030 plan, which aims to diversify the economy and reduce its reliance on oil exports. The extant literature on entrepreneurship in Saudi Arabia has primarily focused on understanding the intentions and competencies of engineering students, as well as the self-efficacy and motivations of Saudi employees toward starting their businesses. However, a dearth of research examines the intersection of sustainability and entrepreneurship in the Saudi context, particularly in terms of the moderating role of foreign influence on this relationship

1.2 Justification of the Research Object

The reason why this research has been conducted, and the importance of the topic comes from the role that sustainable entrepreneurship plays as a key driver of the economy, creating wealth and jobs, particularly through small and medium-sized enterprises (SMEs), it also helps firms and companies to shift from pursuing solely profit to developing products, processes, and services that serve both society and the environment which rises to the concept of sustainable entrepreneurship. In addition, it drives the creation of new business models that encourage sustainable consumption and production, initiating transformation towards environmentally and socially sustainable states. Moreover, it presents unique challenges for researchers that lead to the increased popularity of action research among sustainability scholars to address complex sustainability challenges, provide avenues for integrating sustainability into academic curricula, making it a crucial area of study for both academia and business.

1.3 Research Questions & Aims

This research aims to fill the gap by conducting a comparative analysis of global best practices in sustainability entrepreneurship and their potential impact on the local Saudi Arabian context. It will

explore the internal and external barriers to sustainability-oriented entrepreneurship in Saudi Arabia and the factors that may facilitate the growth and development of this sector.

Consequently, the objectives are as follows:

1. Evaluate the impact of the policy
2. Investigate entrepreneurial challenges
3. Examine cultural and regional influences
4. Develop impact measurement frameworks
5. Compare global and local practices

Based on the above, the research will answer this question: How do Saudi Arabia's Vision 2030, the Saudi Green Initiative, and global networks shape sustainability entrepreneurship development, innovation, and measurement practices within the context of global frameworks?

It is guided by these questions

(1) In what ways do Saudi Arabia's Vision 2030 and the Saudi Green Initiative (SGI) influence the development and practices of sustainability entrepreneurship compared to established global sustainability frameworks?

(2) How are local and global networks fostering innovation and growth within sustainable ventures in Saudi Arabia?

(3) How can sustainability entrepreneurship in Saudi Arabia be effectively quantified, and how do these metrics compare with established global benchmarks such as the Triple Bottom Line (TBL)?

1.4 Outline of The Thesis

Outline of The Methodology

This research uses a qualitative methodology based on a case study design, primarily relying on semi-structured interviews for data collection. I also use a secondary data source of companies' reports, policy documents, and relevant publications and research. This choice was made to deeply understand

the complex and context-specific nature of sustainability entrepreneurship in Saudi Arabia, which is a field that demands a thorough exploration of individual experiences, institutional practices, and socio-cultural dynamics. The study focuses on how entrepreneurs and experts perceive and engage with sustainability within the local entrepreneurial ecosystem. Interviewing both entrepreneurs and experts from consultancy, engineering, and research institutions provided a range of perspectives on the various challenges, funding options, societal support, and the adoption of global frameworks. This diversity enriched the analysis and helped achieve the research objective of understanding the factors that influence sustainable entrepreneurship in Saudi Arabia. In addition, the case study design added value by offering a focused yet comprehensive view of the ecosystem, incorporating real-world examples like NEOM and Aramco. This design allowed for analytical generalization, helping the findings contribute to both theory and practice beyond the specific cases examined. Thus, the combination of qualitative inquiry, semi-structured interviews, case study design, and data analysis was vital for capturing the depth and complexity of sustainability entrepreneurship in Saudi Arabia.

Outline of The Rest of The Thesis

The first chapter introduces the research by outlining the background and context of sustainability entrepreneurship both globally and within Saudi Arabia. It presents the research problem, research questions, aims, and objectives, and the significance of the study. The chapter also includes a brief overview of the methodology and the structure of the thesis.

Next, the literature review. The chapter critically reviews existing academic literature related to sustainability, entrepreneurship, and sustainable entrepreneurship. It explores the practices, key theoretical frameworks such as the Triple Bottom Line (TBL), UN Sustainable Development Goals (SDGs), ESG, and Circular Economy, as well as the global benchmarks and innovation within sustainability. The chapter also discusses relevant studies in the Saudi context and identifies gaps that this research seeks to address.

The third chapter explains the research design, including the qualitative approach adopted for the study. It details the methods used for data collection (case study and semi-structured interviews) and the secondary data. It also includes participant selection, and the analytical techniques employed. It also discusses ethical considerations and limitations of the chosen methods. Finally, it explains the research questions and methodology alignment, and the research objectives and methodology alignment

Chapter four is about the findings and data analysis. This chapter presents and analyzes the findings from interviews with experts and entrepreneurs in Saudi Arabia. It also includes presentation of case studies locally and globally, then it presents insights from the case study analysis relevant to Saudi companies.

Next chapter, the findings' discussion. I included the comparative analysis from the case studies explained earlier. Following, how research questions and findings align. And the final chapter presents the conclusion and recommendations for fostering sustainability entrepreneurship in Saudi Arabia and suggests directions for future research.

CHAPTER 2

LITERATURE REVIEW

The extant literature has highlighted the crucial role of entrepreneurship in driving economic growth and development. Schumpeter (1934) defined entrepreneurship as "the carrying out of new combinations, which includes the introduction of new goods, new methods of production, the opening of new markets, the acquisition of new sources of supply, and the reorganization of industry" (pp. 65–66). This classical definition frames the entrepreneur as a key innovator and change-maker in the economy, aligning well with the modern push for transformation seen in national strategies like Saudi Vision 2030.

2.1 Conceptual Framework

2.1.1 Entrepreneurship

In recent years, entrepreneurship has gained prominence as a driver of growth and job creation in both developed and developing nations. As economies continue to evolve, the entrepreneurial spirit fosters creativity and adaptability, encouraging individuals to pursue their passions and contribute to societal progress. Furthermore, the rise of technology and the digital economy has transformed traditional business models, creating new opportunities for aspiring entrepreneurs to launch startups that can disrupt established industries. Entrepreneurship is a complex concept that has been the subject of extensive research across various disciplines, leading to a rich tapestry of definitions and interpretations. Scholars have approached entrepreneurship from multiple angles, focusing on aspects such as innovation, risk-taking, and the creation of new ventures. For instance, (Stevenson, Roberts, and Grousbeck, 1989) emphasized entrepreneurship as "a process by which individuals-either on their own or inside organizations-pursue opportunities without regard to the resources they currently control." Another important viewpoint comes from Gartner (1988), who defines entrepreneurship as creating

new organizations, highlighting the behavioral aspect of entrepreneurial activity. Expanding on this notion, Block, J.H., & Wagner, M. (2010). discussed entrepreneurship in the context of new venture creation, emphasizing its significance in economic development and innovation in their research titled "The Role of Entrepreneurship in the Development of New Ventures". In addition to these perspectives, another prominent view of entrepreneurship is provided by Amit, R., & Zott, C. (2001), where they detailed how entrepreneurs create value in the e-business space and defined entrepreneurship in terms of the unique value propositions that new ventures offer.

2.1.2 Entrepreneur

Entrepreneur is a complex concept that has been the subject of extensive research across various disciplines, leading to a rich tapestry of definitions and interpretations. Scholars have approached entrepreneurship from multiple angles. Many research works provide definitions and insights into entrepreneurs, including elements of innovation, opportunity recognition, and risk-taking. The entrepreneur always searches for change, responds to it, and exploits it as an opportunity (Drucker, P. F, 1985). This definition shows how the entrepreneur catches opportunities, emphasizes innovation as a core component of entrepreneurship. It aligns with some other definitions, such as what Schumpeter J.A. (1934) saw the entrepreneurs as innovators who drive economic development by introducing new products or services. And Shane, S., & Venkataraman, S. (2000), in their research which articulated entrepreneurship as a process involved in discovering, evaluating, and then exploiting opportunities. They defined the entrepreneur as someone who recognizes and acts on these opportunities mentioned with the differences from one to another entrepreneur in acting on these opportunities. Some other researchers focused on taking risks as characteristic of entrepreneurs. For example, Bygrave, W. D., & Zacharakis, A. (2008) defined them as individuals who create new ventures, typically characterized by their willingness to take risks and innovate. Similar, to this, Hisrich, Robert, &

Peters, Michael. (2005) described entrepreneurs as individuals who create and manage a business to achieve profit and growth by taking risks.

2.1.3 Sustainability

Sustainability has emerged as a critical framework for addressing the pressing challenges of our time, encompassing dimensions of environmental, social, and economic. At its core, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." WCED, *Our Common Future* (1987). As global populations grow and environmental issues like climate change, biodiversity loss, and resource depletion become increasingly urgent, the principles of sustainability serve as a guiding philosophy for individuals, communities, and organizations alike. With sustainable practices, we ensure the health and well-being of our planet for generations to come.

Sustainability is the principle of ensuring that our actions today do not limit the range of economic, social, and environmental options open to future generations." Elkington, J. (1997). In addition to these perspectives, Scheirer, M. A., & Dearing, J. W. (2011) provided the following definition of sustainability as "the continued use of program components and activities for the continued achievement of desirable program and population outcomes."

2.1.4 Sustainable Entrepreneurship

One of the most studied in our time is sustainable entrepreneurship therefore, many sources provide a comprehensive view of sustainable entrepreneurship. Studies cover aspects like "The process of discovering, evaluating, and exploiting economic opportunities that are present in market failures which detract from sustainability, including those that are environmentally relevant. Dean, T. J., & McMullen, J. S. (2007). The existing literature on sustainability entrepreneurship involves various topics,

including environmental improvements, sustainable development, and the intersection of entrepreneurship with social and environmental concerns. It has identified several gaps and areas of focus. Additionally, the literature emphasizes the need to understand the motivations, processes, and outcomes of sustainable entrepreneurial activities, often through qualitative research, and to develop types of environmental entrepreneurs. However, there is a call for more research on the performance and growth of sustainable enterprises, the importance of stakeholder links in building sustainable enterprises, and the measurement of sustainable entrepreneurs.

Furthermore, sustainable entrepreneurship is seen as an alternative to the more standard business orientation, combining principles of economic, ecological, and social-ethical sustainability. The literature also discusses the direct forms and typologies of sustainable entrepreneurship, emphasizing the integration of social and environmental business logic or practices. This highlights the need for a more diverse stream of theory-based research within sustainable entrepreneurship, welcoming numerous theoretical viewpoints and embracing variation in terminology, data, and methods. From Cohen, B., & Winn, M. I. (2006) prospective "Sustainable entrepreneurship as the examination of how opportunities to bring into existence future goods and services are discovered, created, and exploited, by whom, and with what economic, psychological, social, and environmental consequences." that has similarity with the definition by Schaltegger, S., & Wagner, M. Sustainable entrepreneurship, as defined by Shepherd, Dean, and Patzelt (2011), is centered on the preservation of nature, life support systems, and community. It involves pursuing perceived opportunities to create future products, processes, and services that not only provide economic gain.

2.1.5 Practices of Sustainability Entrepreneurship

"Translating sustainability into practice has become a critical global challenge, and assessing whether the world is responding to the task at hand has become crucial in ascertaining the extent of

participation in the effort to achieve sustainable development.” Candelaria, J. L., Sharifi, A., Simangan, D., & Tabosa, R. M. R. (2023). Globally, sustainable entrepreneurship has been increasingly guided by comprehensive frameworks such as the United Nations Sustainable Development Goals (SDGs), the Paris Agreement, ESG (Environmental, Social, and Governance), and other reporting standards. These frameworks emphasize an integrated approach that balances economic viability with social equity and environmental stewardship as shown in figure 1. the TBL (Elkington, 1997; United Nations, 2023). Many countries have institutionalized such practices, embedding them into both corporate strategies and national policies.

In the Saudi Arabian context, significant progress has been made through initiatives such as Vision 2030 and the Saudi Green Initiative (SGI), reflecting a national commitment to sustainability. Leading corporations like Aramco and SABIC have adopted sustainability reporting and invested in green technologies. Moreover, ESG disclosure guidelines issued by Tadawul have started to influence the financial market's orientation toward sustainable practices.

However, a discernible gap persists between Saudi Arabia’s current sustainability entrepreneurship landscape and global best practices. While government-driven initiatives have laid foundational policies, the integration of sustainability within the entrepreneurial ecosystem, especially among SMEs, remains limited. Key challenges include a lack of awareness, insufficient regulatory incentives, and limited integration of social innovation and community impact—elements emphasized in global sustainable entrepreneurship discourse (Schaltegger & Wagner, 2011; Shepherd & Patzelt, 2011) see figure 2. that shows perspectives and development of sustainable entrepreneurship and sustainability innovation.

Addressing this gap is vital for aligning with international standards and ensuring that entrepreneurial growth in Saudi Arabia is inclusive, responsible, and future-oriented. This study seeks to explore this emerging landscape by comparing local practices with global frameworks, thereby

identifying enablers, barriers, and actionable opportunities for sustainable entrepreneurship in the Kingdom.

2.1.6 Global Sustainability Frameworks and Benchmarks

In the context of sustainable entrepreneurship, several global frameworks and benchmarks have emerged to guide businesses toward practices that align with sustainability. The United Nations Sustainable Development Goals (SDGs) framework consists of 17 goals that focus on ending poverty, protecting the planet, and ensuring prosperity for all by 2030 as shown in figure 3. In response, entrepreneurs are increasingly aligning their operations with these goals to contribute to global sustainability efforts. Similarly, the Triple Bottom Line (TBL) framework encourages businesses to evaluate their performance based on three dimensions: social, environmental, and economic, ensuring that sustainability is not seen solely as an environmental concern but also as an integral part of a business's financial strategy.

ESG criteria are now essential in global corporate governance and investment strategies. Many enterprises are adopting these criteria to highlight their commitment to sustainable development, which, in turn, helps attract socially conscious investors. The Global Reporting Initiative (GRI) provides a standardized reporting framework that allows companies to transparently communicate their sustainability efforts, facilitating accountability and trust among stakeholders. Additionally, the OECD Green Growth Indicators offer a set of metrics to measure progress toward green economic growth, which is essential for fostering sustainable entrepreneurship in emerging markets.

These global benchmarks have set high standards for sustainability, influencing entrepreneurial strategies worldwide. As such, they serve as key indicators for measuring and evaluating sustainable entrepreneurship practices across industries and regions.

2.1.7 Global Sustainability Frameworks

Nowadays, the world faces many challenges. Climate change, social inequality, and resource depletion are some of them. As a result, there is a need for sustainability frameworks as an essential tool to help and guide countries, businesses, and communities toward more sustainable practices. The aim is to integrate the three dimensions of environmental, social, and economic elements into decision-making processes that promote long-term resilience and well-being for present and future generations. Some key global sustainability frameworks are:

1. The United Nations Sustainable Development Goals (UN SDGs) have 17 interconnected goals that address global challenges. It was integrated into the 2030 Agenda for SD and applies to all countries. The goal is to promote social equity, environmental protection, and economic growth.
2. The United Nations Global Compact (UNGC) is an initiative which launched in 2000, encouraging businesses around the world to adopt sustainable and socially responsible policies by integrating 10 principles in areas of human rights, labor, the environment, and anti-corruption into corporate strategies and operations.
3. The Paris Agreement (2015), which aims to strengthen the global response to climate change and to increase the ability of countries to face the impact of climate change and make finance flows consistent with a low GHG emissions and climate-resilient development.
4. The Triple Bottom Line (TBL), in addition to financial performance, the TBL includes social and environmental performance. It emphasizes that organizations should prioritize the three components of people, planet, and profit. The phrase was coined by John Elkington in 1994.

5. Task Force on Climate-Related Financial Disclosures (TCFD) that established by the Financial Stability Board in 2015 to develop recommendations for voluntary climate-related financial disclosures that provide consistent information to investors, lenders, and others.
6. OECD Green Growth Framework Implemented by the organization for Economic Co-operation and Development, it emphasizes the need for sustainable economic practices. The goal is to promote economic growth while ensuring that natural assets continue to provide the resources and ecosystem services
7. Global Reporting Initiative (GRI) is an international, independent standards organization that helps businesses and governments understand and communicate their sustainability impacts. It established a framework to report on economic, environmental, and social performance.
8. The Natural Step Framework was developed in Sweden. It is a systematic approach to sustainability that helps organizations interpret environmental and social challenges.
9. Circular Economy Framework that seeks to maintain the value of products, materials, and resources in the economy for as long as possible.

2.1.8 Global Sustainability Benchmarks

Organizations, investors, and governments are increasingly recognizing the need to integrate sustainability into their strategies and operations to address complex global issues. Wherefore, global sustainability benchmarks serve as vital tools offering frameworks and methodologies to evaluate and compare the sustainability performance of organizations and economies worldwide. The significance of these benchmarks lies in their ability to foster transparency, accountability, and competitive advantage in sustainable practices.

1. ESG Frameworks (Environmental, Social, Governance) guide investors and companies on assessing sustainability performance across environmental impact, social responsibility, and governance practices.
2. B Corp Certification that aims to balance profit and purpose, making the companies leaders in responsible business practices.
3. Dow Jones Sustainability Index (DJSI) was launched in 1999 and evaluates and ranks the sustainability performance of leading companies worldwide, focusing on long-term shareholder value and sustainability practices. It provides benchmarks for investors and a tool for companies to improve their sustainability strategies.
4. The FTSE4Good Index measures the performance of companies that meet specific ESG criteria, serving as a benchmark for responsible investment and corporate sustainability.
5. CDP (Carbon Disclosure Project) operates a global disclosure system for investors, companies, cities, and governments to manage their environmental impacts.
6. Sustainability Accounting Standards Board (SASB) develops and maintains sustainability accounting standards that help public companies disclose material ESG information to investors.
7. ISO 14001 (Environmental Management System) specifies requirements for an effective environmental management system (EMS). Organizations use it to enhance their environmental performance, comply with regulations, and achieve their sustainability goals.
8. LEED (Leadership in Energy and Environmental Design) promotes environmentally responsible and sustainable building construction and operation. It is an international green building certification system recognized as a benchmark for industry excellence in sustainability.

9. The Global Sustainability Assessment System (GSAS) is an assessment system for evaluating the sustainability performance of buildings and communities in MENA.
10. ISO 26000 (Social Responsibility) provides guidance on social responsibility, addressing organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and community engagement. So, it provides guidance rather than requirements.

2.1.9 Innovation and growth within sustainable

Sustainability-oriented innovation involves making intentional changes to an organization's philosophy and values, as well as to its products, processes, or practices, to serve the specific purpose of creating and realizing social and environmental value in addition to economic returns. Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Growth and sustainable development cover several key areas of life, including ecological health, economic stability, social and cultural well-being, political engagement, and security. Ginting, PJP. (2020). Together, innovation and growth within a sustainability framework are seen as critical drivers for achieving long-term prosperity aligned with the principles of sustainable development. Regarding the sustainability magazine Sep 2024, the top 10 countries with sustainability at their core pave a path for sustainability success for the companies working there, the people living there, and the wider global impact. These nations are at the forefront of tackling climate change and environmental issues while ensuring economic growth and social well-being. The list is as follows:

Denmark

Get the No.1 internationally regarding sustainability magazine list (2024), where the country aims to achieve carbon neutrality by 2050, with an ambitious interim target of reducing greenhouse gas emissions by 70% by 2030 compared to 1990 levels. Since 1996, the country has effectively cut its CO_2 emissions by over 50%.

In addition, the country has set up State of Green, a collaborative network that includes Danish companies, government bodies, academic institutions, experts, and researchers. This association aims to find effective solutions to facilitate the green transition. This initiative drives the global transition to a sustainable, low-carbon, resource-efficient society, encompassing renewable energies, energy efficiency, water management, waste management, climate adaptation, circular economy, and integrated urban solutions. Copenhagen, the capital city, has set its sights on becoming the world's first carbon-neutral capital by the year 2025. The city has achieved a 42% reduction in carbon emissions since 2005 by implementing initiatives such as district heating systems and encouraging cycling. Numbers show that more than 49% of commutes in Copenhagen are now by bicycle. Ørsted is an example of companies in Denmark that is described as a global leader in offshore wind energy, transitioning from fossil fuels to renewables, and establishing a major footprint in green energy production.

Sweden

Sweden is at the forefront of sustainability, aiming to become the first fossil-free welfare state in the world by 2045. The nation reached its 2020 goal of 50% renewable energy eight years ahead of schedule, with 56% of its energy generated from renewable sources in 2019. They also boast the world's first electrified road, which charges electric vehicles as they drive, with plans to expand this technology nationwide. Their innovative "Hybrit" project aims to produce fossil-free steel using hydrogen instead of coal, potentially reducing Sweden's total carbon emissions by 10% if implemented at scale. “IKEA, the popular Swedish furniture retailer, is setting an example for companies everywhere with its commitment to becoming climate positive by 2030 with a focus on reducing carbon emissions and developing sustainable products, IKEA is making a difference in the fight against carbon emissions.” (DGB Group, article 2023)

Finland

Finland's sustainability efforts span various sectors. During the years 2018 and 2019, over 70,000 students engaged with the principles of circular economy in their education. The country is at the forefront of developing innovative approaches in areas such as renewable energy, nutrient recycling, low-carbon timber construction, and waste management. With the first National Road Map to a Circular Economy (2016-2025), Finland aims to transform its economy to circular principles by 2035, which could contribute added value of at least US$3.3bn to the Finnish economy by 2030. Consequently, its efforts have gained international recognition, with Sitra winning the public-sector category of The Circulars at the World Economic Forum in Davos in 2018. Additionally, the annual World Circular Economy Forum, initiated by the Finnish Innovation Fund Sitra, showcases global circular economy solutions.

Switzerland

Switzerland focuses on sustainability, that reflected in its democratic processes. Swiss citizens have played a direct role in shaping environmental policies by utilizing referendums. For instance, they have opted to reject costly underground rail systems in favor of more sustainable surface alternatives. This combination of technological innovation, citizen engagement, and comprehensive planning has positioned Switzerland as a model for sustainable development. Moreover, the country is famous as a global leader in sustainable transportation. Its transportation systems are the world's most efficient and environmentally friendly public transport systems. The Swiss Travel System combines trains, buses, and boats and primarily utilizes renewable energy, with 90% of its passenger trains running on hydroelectric power. This extensive transportation network enables both locals and visitors to explore the country in an eco-friendly way. In addition, they have one of the strongest innovative waste management systems that recycle 52% of all waste at the highest rates globally. Finally, the Swiss government aims to achieve net-zero emissions by 2050. Nestlé, a Swiss example, is “the company that has been involved in various sustainability and social responsibility initiatives, focusing on water conservation, reducing plastic waste, and improving nutrition globally.” Butt, Umar. (2024)

Norway

Norway has established itself as a leader in sustainability, setting ambitious goals and using innovative strategies. The country is now striving to reach carbon neutrality by 2030, which is two decades earlier than its original target. The nation is leading the way in sustainable transportation and aims to prohibit the sale of fossil-fuel vehicles by 2025. Norway is setting the pace when it comes to electric vehicles. The government offers a range of incentives that make buying an EV attractive, which is why the country is one of the top markets for electric cars in Europe. On another note, they're also putting a lot of resources into ocean conservation, investing significant amounts of money into research and cleanup initiatives. The initiatives include a seabed mapping project valued at 100 million Krone (approximately US$9.5 million) and an additional 100 million Krone allocated for the removal of marine litter and microplastics. Norway's sovereign wealth fund, which is the largest in the world at $1.3 trillion, has pulled its investments from over 300 companies because of sustainability issues. This decision has encouraged many businesses to enhance their environmental practices. The fund has set a goal to achieve carbon neutrality in all its investments by the year 2050. An example of companies applying sustainability in their business is Statkraft, which adjusts its business to support the UN Sustainable Development Goals (SDGs) and develops its business in a way that adds value to the local communities where it operates. Furthermore, it recognizes the responsibility to build a greener, more equitable, and inclusive society.

The rest of the list, ranked from 6-10, includes Germany, Canada, New Zealand, the Netherlands, and Japan, with examples of companies written according to the previously mentioned countries, such as Siemens, Enbridge, Z Energy, Unilever, and Panasonic. These innovation examples could inform or inspire similar practices in the Saudi context.

2.1.10 Sustainable Entrepreneurship in A Saudi Context

Most researchers who studied Sustainable entrepreneurship agreed on improving the three aspects of social, economic, and environmental well-being for present and future generations. Entrepreneurship is generally described as “the ability of an individual or a group of individuals to create or discover an opportunity and utilize it to benefit society, which, in turn, will bring success to the innovators and their organization”. Yusuf N, Albanawi NI (2016). It “represents a proactive approach to business that seeks financial success and addresses pressing environmental and social challenges.” Kayal, G. 2024, The concepts of sustainability, entrepreneurship, and sustainable entrepreneurship hold universal definitions, but their implementation can vary significantly from one nation to another. In Saudi Arabia, these ideas are increasingly influenced by the national leadership's strategic vision, particularly through initiatives like Vision 2030 and the Saudi Green Initiative (SGI). Organizations like Aramco, NEOM, STC, Red Sea, and KAUST are examples of local companies that have applied sustainability.

Saudi Vision 2030

Launched in 2016, Vision 2030 is a transformative national plan aimed at diversifying the Saudi economy and reducing its reliance on oil. A key focus of this vision is to cultivate a dynamic private sector, foster innovation, and create a strong entrepreneurial culture.

Sustainability is a core component across various sectors such as energy, water management, education, and business development (see figure 4). This results in a policy environment that actively encourages sustainable ventures. As noted in the Vision 2030 document, the goal is to "build a thriving economy by unlocking the potential of our citizens and private sector," highlighting the connection between entrepreneurship and national development. In parallel to Vision 2030, the Saudi Green Initiative seeks to address environmental challenges through initiatives like afforestation, carbon emissions reduction, and sustainable energy strategies. With ambitious targets such as planting 10

billion trees, cutting carbon emissions by over 278 million tons annually, and sourcing 50% of electricity from renewable sources by 2030, the initiative emphasizes the need for private sector involvement and innovative entrepreneurial solutions. This includes advancements in clean energy, green technology, recycling, and climate-resilient infrastructure. In this landscape, sustainable entrepreneurship in Saudi Arabia is more than just a theoretical concept, it's a practical necessity. Entrepreneurs are increasingly recognized as vital agents of change, driving both economic development and environmental responsibility. Various government-supported initiatives, like Monshaat, the Misk Foundation, and KAUST, have launched programs aimed at nurturing entrepreneurs with a strong focus on sustainability and innovation. Additionally, the cultural and regional diversity within Saudi Arabia presents both opportunities and challenges for SE. Integrating global sustainability standards with local cultural values, religious beliefs, and business practices requires a thoughtful approach that combines international best practices with local insights. By situating these definitions within the framework of Saudi Arabia's national goals, it becomes evident that sustainable entrepreneurship not only resonates with global academic theories but is also crucial to the Kingdom's development model. This alignment underscores the necessity for research to better understand how global concepts can be adapted into effective strategies that meet local needs and aspirations. In Saudi Arabia, the Vision 2030 initiative represents a major effort by the government to diversify the economy and reduce its dependence on oil, addressing environmental concerns and promoting social development. This initiative has created a fertile ground for sustainable entrepreneurship to drive economic growth while aligning with ecological preservation and social responsibility. PwC's Survey shows that CEOs "spoke of a heightened awareness that is driving significant action, with 60% now focusing on improving energy efficiency, more than half innovating climate-friendly products, and around 43% incorporating climate risk into financial planning." such responses alignment with one of the vision's key that focuses on environmental responsibility.

This topic's significance for academic and business research lies in its potential to explore the unique challenges and opportunities faced by sustainable entrepreneurs in Saudi Arabia. Understanding the local context and the influences of international best practices can offer valuable insights for stakeholders and policymakers as the nation transitions towards a more sustainable economy. In summary, the Saudi Vision 2030 has a direct link with sustainable entrepreneurship. For instance, the NIDLP program links with and encourages innovation in green industries, quality of life program links with and promotes sustainable tourism and social entrepreneurship, renewable energy target's goal connects with opens markets for clean energy startups, and lastly, environmental protection initiatives have their link with creating opportunities for eco-innovation and green tech.

The Saudi Green Initiative (SGI)

Since the introduction of Vision 2030 in 2016, Saudi Arabia has made significant strides toward achieving a more sustainable future. SGI was established in 2021 to offer programs centered on environmental protection, energy transition, and sustainability (figure 5). It works to improve the quality of life and protect the planet for future generations. Until now, more than 85 initiatives that exceed USD 180 billion have been implemented, representing investment in the green economy. This initiative invites the private sector, entrepreneurs, individuals, and NGOs engaged in sustainability efforts in Saudi Arabia to actively participate. Yet, the Saudi Green Initiative represents a strategic framework to enhance environmental sustainability and mitigate climate change within the Kingdom. SGI aims to plant 10 billion trees, reduce carbon emissions by more than 278 million tons annually, and increase the share of renewable energy in the national mix to 50% by 2030. These ambitious goals have direct implications for sustainable entrepreneurship in Saudi Arabia. By promoting green innovation and low-carbon solutions, SGI is actively reshaping market dynamics and policy directions to support eco-conscious business ventures. As such, sustainable entrepreneurship in the Kingdom increasingly reflects SGI’s priorities—fostering ventures that balance profitability with environmental stewardship and social well-

being. This alignment presents valuable opportunities for entrepreneurs in sectors such as renewable energy, sustainable agriculture, green construction, and waste management. The SGI not only stimulates demand for green solutions but also provides regulatory and financial incentives that reduce the entry barriers for new entrepreneurs. Hence, the SGI is both a facilitator and a guiding framework for sustainable entrepreneurship, reinforcing the alignment between Saudi Arabia's Vision 2030 and global sustainability imperatives like SDGs in affordable and clean energy, industry, innovation, and infrastructure, climate action, and life on land goals. Furthermore, SGI creates opportunities for entrepreneurs in fields like green technology and innovation (e.g., solar, wind, recycling), Eco-friendly startups in agriculture and water conservation, and lastly, in environmental services and carbon capture solutions. With this said, SGI supports and aligns with the previous definitions and framework of sustainable entrepreneurship that researchers like Schaltegger & Wagner (2011) and Shepherd & Patzelt (2011) showed in the creation of ventures that are economically viable and environmentally, socially responsible. Many research study the importance of engaging in Saudi Green Initiatives for example, the research titled "Green entrepreneurial intentions in Saudi youth: cultural insights and implications" (Mabkhot, H., Semlali, Y., Gelaidan, H.M., 2024) wrote about the role that organizations and agents play "various initiatives that are actively promoted to preserve the environment and promote green practices. University students are particularly positioned as key agents in this transformation due to their adaptability and openness to new ideas, including sustainable entrepreneurship". Another study by Alwakid, Wafa & Aparicio, Sebastian & Urbano, David. (2021) showed that "green entrepreneurship positively contributes to the economic, social, and environmental components of sustainable development during the period 2012–2017." In addition, the Saudi government also has a regional cooperation and leadership in the green economy by establishing the MGI 2021, which is led by Saudi Arabia to reduce the impact of climate change on the region and to collaborate and meet global climate targets. For that and to accelerate the implementation of initiatives to achieve the MGI goals, the Saudi

government announced in November 2022 that Saudi Arabia will establish and host a dedicated MGI Secretariat and will allocate US$ 2.5 billion to support MGI projects and governance. Thereby, there is a need to invest more in technology, research, and innovation in Saudi Arabia, as Zaidan, E., Al-Saidi, M., & Hammad, S. H. (2019) emphasized in their study, “some industries can be transformed through innovations to reflect efficiency and environmental friendliness. Projects are underway in this area, including constructing solar desalination plants such as the Al-Khafji plant in Saudi Arabia, the world’s largest large-scale solar-powered desalination plant.”

2.2 Theoretical Framework

Sustainability entrepreneurship represents a critical path for Saudi Arabia as it seeks to transform its economy and society. Further academic and business research in this area is essential to foster a deeper understanding of the local context, the influence of international practices, and the potential for innovation in sustainable business models. Addressing the existing gaps in the literature will not only contribute to academic knowledge but also provide practical insights that can support sustainable economic development in Saudi Arabia.

The existing literature on sustainability entrepreneurship involves a wide range of topics, including environmental improvements, sustainable development, and the intersection of entrepreneurship with social and environmental concerns. It has identified several gaps and areas of focus. Additionally, the literature emphasizes the need to understand the motivations, processes, and outcomes of sustainable entrepreneurial activities, often through qualitative research, and to develop types of environmental entrepreneurs. Kirkwood and Walton (2010) examine the motivations behind sustainable entrepreneurship. However, there is a call for more research on the performance and growth of sustainable enterprises, the importance of stakeholder links in building sustainable enterprises, and the measurement of sustainable entrepreneurs. Another key study discusses

sustainable entrepreneurship as a driver of economic and environmental progress (Schaltegger & Wagner, 2011).

Furthermore, sustainable entrepreneurship is seen as an alternative to the more standard business orientation, combining principles of economic, ecological, and social-ethical sustainability. The literature also discusses the direct forms and typologies of sustainable entrepreneurship, emphasizing the integration of social and environmental business logic or practices. This highlights the need for a more diverse stream of theory-based research within sustainable entrepreneurship, welcoming numerous theoretical viewpoints and embracing variation in terminology, data, and methods. One study went in-depth on this and introduced the Triple Bottom Line framework for balancing economic, environmental, and social goals by Elkington (1997), which expanded the traditional focus on financial performance to include environmental and social dimensions.

The literature also situates sustainable entrepreneurship within the broader context of sustainability-driven entrepreneurship, combining it with the hybrid venture literature and the literature on sustainable supply chain management. It explores the theories on the values and motives of ecopreneurs, linking them to definitions of sustainable entrepreneurship and ecopreneurship to understand the construction of social reality and self-identity and how to explore opportunities for entrepreneurship to address market failures in sustainability Cohen and Winn, 2007). Applying Hofstede's theory in sustainability entrepreneurship in Saudi Arabia will address a critical gap in understanding how the Saudi cultural norms influence the adoption of global benchmarks like the TBL. Moreover, the literature discusses the distinctions between social, sustainable, and environmental entrepreneurship, emphasizing the need for more research expanding on social entrepreneurship topics and the limitations of defining key concepts hindering theory-building and quantitative studies in sustainable entrepreneurship. It also highlights the unique value-based approach of sustainability start-

ups, their intention to effect social and environmental change, and their tendency towards single-issue campaigning.

2.2.1 Key Theories

Stakeholder Theory: Besides the existing gaps, recent theories like stakeholder theory provide a broader perspective. Research Question 2: What is the significance of local and global networks in fostering innovation and growth within sustainable ventures in Saudi Arabia? It will be used to understand the importance of local and global networks in fostering innovation and growth. By identifying key stakeholders in sustainable entrepreneurship (e.g., government, investors, community members), this theory will help explain how various networks contribute to the success of sustainable ventures. Also, Stakeholder Theory will help identify barriers related to stakeholder involvement (e.g., lack of support from government or financial institutions), which are critical to understanding sustainable ventures' obstacles. Objective 2: Investigate Entrepreneurial Challenges. Interviews will also explore entrepreneurial challenges by asking participants about financial, regulatory, and cultural barriers. Stakeholder Theory will help analyze the relationships between stakeholders and the challenges entrepreneurs face in accessing resources and support.

The Triple Bottom Line (TBL) framework will help quantify the environmental, social, and economic impacts of sustainability entrepreneurship in Saudi Arabia. It provides a global benchmark against which Saudi ventures can be measured. This is directly related to Research Question 3, which seeks to explore how these impacts can be quantified and how Saudi Arabia’s metrics compare to established global benchmarks.

Institutional Theory explains socio-economic frameworks.

Research Question 1: In what ways do Saudi Arabia’s Vision 2030 and the Saudi Green Initiative (SGI) shape the development and practices of sustainability entrepreneurship in comparison to established global sustainability frameworks?

Experiential Learning Theory (education-focused analysis), where entrepreneurs learn from networks, policies, and practical experience, helping to answer all three research questions and meet objectives related to barriers, policy impacts, and measurement frameworks. Research Question 1.

Policy Diffusion Theory will be used to answer Research Question 1. It will analyze how Saudi policies (Vision 2030, SGI) align with global sustainability practices and how these policies are implemented to foster sustainable entrepreneurship. This also ties to Objective 1, which aims to evaluate the effectiveness and impact of Saudi policies in comparison to global frameworks.

2.2.2 Key Models

Triple Bottom Line (TBL): This model evaluates the economic, social, and environmental outcomes of entrepreneurship. It aligns with Objective 4, which focuses on developing an impact measurement framework for sustainability entrepreneurship. The framework will include TBL principles to measure and compare the impacts of local ventures on economic, social, and environmental fronts.

Business Model Canvas (Sustainability Version): Adapts the traditional model for sustainable ventures.

PESTLE Analysis: Analyzes political, economic, social, technological, legal, and environmental factors influencing sustainability entrepreneurship.

Sustainability Maturity Models: Measures the progress of firms transitioning towards sustainable practices.

Research Question 3:

To explore how sustainability entrepreneurship in Saudi Arabia can be quantified and compared to global benchmarks, you will use Sustainability Maturity Models. These models help assess the sustainability progress of businesses. You will adapt them to create metrics specific to Saudi Arabia's context and compare them with TBL to measure their impact.

Objective 4:

This objective is directly connected to Sustainability Maturity Models because they can be used to develop a comprehensive impact measurement framework that benchmarks Saudi ventures against global standards (e.g., TBL). You will adapt these models to measure and track the sustainability performance of local businesses.

Hybrid Venture Framework: Combines profit-seeking with social and environmental goals.

The theoretical framework integrates stakeholder theory, TBL theory, institutional theory, experiential learning theory, and policy diffusion theory to examine sustainability entrepreneurship in Saudi Arabia. In general, they provide a lens for analyzing the role of networks, cultural influences, and policies in shaping the practices. They help explain how local and global networks (stakeholder theory) influence entrepreneurial growth and how policies shape the global trend (policy diffusion theory). Further, institutional theory helps explore the role that institutions in Saudi Arabia are playing in supporting sustainable practices. In addition, TBL offers a framework for measuring the economic, social, and environmental impacts of sustainable ventures. In this framework, the independent variables include Saudi Vision 2030, and the SGI policies, stakeholder networks, and cultural dimensions will influence the dependent variable, including sustainability entrepreneurship outcomes. These relationships will be assessed through the lens of the TBL model and experiential learning theory.

To understand the interplay between all dimensions of policies, stakeholders, institutions, culture, and entrepreneurial outcomes, here is some justification for selecting each model and operationalization:

- Stakeholder Theory is vital for understanding how different parties influence and are influenced by entrepreneurial practices. In Saudi Arabia, numerous stakeholders like the government, communities, businesses, and international partners shape the ecosystem of sustainability entrepreneurship, and applying this theory can inform the achievement of

sustainable development goals. The theory can be operationalized through stakeholder mapping to identify the key actors involved in sustainable entrepreneurial ventures and then analyze the network to assess the quality of the relationship between stakeholders. The survey and interviews that I use will help gather insights into their perceptions and engagement levels.

- TBL Theory, on the other hand, is essential for measuring the impact of entrepreneurial ventures by focusing on financial performance and including social and environmental dimensions. It aligns with the objectives of sustainability entrepreneurship, which seeks to balance profit and positive social and environmental impact. Its operationalization can be achieved by establishing indicators for each dimension, for example, economic performance (profitability and market share), social impact (community development), and environmental impact. Data collection methods and surveys can evaluate performance through these aspects.
- Furthermore, Institutional Theory examines how formal regulations, and informal norms influence entrepreneurial behaviors. In Saudi Arabia, understanding the institutional context is crucial for analyzing how formal and informal institutions support or hinder sustainable entrepreneurial practices. Institutional and stakeholder theories provide a theoretical foundation to examine the influences on sustainability reporting. To operationalize this theory, I will analyze the existing policies, regulations, and institutional frameworks. This involves document analysis, case studies of successful sustainable ventures, and interviews to understand how institutional factors facilitate sustainable entrepreneurship. Also, investigates social norms and cultural values that influence entrepreneurial behavior.
- The Experiential Learning Theory emphasizes the importance of learning from practical experiences. Saudi Arabia is a diverse environment, and this theory is vital for understanding

how entrepreneurs adapt based on their experiences. It can be operationalized through qualitative methods such as interviews and case studies.

- Finally, Policy Diffusion Theory is crucial for a better understanding of how sustainability policies are adapted across regions and sectors. In the Saudi context, this theory aids in understanding how global sustainability policies influence national strategies like Vision 2030 and the Saudi Green Initiative (SGI). Its operation can involve comparative policy analysis across regions. Conduct interviews with policymakers to know how diffusion processes impact local practices and assessment methodologies, like tracing policy implementation timelines.

Figure 6 illustrates the relationships between Policy Foundations, Institutional Context, Stakeholder Networks and Cultural Dynamics, Sustainability Outcomes, and Research questions. It integrates Stakeholder Theory, TBL, Institutional Theory, Experiential Learning Theory, and Policy Diffusion Theory to analyze the factors influencing sustainability entrepreneurship in Saudi Arabia. Vision 2030 and SGI policies, shaped by global frameworks (Policy Diffusion Theory), act as independent variables. Their impact is mediated by institutional contexts (Institutional Theory) and stakeholder networks (Stakeholder Theory), which are influenced by Saudi cultural dynamics (Experiential Learning Theory). The outcomes of sustainability entrepreneurship are assessed using the TBL framework, measuring economic, social, and environmental impacts. Finally, the framework addresses questions of research as follows: addresses each one:

RQ 1: Policy Diffusion and Institutional Theories explain the role of policies and institutions.

RQ 2: Stakeholder and Experiential Learning Theories explore networks and learning processes.

RQ 3: TBL guides the measurement of sustainability outcomes.

The theoretical framework will guide the research by systematically understanding how the components connect. It provides a comprehensive lens for analyzing the interaction between policies and cultural values, networks, and sustainability metrics.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

This chapter outlines the research design and methodology chosen to answer the research questions raised by the research objectives. The strategy of the research. Moreover, detailed data collection and analysis procedures will be addressed.

3.1 Research Problem Statement

How do Saudi Arabia's Vision 2030 and the Saudi Green Initiative (SGI) influence the development of sustainability entrepreneurship compared to global frameworks, and what role do local and global networks play in fostering innovation and growth? Additionally, how can sustainability entrepreneurship in Saudi Arabia be effectively measured against global benchmarks such as the Triple Bottom Line (TBL)?

3.2 Research Questions

1. In what ways do Saudi Arabia’s Vision 2030 and the Saudi Green Initiative (SGI) influence the development and practices of sustainability entrepreneurship compared to established global sustainability frameworks?

2. How are local and global networks fostering innovation and growth within sustainable ventures in Saudi Arabia?

3. How can sustainability entrepreneurship in Saudi Arabia be effectively quantified, and how do these metrics compare with established global benchmarks such as the Triple Bottom Line (TBL)?

3.3 Research Objectives

3.3.1 Evaluate the Impacts of Policy

This objective aims to assess the influence of Saudi Vision 2030 and the Saudi Green Initiative (SGI) on sustainability entrepreneurship, juxtaposing these initiatives against global policy frameworks. The findings will facilitate the identification of strengths and weaknesses within Saudi policy frameworks, uncover gaps in implementation, and generate actionable recommendations for enhancement.

3.3.2 Investigate Entrepreneurial Challenges

An analysis of the financial, regulatory, and cultural barriers to scaling sustainable ventures in Saudi Arabia will be conducted. This objective seeks to illuminate the primary obstacles that entrepreneurs face, providing valuable insights that can assist policymakers and support organizations in devising solutions to foster growth.

3.3.3 Examine Cultural and Regional Influences

This objective involves a study of how Saudi cultural values and regional disparities affect the landscape of sustainable entrepreneurship. Insights gained from this analysis will inform the development of localized strategies that are sensitive to social norms and regional resource availability.

3.3.4 Develop Impact Measurement Frameworks

The creation of a robust framework to measure the environmental, social, and economic impacts of sustainability ventures in Saudi Arabia is paramount. This framework will benchmark against global metrics, contributing tools for assessing success and impact, while guiding both entrepreneurs and investors towards more sustainable business models.

3.3.5 Compare Global and Local Practices

The objective here is to identify global best practices in sustainability entrepreneurship and evaluate their applicability within the Saudi context. By bridging the gap between successful global

initiatives and local execution, this objective aims to aid Saudi entrepreneurs in adopting effective strategies that resonate with cultural relevance.

How Objectives Address the Research Problem

1. Policy and Ecosystem Alignment

The objectives, which focus on evaluating policy impacts and comparing global and local practices, will leverage global benchmarks to address misalignments between Saudi policies and entrepreneurs' needs.

2. Scaling and Regional Challenges

The objectives of investigating entrepreneurial challenges and examining cultural and regional influences will confront barriers to scalability and regional disparities, providing tailored solutions that reflect Saudi Arabia’s unique environment.

3. Measuring Success

The objective dedicated to developing impact measurement frameworks aims s to introduce standardized methodologies for tracking progress and informing future initiatives, thereby enhancing the overall effectiveness of sustainability entrepreneurship in the region.

3.4 Research Design and Approach

The study follows a qualitative approach. This design allows for a comprehensive analysis of sustainability entrepreneurship in Saudi Arabia, capturing both data and insights into the impact of policies, networks, and cultural influences.

This approach enhances the validity of the study by providing findings with qualitative insights.

3.5 Systematic Literature Review (SLR)

The Systematic Literature Review (SLR) forms the foundation of this study, providing an understanding of existing global and local frameworks in sustainability entrepreneurship. The SLR

findings inform the data collection instruments to ensure that they address the key areas identified in the research questions and objectives.

Purpose of the SLR:

- Framework Identification: Identified global benchmarks like the Triple Bottom Line (TBL) and sustainable development frameworks that are central to the analysis.
- Policy Impact: Investigated how policies like Vision 2030 and the Saudi Green Initiative (SGI) influence local sustainability practices.
- Research Gaps: Revealed the need for a more tailored approach to metrics and frameworks specific to the Saudi context.

Impact on Research Design:

- It guides the interview by highlighting key themes around policy impacts, networks, and entrepreneurial challenges.

3.6 Data Collection Methods

The study adopts a qualitative research approach to investigate how sustainability entrepreneurship is evolving in Saudi Arabia. It specifically looked at the impact of national strategies, including Vision 2030 and the Saudi Green Initiative (SGI), alongside global benchmarks like the Triple Bottom Line (TBL). To collect data, I use a combination of semi-structured interviews, case studies, industry reports, literature review, and analyze relevant documents, which provide a deeper understanding of the practices and development in this field.

3.6.1 Primary Data

Interviews

This study will employ semi-structured interviews conducted online to gather qualitative data from experts and entrepreneurs in Saudi Arabia (see Appendix C1 and C2). This method was chosen for its flexibility, allowing participants to respond at their convenience, which is especially beneficial when

dealing with geographically dispersed individuals or when participants prefer asynchronous communication. The interview will consist of open-ended questions designed to explore participants' experiences, perceptions, and insights related to sustainability entrepreneurship in Saudi Arabia. Responses will be analyzed through thematic analysis to identify recurring themes and patterns, providing rich contextual insights into the research problem. This approach prioritizes participant comfort and confidentiality while maintaining sufficient structure to ensure comprehensive data collection.

The interviews included four experts who work with entrepreneurs, and 26 entrepreneurs from Saudi Arabia in various industries and at different business stages.

Case Study

This method helps to collect data on the best practices in sustainability, strategies, and metrics that are used to compare the local with the global companies to better understand where Saudi Arabia needs to develop its strategy and apply the best practices within the local market. See Appendix E

3.6.2 Secondary Data

Industries' Publications and Reports

One of the important resources that I use in this study is what is published in sustainability, partially sustainability entrepreneurship, companies' reports, and websites. These resources help in better understanding how companies around the world work on sustainability and what practices and business models they develop, and how they measure the indicators.

3.7 Sampling Method and Participant Criteria

3.7.1 Sampling Method

This research adopted a purposive sampling strategy to identify participants with relevant expertise and experience in sustainability entrepreneurship within Saudi Arabia. This approach enabled the selection of individuals who are directly engaged in or contribute to sustainability businesses aligned

with Vision 2030 and the Saudi Green Initiative (SGI). The sample chosen are in two groups: the first one sustainability-focused entrepreneurs who operating businesses in Saudi Arabia, and the second group are professional experts with experience in sustainability and entrepreneurship. In addition, snowball sampling was utilized to reach further qualified participants through referrals, expanding access to a diverse and knowledgeable group. The total sample selected for their ability to provide in-depth qualitative data that aligned with the study's objectives. The data collected from interviews was complemented by a comparative case study analysis of four companies two local and two global selected based on their relationship to sustainable business practices.

3.7.2 Participant Criteria

Participants were selected based on the following criteria:

- Entrepreneurs or experts involved in sustainability-focused
- Representation across different industries, including consulting, technology, sustainable manufacturing, and education
- Inclusion of both male and female participants ensures gender diversity.
- Businesses are at various stages of development, from early startups to established companies.
- Familiarity with or application of sustainability frameworks such as the Triple Bottom Line (TBL), ESG, UN SDGs, or national initiatives like the SGI.
- Have experience in entrepreneurship, sustainability, or related fields.

In total, 30 participants were interviewed: 4 experts and 26 entrepreneurs, offering a wide range of perspectives on the practice and measurement of sustainability entrepreneurship in Saudi Arabia.

3.8 Data Analysis Methods

The data analysis process uses qualitative techniques to ensure a comprehensive understanding of the research questions.

- Qualitative Data Analysis:
    - Software: To facilitate the analysis of qualitative interview data, Google Sheets was employed as the primary tool for organizing and processing responses. Transcribed interviews were input into structured spreadsheets, where responses were categorized by predefined themes aligned with the research questions.
    - Coding and Categorization: I read all interview responses to ensure a deep understanding of their answers and took initial notes then coded each response and grouped the similar codes into thematic categories. Examples of main themes are; policy and regulatory environment, entrepreneurial and government collaboration, cultural and regional dynamics, and engagement with global sustainability frameworks. Following, I analyzed the responses from the two groups entrepreneurs and the experts to get the findings then compared them with the secondary resources of public data and industry publications. In the last phase of the analysis, I focused on interpreting the themes I identified within the context of my study's conceptual framework and the wider body of literature. I paid my attention to how these findings relate to the goals of Saudi Vision 2030, the Saudi Green Initiative, and global frameworks like the UN Sustainable Development Goals (SDGs). This approach ensured that my results were not just descriptive but also provided deep analytical insights, adding value to both academic understanding and policy development.

3.9 Reliability and Validity

To ensure the reliability and validity of the study:

- Reliability: The interview will undergo pilot testing to refine the questions for clarity and consistency. And to ensure dependability, I kept a thorough audit trail documenting every step of the research process, including recruitment, interview scheduling, coding, and data interpretation. I followed consistent procedures during interviews, making sure that both entrepreneurs and experts received the same protocols tailored to their specific roles. Additionally, all coding was reviewed to guarantee accuracy and minimize inconsistencies.
- Validity: Content Validity: Experts in sustainability entrepreneurship will review the instruments to ensure they align with the research objectives. To enhance transferability, I provided comprehensive contextual information about the study participants, covering aspects like industry type, regional background, and the stage of their businesses. I chose case studies involving Aramco, NEOM, Ørsted, and IKEA based on specific inclusion criteria, such as relevance to the sector, recognized leadership in sustainability, and the availability of public data.

3.10 Ethical Considerations

Ethical issues will be addressed through:

- Informed Consent: Participants will be fully informed about the study, and their participation will be voluntary.
- Confidentiality: Data will be anonymized to protect participants' privacy.
- Voluntary Participation: Participants will have the right to withdraw at any point without consequences. (see Appendix B1 and B2)

The research methodology is specifically designed to answer the research questions and achieve the objectives through a qualitative approach, integrating qualitative data collection and analysis

methods. The SLR serves as a foundation, shaping the interview instruments and case studies to ensure they address key areas of policy impact, network influence, and sustainability metrics.

3.11 Limitation

Some limitations emerged during data collection, including the lack of and delay in response to the interview requests, that due to hesitation from some of them to disclose information and time issues. Flexibility in conducting interviews online that assure of helped overcome this challenge. Another issue was limited reach to the target number from other Saudi provinces. However, the use of case studies, policy documents, and industry reports as secondary data helped mitigate this by offering additional layers of context and validation.

3.12 Research Questions and Methodology Alignment

Below is a detailed explanation of how the methodology aligns with each of the research questions and research objectives

Research Question 1: Impact of Vision 2030 and SGI on Sustainability Entrepreneurship

The SLR provides an understanding of global frameworks like TBL, which helps structure the interview to include questions related to the impact of Vision 2030 and SGI on entrepreneurship. The qualitative interviews and case studies from Saudi Arabia will explore these policy impacts in more depth, focusing on how entrepreneurs and companies perceive and respond to Vision 2030's goals concerning sustainability.

Research Question 2: Role of Networks in Innovation and Growth

The SLR highlights the significance of local and global networks in driving innovation in sustainability entrepreneurship. This insight informs the interview design, which includes questions about network engagement. The interviews and case studies will provide a deeper understanding of how specific local and global networks support entrepreneurial growth.

Research Question 3: Metrics for Quantifying Sustainability Entrepreneurship

The SLR reviews the Triple Bottom Line (TBL) and other global sustainability metrics, which inform the interview instrument by incorporating TBL indicators to measure the environmental, social, and economic impacts of entrepreneurship. The interviews/case studies will focus on how entrepreneurs use or adapt these global metrics in the Saudi context.

3.13 Research Objectives and Methodology Alignment

Evaluate the Impacts of Policy:

The interviews will directly assess the impacts of Vision 2030 and the SGI, addressing this objective by exploring policy-related challenges and opportunities.

Investigate Entrepreneurial Challenges:

Qualitative interviews will specifically address the challenges faced by sustainability entrepreneurs, including cultural, economic, and policy-related obstacles.

Examine Cultural and Regional Influences:

The interviews will explore how Saudi cultural and regional factors shape sustainability practices, responding to this objective.

Develop Impact Measurement Frameworks:

The case studies, reports, and industry publications will collect data on sustainability metrics (e.g., TBL), and the interviews will provide insights into how these metrics are used or adapted to fit local contexts.

Compare Global and Local Practices:

The SLR helps establish global practices, while the interviews compare Saudi practices with these global benchmarks.

CHAPTER 4

FINDINGS AND DATA ANALYSIS

This chapter presents the key insights gathered from case studies and interviews. Two case studies from Saudi Arabia are included in comparison with global companies. The first company is Aramco from the oil and gas sector, and the second one is NEOM, the smart city. Additionally,

two sets of interviews were conducted with stakeholders involved in Saudi Arabia's sustainability ecosystem. The first set comprises experts from academia, government, and research institutions, while the second includes entrepreneurs operating within the local innovation landscape.

4.1 Interviews Findings

This section presents the key insights gathered from two sets of interviews conducted with stakeholders involved in Saudi Arabia's sustainability ecosystem. The first set comprises experts from consulting, engineering, and research institutions, while the second includes entrepreneurs operating within the local innovation landscape. The findings are organized into thematic areas that emerge across responses, providing an integrated understanding of opportunities, challenges, and strategic directions.

Access to Funding and Financial Support

Expert Insights:

All experts emphasized access to funding as a foundational enabler for sustainable entrepreneurship. An expert talked about the importance of flexible financial regulation for entrepreneurs, "Financial support regulations." Challenges related to limited seed capital, venture funding, and complex grant procedures were frequently mentioned.

Entrepreneur Insights:

Entrepreneurs universally consider funding critical; many express reliance on government grants and venture capital yet also highlight difficulties in securing sufficient or timely funding. Entrepreneurs

called for more flexible, startup-friendly financial models and incentives tailored for early-stage sustainable ventures. One participant mentioned, "Availability of low-interest loans for green projects."

Implication: Ensuring accessible, innovative funding mechanisms is vital for scaling sustainability initiatives.

Regulatory Environment and Policy Support

Expert Insights:

Opinions were evenly split between supportive experts, highlighted “Absence of incentives for entrepreneurs to join projects,” where others see the challenge in regulatory frameworks. An expert said, “The gap between the industry and education institutes which always resulted in the lack of the right talent due to this gap.” Many highlighted that slow bureaucracy and inconsistent policy enforcement hinder progress.

Entrepreneur Insights:

Entrepreneurs described a mixed regulatory landscape; some noted support through government initiatives, while others faced bureaucratic hurdles. An example from responses: “Regions have conflicting regulations, making it difficult to adopt sustainable practices.” A recurring theme was the need for streamlined clear policies that facilitate startups and pilot projects.

Implication: Policy reforms should focus on reducing administrative barriers and establishing predictable frameworks.

Cultural Support and Societal Engagement

Expert Insights:

Cultural barriers were recognized but considered moderate in influence, with efforts underway to raise awareness.

Entrepreneur Insights:

Many entrepreneurs reported moderate to low cultural support when asked about how supportive Saudi society is of sustainability entrepreneurship, with societal understanding of sustainability still evolving. They stressed that public awareness campaigns and educational programs are crucial to shift perceptions.

Implication: Building societal acceptance and understanding is key to embedding sustainability practices.

Innovation Focus and Impact Measurement

Expert Insights:

Both moderate and high levels of innovation focus were observed, underscoring a growing interest in technological solutions. An expert highlighted the “Smart Cities: Foster startups in EV infrastructure, IoT for energy efficiency, and waste-to-energy systems”

Entrepreneur Insights:

Entrepreneurs are increasingly emphasizing impact measurement, although most rely on basic or no formal assessment methods. The answers about the measures that they use are similar as” Customer Feedback”, “Investor Interest”, and “Revenue growth.”

Recommendation: Develop standardized impact metrics and encourage best practices for tracking social and environmental outcomes.

Engagement with Global Frameworks and International Models

Expert Insights:

Growing engagement with SDGs and ISO standards; still in early phases. Expert confirmed when asked about how Saudi entrepreneurs engage with global sustainability frameworks that “It is still in the baby stage.”

Entrepreneur Insights:

Mixed awareness of frameworks; entrepreneurs show interest in adopting models from MIT, Stanford, NEOM, and UN initiatives, especially for mentorship and scaling. One entrepreneur confirmed that he considers in his business “Circular Economy principles (Reducing waste through reuse and recycling).”

Recommendation: Strengthen regional engagement with international standards through tailored localization efforts.

Academia and Industry Collaboration

Expert Insights:

Academia plays a pivotal role but faces challenges in transitioning from traditional teaching roles to innovation hubs. However, an expert mentioned “Proper incentives in Universities to attract entrepreneurs” to foster sustainability entrepreneurship. Another expert’s answer was “the theoretical vs. practical that needs to be resolved professionally,” where he mentioned that the old way in education that focuses only on theoretical study can not be implemented in the workplace.

Entrepreneur Insights:

Entrepreneurs advocate for more active university programs, including incubators, joint research, and funding initiatives. When we asked about the is the most important factor for growing sustainability entrepreneurship in Saudi Arabia, many of the entrepreneurs’ answer was “education.”

Implication: Foster stronger academia-industry partnerships to accelerate commercialization.

International and Regional Partnerships

Expert Insights:

All experts agreed that the role of international collaborations is increasingly valued. Partnerships with UN agencies and GCC networks play strategic roles. “Collaborate with institutions from China, South Korea, and Turkey.” This was an expert’s answer about international collaboration.

Another answer came with many suggested institutions and agencies like UN Initiatives, Global Entrepreneurship Network, Climate & Clean Tech Accelerators, and others

Entrepreneur Insights:

Entrepreneurs recognize the importance of regional networks and international partnerships for knowledge transfer and access to markets.

4.2 Case Study Findings

4.2.1 Case Presentation

Local Companies

In Saudi Arabia, companies like Aramco, NEOM are increasingly integrating sustainability into their business practices as part of their broader strategies to address environmental challenges and support economic diversification. Here's an overview of how each of these entities applies sustainability and entrepreneurship practices:

Saudi ARAMCO

Saudi Aramco, officially the Saudi Arabian Oil Group, is a petroleum, natural gas, and chemicals company founded in 1933 through an agreement between Saudi Arabia and Standard Oil of California before it became a completely Saudi company owned by the government in 1980. With its head office in Dhahran, located in the eastern part of Saudi Arabia, it has 75,118 employees (SAUDI ARAMCO | ANNUAL REPORT 2024) and more than 20 offices worldwide. Aramco's business activities focus on three areas upstream, where it manages the Saudi hydrocarbon reserves and responsible oil and gas production, downstream that operates refineries and petrochemical plants, transforming crude oil into different products, and global trading which engages in international oil and gas activities, selling and

marketing the company's products globally. Now, Aramco is the second-largest company in the world by revenue. It achieved the largest annual profits in the world's corporate history with both the world's second-largest proven crude oil reserves (270 billion barrels) and the largest daily oil production of all oil companies. As the world's largest oil producer, it recognizes the need to transition towards a more sustainable energy future. Aramco aims to reach net-zero greenhouse gas (GHG) emissions for Scope 1 and Scope 2 across all its wholly owned and operated assets by the year 2050. To achieve its GHG emissions mitigation, the Company focuses on energy efficiency, reduced flaring and methane emissions, carbon capture and storage, increased renewable energy production capacity, and natural climate solutions and offsets. Therefore, Aramco shifted some of its focus toward sustainability and innovation. The four areas of focus include: climate change and the energy transition, safe operations and people development, minimizing environmental impact, and growing societal value. These aspects support the company strategy and are informed by Saudi Vision 2030 and the SDGs as well.

Energy Efficiency and Emissions Reduction:

- Aramco aims to minimize flaring throughout its operations by investing in flare gas recovery systems and initiatives that enhance asset integrity, energy efficiency, as well as leak detection and repairs. They also committed to a reduction of CO2 emissions.

Investment in Renewables:

- While traditionally focused on fossil fuels, Aramco is investing in renewable energy sources such as solar and wind projects to diversify its energy portfolio.

  Aramco entered into a shareholders' agreement for the development of the Al Shuaibah 1 and Al Shuaibah 2 photovoltaic solar projects, which are anticipated to achieve a combined capacity of up to 2.66 GW. The projects, which will be jointly owned by Aramco (30.0%), PIF (34.99%), and ACWA Power Company (35.01%), have an estimated total cost of SAR 8.9

billion ($2.37 billion). These projects align with Aramco's intention to invest in solar and wind energy in support of the Kingdom's National Renewable Energy Program."

Research and Development:

- Aramco invests significantly in research and development related to sustainable practices, including alternative fuels and technologies that reduce the environmental impact of oil extraction and refining. They are in partnership with universities like KAUST in this field.

Circular Economy Initiatives:

- In 2023, Aramco attained 100% ISO 14001 certification across all 52 of its Upstream and Downstream asset-based organizations that are part of the Environmental Management System (EMS). The company promotes circular economy principles by minimizing waste and recycling materials in its operations. This includes turning by-products from oil refining into usable materials, thereby reducing overall environmental impact.

In terms of sustainability entrepreneurship in Saudi Arabia, Aramco plays a pivotal role in supporting sustainability entrepreneurship in the country through diverse initiatives, partnerships that target fostering innovation and sustainability, as well as engaging in different investments. One of the areas that Aramco focuses on is growing societal value. In line with relevant UN SDGs and Saudi Vision 2030, Aramco seeks to support local content and develop innovative opportunities for the future.

- Aramco's National Champions initiative includes a range of distinctive programs centered around five key areas: sustainability, digital innovation, industrial development, manufacturing, and social innovation. The program aims to develop initial ideas for small- and medium-sized enterprises through to global businesses and aligns with the Kingdom's Vision 2030 and its Shareek Private Sector Partnership Reinforcement Program (Shareek).
- Wa'ed Ventures is the first stage before the Aramco Taleed program, and the final stage is the Namaat program. The entire initiative for the venture life-cycle centers on five rising

growth sectors: sustainability, industrial, manufacturing, digital, and social. Aramco's venture capital fund was established in 2013 and is designed to support the start-up ecosystem. Wa'ed entrepreneurship center invests in Saudi startups working in tech-based start-ups to create advanced technology in different sectors such as Internet of Things (IoT), e-commerce, fintech (financial technology), drones, artificial intelligence, cloud and super-computing, energy and industrial applications, agtech (agricultural technology), edtech (educational technology), and Healthtech (technology-enabled healthcare). It covers a 12-month incubation opportunity, mentorship, offices, and coworking spaces, business bootcamps, workshops, and network events. The program also offers post-investment support. Since 2013, Wa'ed has successfully funded over 50 companies, with more than $100 million invested in venture capital deals.

- The Aramco Taleed program focuses on accelerating the growth of the local SME ecosystem and creating more jobs. Taleed supports SMEs to become well-established SME or major corporations. It has launched more than 20 initiatives.
- The Namaat industrial investment program supports new industries in Saudi Arabia. which launched in 2021 to identify and support the future National Champions. This program also helps the organization create its impact locally or globally. Since its inception, Namaat has grown its investments from 32 to 55 in just the first year. And between 2021 and 2022, Namaat initiated and progressed 19 partnerships. For example, in this regard, the company signed an agreement with Baoshan Co. and PIF in 2024 to establish steel plate manufacturing in Ras al-Khair Industrial City. They expected that this joint venture would create jobs and contribute to the country's economic growth and diversification.
- The IKTVA program aims to maximize local content and strengthen the local supply chain. According to the 2024 report, the local component of the Company's overall expenditure

across its supply chain now stands at 67.0%, with a target to grow to 70.0% by 2025. In addition, in 2024, Aramco entered into 145 Corporate Purchase Agreements with an estimated value of Riyal 65.7 billion ($17.5 billion) to strengthen the local supply chain ecosystem for strategic commodities and enhance the manufacturing landscape within the Kingdom. Additionally, Aramco entered into 145 agreements and Memoranda of Understanding, totaling approximately Riyal 33.75 billion ($9.0 billion), during the 2025 Iktva Forum and Exhibition. Aramco's CEO and President Amin Nasser said that "IKTVA has been an exemplary program, making our business more cost efficient, more resilient, and more reliable."

- The GSPs program, which has one of its focuses on supporting Science, Technology, Engineering, and Mathematics education (STEM) initiative, empowered future innovators and partnered with the public and private educational organizations.
- Ithra is one of Aramco's initiatives, opened in 2017, and has an important position as a leader of the arts and culture sector in the kingdom. It drives programs for culture development, innovation, education, and entrepreneurship. Moreover, by developing STEM competency, they enable younger generations to help resolve the world's energy challenges.
- Microindustries is one of Aramco's initiatives that is designed to support people with ideas to shape their economic future by providing them with the training and equipment they need to prosper. By choosing the right business model and supporting them, they stimulate traditional crafts to become a viable business. This initiative includes industries like coffee, honey, textiles, cosmetics, and olive oil products.

NEOM



NEOM is an ambitious project in northwest Saudi Arabia envisioned as a future city that incorporates advanced technology and sustainability at its core. The name of “NEOM is a portmanteau of the Greek word neos, meaning "new," and mustaqbal, the Arabic word for "future." Will M. (Jul 2019). The project announced in 2017 with $500bn and “expected to contribute $48bn to the Saudi’s gross domestic product.” Nihal M (2023) and create 100000 new jobs by 2030. As part of its social responsibilities and to create a sustainable community, NEOM offers enriching educational and training programs to empower students, entrepreneurs, and individuals. Also, it aims to build a business-friendly environment that attracts foreign investment and establishes the Kingdom as a hub for commerce and technology, making it a major incentive for young people to engage. NEOM includes five modern projects integrated into its vision, like Magna, Sindalah, Oxagon, Trojena, and the Line.

Magana the NEOM’s newest region located on Aqaba is a luxury lifestyle coastal destination that is part of NEOM’s sustainable tourism portfolio with 12 destinations and will develop 15 luxury hotels containing of 1600 hotel rooms, suites and apartments. It also has over 2500 premium residences. This project aligns with the transformative Saudi Vision 2030 and will create 15 000 jobs and will contribute SAR 2.6 billion to the Saudi GDP by 2030

The unique island Sindalah is the first physical showcase of NEOM that spreads over 840000 square meters and described as a luxury travel destination in the red sea. This region shows the travel sustainability.

Another region, Oxagon that creates a clean manufacturing ecosystem, focuses on artificial intelligence, robotics, automation, and internet of things. Oxagon goals to be powered by renewable energy which make NEOM's operations more efficiently, sustainability, and profitably.

The fourth region is Trojena a mountain one between all regions. It locates up to 2600 meters above the sea level and fame of being a winter sports and adventure because of its a year-round moderate climate. Trojena's design reflects the future living that comes with the new technologies.

Unlike traditional cities, the line a city of future and the fifth region that introduces a new concept of urban development. It is stretching across 170 Kilometers from mountains across the desert to the red sea. The title of the line; no roads, no cars, and no emissions. This region will run on 100% renewable energy, offer a new jobs and businesses opportunities, and 100% sustainable transport system.

Furthermore, NEOM has its port the most technological advanced, sustainable and efficient port in the world that will accelerate the sea transportation and enhance the global trade routes. In addition, it has airport, international hotel brands with focuses on 15 sustainable sectors such as; biotech, design and construction, education, research, and innovation, energy, entertainment and culture, financial services, food, health and wellbeing, manufacturing, media, mobility, sport, technology and digital, tourism and finally water.

In general, the city built to lead the world in future-proof capital projects and infrastructure, cognitive cities, autonomous vehicles and digital twins, low-carbon sustainable construction, enabling investment, incubation and certification, worker welfare, training and livability for all people, circular economy, internet of things and robotics, off-site modular construction and 3D printing, and lead the world in human-centric design, rapid prototyping and transformational thinking.

A research study was carried out to explore how NEOM can enhance the Saudi economy and support sustainable planning. The findings suggest that "NEOM represents an opportunity for Saudi

Arabia to rebrand its image and participate in the creation of a green future.” Yusuf, N., & Abdulmohsen, D. (2022). However, many studies have shown that success is linked with fulfilling the investment requirements and managing the challenges as well. A study undertaken by Algumzi (2022) shows that there are several environmental risks and design features that NEOM will face. As well, the objectives of such megaproject, “with a short timeline for completion by 2030, represent a challenging process that requires the collaboration of various entities in the design and development of the city”. Algumzi, Areej. (2022)

Sustainable Urban Planning:

- NEOM intends to develop a city with zero carbon emissions, utilizing renewable energy sources such as wind and solar power to sustain its infrastructure. The design of NEOM promotes sustainability through smart urban planning. The massive solar and wind energy will generate more than the city needs, as a result, it will export it to other regions and globally. Thus, helps Saudi Arabia achieve its sustainability goals.

Biodiversity and Conservation:

- NEOM integrates environmental conservation into its development plans. This includes the preservation of the region's unique ecosystems and biodiversity. The project envisions green spaces, wildlife protection, and preserving natural habitats.

Sustainable Mobility:

- The city plans to have sustainable transportation systems, such as electric public transport and pedestrian-friendly design, reducing reliance on fossil fuels and minimizing carbon footprints.

Innovation Hubs:

- NEOM aims to attract entrepreneurs and innovators in sustainability and technologies that can contribute to its development. The city will host research institutions and startups focused on sustainable solutions, creating opportunities for sustainable entrepreneurship. NEOM's innovation hub will facilitate the testing of new technologies for companies, including self-driving vehicles, robotics, and renewable energy solutions. NEOM's investment in technology like IoT, AI technology that integrates with smart city infrastructure, will open opportunities for entrepreneurs who have businesses specializing in these technologies to work with NEOM. The company also, through its official website, invited the business owners and entrepreneurs to collaborate by exploring the opportunities in NEOM. NEOM also established the strategic investment arm of NEOM in October 2023 called NEOM investment fund (NIF) that works on supporting economic growth by partner with innovative companies, investors and entrepreneurs.

Collectively, Saudi Aramco, NEOM represent Saudi Arabia's shift towards embracing sustainability and entrepreneurship in response to global environmental challenges. Through innovative practices, investments in renewable energy, sustainable urban development, and community engagement, these organizations are working to create a more sustainable future while contributing to the country's economic diversification efforts.

Global Companies

Ørsted

Ørsted

A global renewable energy player with its headquartered in Denmark, founded in 1972, Ørsted employs approximately. 8,300 people and their shares were listed on Nasdaq Copenhagen in 2016. In 2024, the group's revenue was EUR 9.5 billion. It ranked as the world's most sustainable company and has won many prizes, such as the CSR prize 2020. Ørsted a Denmark's biggest carbon emitter, which drives the green energy transformation in the country. The latest sustainability report "lays a comprehensive plan of action on climate that will make Ørsted carbon neutral in 2025 and net zero across the company's carbon footprint by 2040," V.P Group (2019). He added that their "sustainability reporting is a strategic tool for all of Ørsted's work with sustainability." (Figure 7)

The company's main activities include developing, constructing, and operating offshore and onshore solar farms, wind farms, and energy storage facilities. It is often highlighted as a prime example of successful corporate transformation, moving from fossil fuels to a leader in offshore wind. To transform to a renewable energy operation, the company started in 2006 developing offshore wind farms. According to the LBS (2018), Ørsted's management decided to focus more on green energy. Coal-fired plants were closed and oil and gas sites sold off, with billions of pounds reinvested in offshore wind farm technology and construction from that step. The same case study by LBS said the company has 24 offshore wind farms in operation and four under construction. Their operation worldwide in Europe, North & South America, Australia, and West Asia. The company's strategic management decided to focus on green energy and reinvested billions of pounds that came from selling oil and gas sites in offshore wind farm technology and construction in 2008, when DONG Energy was starting its transformation journey, and "today, it's the world's leading offshore-wind power producer." McKinsey & Company (2020). They worked on reflecting their vision to create a world that runs on green energy.

Therefore, they “reentered the onshore-wind market and moved into solar PV and storage solutions. These moves will help diversify our technology mix so we can better meet the demands of our customers.” McKinsey & Company (2020). Since the company has rebuilt its strategic plan, it plans to discover potential areas for competitive differentiation. In this regard, they also expect an increase in demand for sustainability solutions. Therefore, suggestions for decarbonization initiatives like “using less cement in turbine foundations, sourcing sustainable steel, recycling wind turbine blades, or engaging in other green procurement activities.” CBS Case (2023). Like any business, the company faces challenges and has its opportunities in the market. On the one hand, some challenges related to regulatory barriers that delay the work include increasing monetizing offshore wind and negative bids, supply chain constraints, competition challenges, and market uncertainty. These challenges need a creative differentiation approach from Ørsted’s management. And on the other hand, there are many opportunities like the potential market growth in offshore wind industry supported by climate change policies and government commitments, the technological innovation will help to reduce costs and encourage open new markets, some regions like Europe, the USA, and Taiwan governments have favorable regulatory that provide growth avenues, also developing and forming alliances can enhance project efficiency and reduces costs, finally, growing societal and political support for decarbonization offers a positive environment for the industry development. Ørsted's vision and practices influence entrepreneurial sustainability by promoting innovation in offshore wind technology that fosters strategic collaborations. In addition, the company helps in creating a more resilient and efficient renewable energy sector by driving technological advancements such as scalable project models. It supports the local economy, creates jobs in green industries, and promotes long-term environmental sustainability through its plan for global expansion. Do not forget that the company focuses on environmental, social, and governance (ESG) principles that align with sustainable entrepreneurship, encouraging other firms to adopt similar practices.

Thus, Ørsted believes that innovation is critical to reaching its vision. It is a core to the business. For that, they built projects with their global partners, and these partnerships support the sustainability entrepreneurship goals. Some examples of these partnerships and collaborations;

- The company created a start-up accelerator program called the Ørsted Propel program that kicked off its first round in partnership with Rockstart. This program focuses on systems integration. In this program, they choose eight applications to sign with four start-ups to accelerate their solutions by validating their commercial potential in the market.
- Innovation hubs that provide the local partners of universities, research organizations, start-ups, and investors with a front door for collaborating with a global green energy leader. The goal is to foster local green energy innovation.
- Democratize AI: Building an innovative culture across Ørsted is an initiative to empower employees and leadership with intelligent tools to enhance their technological capabilities, increase efficiency, and foster innovation to solidify leadership in green energy.
- Another program is the Carbon Trust Offshore Wind Accelerator (OWA) Program, which was created 15 years ago. It is the world's leading forum for collaborative innovation with the major offshore wind developers, and they have almost delivered 200 projects since its creation to date.
- Recycling onshore wind turbine blades for their onshore wind farms is a collaboration with a Northern Ireland local waste specialist, Plaswire.

Ultimately, Two recent accolades are testament to the fundamental transformation Ørsted has undergone and is still seeking to embody; the first one was in 2019 by Harvard Business Review when ranked Top 20 business transformations over the past decade and Ørsted was placed 7th in the world – the only European company in the Top 10, and the second one the result of a study carried out by Canadian think tank Corporate Knights that included of 7,300 global and publicly listed companies with

an annual turnover of over $1bn, Ørsted was named as the most sustainable company in the world in 2020. EACD (2020)

Table 1 shows an overview of Ørsted's activities in the green energy industry. Ørsted's business model is primarily centered on renewable energy generation and infrastructure development, with an emphasis on offshore wind, onshore wind, solar, and energy solutions.

IKEA



With a vision to create a better everyday life for many people, IKEA Swedish multinational company established in 1943 as a furniture manufacturer, offers self-assembly furniture, kitchen appliances, home accessories, and other products and services. It has grown rapidly since its foundation and today it is the world's largest furniture company, which generated in 2024 a global revenue of nearly 45.1 billion euros (figure 8). Also, the company was ranked the 7th most valuable brand globally as a retail company. It has 480 stores globally with 900 million customers. Statista (2025). The operation in over 60 markets worldwide, with 899 million visits to the stores (IKEA's report, 2024)

IKEA's sustainability transition was reflected in their vision as shown on their website, "In today's world, this means transitioning our business and value chain to reduce our climate footprint." Their business direction is to make the company more accessible, affordable, and sustainable. Their goals for sustainability strategy focus on three areas:

- IKEA's products, services, and solutions support a healthy and sustainable life. In addition, it offers food that supports healthy and sustainable eating, they are also committed to contributing and creating a shift in society to make a sustainable and healthy lifestyle the default.

- Climate, nature, and circularity involve taking climate action by halving emissions toward net zero, transitioning to a circular business model, regenerating resources, protecting the ecosystem, and improving biodiversity.
- Finally, fair and equal. By being a responsible business that contributes to resilient societies, maintains equality, embraces diversity, and fosters inclusion, and by supporting meaningful work across IKEA.

Figure 9 shows how IKEA's performance in 2024 decreased compared to 2023. With a reduction of 5%, the company's total footprint decreased by 1.1 million tonnes of CO_2

IKEA took care of Sustainability entrepreneurship, which is clear from its partnerships with other businesses. In 2024, IKEA's Social entrepreneurship worked with 11 social businesses that helped employ 10000 people who produce products for IKEA's stores. This commitment enables IKEA's business to support people around the world to get jobs and have a steady income. They partner with social businesses and entrepreneurs to achieve their vision, additionally, ISE is the way to innovate business models and drive system change. (CEO Inter Ikea Group, 2024). Another remarkable aspect is IKEA's circular economy initiatives that will transform how to design, produce, use, and dispose of goods (figure 10) that shows IKEA's vision of circular. Their focus on;

- Designing all IKEA products with circular capabilities
- Facilitating the process for individuals to obtain and maintain products in sustainable, circular ways.
- Using recycled and renewable materials
- Aiming to send zero waste from IKEA operations to landfills

IKEA social entrepreneurship includes IKEA Social Entrepreneurship Range & Supply (ISE R&S) and IKEA Social Entrepreneurship BV (ISEBV), where both work to achieve IKEA's goals. ISE R&S develops social business partnerships and co-creates products marketed and sold at IKEA retail, while ISEBV,

which was founded in 201,8, supports and funds programs, innovation, and investment in social entrepreneurs and enterprises. IKEA's accelerator programs are providing capacity-building support and financial funding to selected enterprises. Those programs are created in collaboration with their partners. Some examples of accelerator programs and investments are: Delawith Ashoka, Indonesia Social Enterprise Accelerator with Installer, Mexico Accelerator Program with New Ventures, Poland and Romania Accelerator Program with NESsT, South America Accelerator Program with NESsT, SEAM with Biji-Biji Initiative, Tailored investments fund to empower social enterprises, refugee employment initiative with NESsT, and exploring the plastic recycling value chain in India with Saahas Zero Waste. They also engage their co-worker in their programs and initiatives. IKEA also invests in research with external partners. Table 2 shows ISEBV program funding in 2024 compared with 2023

Work with entrepreneurs (Individuals who employ innovative solutions to address social and environmental challenges), enterprises (Organizations that use business models to drive social impact), to reach social entrepreneurship, and their suppliers, co-workers, and customers. IKEA's pioneering franchising-focused business model. All those collaborations help IKEA to provide affordable and sustainable products to "the many people" that have connected with customers across different cultures and make a remarkable success for the company. IKEA's innovative business model helps facilitate rapid global expansion and builds tremendous customer loyalty while keeping financial risk low for the parent company.

Figure 11 shows an overview of key organizations in the IKEA Franchise system. Thus, IKEA has now achieved massive success globally. However, like any company, it experiences big global challenges such as the effects of climate change on people and nature, rising geopolitical conflicts, economic pressures from inflation, and a higher cost of living, shipping, and materials. As well as market saturation, sustainability expectations like continuing to innovate more sustainable operations and

circular, customers demand, and trends that require IKEA to shift towards mass customization, supply chain disruptions, and increased competition from the local and online furniture stores.

These companies demonstrate how diverse business models and geographic contexts converge toward global sustainability goals. Their practices offer valuable benchmarks for Saudi companies by illustrating actionable paths for integrating innovation, circular economy principles, and environmental responsibility into entrepreneurial activities.

4.2.2 Case Analysis and Findings

Data from the case study included in the comparative analysis between the global and Saudi Arabian companies shows that Saudi Arabia's entrepreneurial landscape is evolving, with increasing awareness of sustainability challenges. However, when compared to global sustainability frameworks like the UN SDGs and TBL, there remain several areas where Saudi enterprises could enhance their alignment with these benchmarks. Tables 3 and 4 show details of five key sustainability entrepreneurship dimensions across Aramco and NEOM in sequence.

While some Saudi businesses are focusing on environmental sustainability, the broader integration of social equity and economic prosperity (as advocated by the TBL) remains a growing challenge. Furthermore, although there are green growth indicators in place, the full adoption of comprehensive ESG criteria and GRI standards by Saudi entrepreneurs is still in its early stages. The gaps in aligning with the global benchmarks reflect the evolving nature of Saudi Arabia’s sustainability agenda. Moving forward, more support for businesses to adopt global reporting standards and integrate sustainable practices into their operations will be necessary to ensure that the Saudi entrepreneurial ecosystem remains competitive on a global scale.

CHAPTER 5

FINDINGS' DISCUSSION

This chapter presents the key findings derived from comparative case studies and interviews with experts and entrepreneurs, focusing on how Saudi Vision 2030, the Saudi Green Initiative (SGI), and international frameworks influence sustainability entrepreneurship within Saudi Arabia. The discussion explores policy impacts, the role of networks, impact measurement practices, regional and cultural disparities, and the overarching challenges and opportunities, providing insights aligned with the study's core research questions.

5.1 Comparative Analysis of Sustainable Entrepreneurship Practices and Integration of Theories

In today's world, the landscape of sustainable entrepreneurship is constantly evolving, making it important to compare local initiatives with global best practices. This analysis focuses on a comparison between prominent international firms like Ørsted and IKEA and innovative Saudi Arabian companies, including Aramco and NEOM. By looking at how these organizations incorporate sustainable entrepreneurship principles into their strategies and operations, we can see both the similarities and differences in their approaches to sustainability.

This comparative analysis highlights the efforts being made in Saudi Arabia while placing them within a wider global context. It also identifies existing gaps and areas where further progress can be made to better align with international sustainability standards.

To better understand the practices of sustainable entrepreneurship in both Saudi Arabia and leading global companies, I've created a comparative framework. The accompanying Table 3 outlines examples from these companies, showcasing their initiatives. Saudi firms like Aramco, NEOM are making significant strides toward sustainability, concentrating on energy transitions, smart city developments. These initiatives align with the goals of Saudi Vision 2030 and the Saudi Green Initiative (SGI).

On the global front, companies such as Ørsted and IKEA embody established models of sustainability-driven entrepreneurship. Their work includes applications of the circular economy and innovating funding for sustainable practices, along with reforms in global supply chains.

By applying relevant theoretical frameworks like Institutional Theory, Resource-Based View, Stakeholder Theory, and the Triple Bottom Line, I can analyze how sustainability objectives differ based on sector focus and socio-economic conditions. This comparison not only showcases the advancements made in Saudi Arabia but also pinpoints where more development is needed to align with global best practices in sustainability

Table 5 illustrates how each theory emphasizes distinct aspects of sustainability entrepreneurship practices in the chosen case studies from the local and global markets. The comparative analysis shows that while companies in Saudi Arabia are making significant progress toward sustainable entrepreneurship, they are still developing compared to their global peers. Projects like Aramco's investment in low-carbon technologies, NEOM's ambitious smart city initiatives demonstrate an increasing awareness of environmental and social issues, all aligned with Saudi Vision 2030 and the Saudi Green Initiative.

However, when we look at global leaders such as Ørsted, which has fully transitioned to renewable energy, and IKEA with its circular economy innovations, it becomes clear that Saudi companies are still primarily in an expansion phase. To enhance their sustainability efforts, these companies could benefit from adopting global best practices, increasing engagement with stakeholders, and pursuing more aggressive innovation strategies. By doing so, they could close the existing gaps and position themselves as leaders in sustainable development on the international stage.

In conclusion, the comparative evaluation of Ørsted, IKEA, Aramco, and NEOM illustrates the varied strategic orientations and developmental stages that define their respective market positions. Ørsted and IKEA exemplify mature global enterprises with consistent strengths in sustainability,

innovation, and international reach, aligning with broader environmental and operational excellence benchmarks. Aramco, while dominant in terms of revenue and global presence, presents a contrasting profile with comparatively lower sustainability ratings, reflective of the ongoing energy transition challenges in the fossil fuel sector. NEOM represents a forward-looking initiative with high innovation aspirations, though its impact remains largely conceptual due to its early-stage development. Collectively, the analysis underscores how organizational maturity, sectoral context, and strategic priorities influence performance across key dimensions, offering a nuanced understanding of corporate competitiveness in a globalized economy.

5.2 Research Questions & Findings Discussion

RQ1: In what ways do Saudi Arabia's Vision 2030 and the Saudi Green Initiative (SGI) influence the development and practices of sustainability entrepreneurship compared to established global sustainability frameworks?

Interviews conducted with experts and entrepreneurs indicate a significant alignment between Saudi Arabia's Vision 2030 and the Saudi Green Initiative (SGI) in promoting sustainability entrepreneurship. Experts emphasized the critical role of supportive regulatory frameworks, articulating that the "absence of incentives for entrepreneurs to join projects" constitutes a substantial barrier to advancement in this sector. This observation underscores the importance of policy support in fostering an enabling environment conducive to sustainable enterprise development. Entrepreneurs corroborated the necessity of government initiatives but highlighted the persistent challenges posed by bureaucratic obstacles. One entrepreneur pointed out that "regions have conflicting regulations, making it difficult to adopt sustainable practices." This sentiment aligns with findings from the accompanying case study, which illustrates how prominent companies such as Aramco and NEOM are striving to integrate the principles of Vision 2030 into their operations yet still encounter regulatory fragmentation at the local level.

The case study further exemplifies Aramco's leadership in energy transition and NEOM's ambition to develop as a zero-carbon city, both of which are reflective of the tangible impacts of Vision 2030 and the SGI on sustainability practices. Aramco's investments in carbon capture technologies and renewable energy resonate with the national policy's focus on minimizing environmental impact, while NEOM's dedication to green energy and biodiversity serves as a direct manifestation of SGI's objectives. A comparative analysis with global enterprises like Ørsted and IKEA suggests that while Saudi companies are increasingly aligning with international sustainability frameworks, as shown previously in the literature review, the integration of Sustainable Development Goals (SDGs) and Triple Bottom Line (TBL) principles remains in the early stages of implementation.

RQ2: How are local and global networks fostering innovation and growth within sustainable ventures in Saudi Arabia?

In recent interviews with both experts and entrepreneurs, a pronounced consensus emerged regarding the pivotal role of both local and global networks in the promotion of innovation. Experts underscored the significance of international collaborations with prominent institutions, notably those associated with the United Nations, as well as entities from countries such as China, South Korea, and Turkey. One expert articulated this perspective by stating, "Collaborate with institutions from China, South Korea, and Turkey," emphasizing the extensive global outreach that Saudi firms are harnessing to amplify their influence and operational capacity. Entrepreneurs echoed this perspective, highlighting the critical importance of regional networks and international partnerships in their endeavors. One entrepreneur specifically pointed to the advantages of integrating circular economy principles and engaging with global mentorship frameworks to scale sustainable business practices. This observation accentuates the essential role of adopting global best practices in enhancing the innovation potential of local enterprises.

A salient illustration of these themes can be observed in the case of NEOM, which epitomizes the synthesis of global innovation networks. The city's strategic partnerships with technology firms and research institutions significantly bolster its capabilities in implementing state-of-the-art solutions across various domains, including energy efficiency and waste management. Thus, completely emphasizes what sustainability-oriented innovation is described before in the innovation and growth within the sustainable section in the literature review by Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Similarly, Aramco's collaborations with academic institutions and research centers facilitate its efforts to pioneer innovations in clean technologies and alternative energy sources. These insights collectively demonstrate how Saudi entrepreneurs focused on sustainability are effectively leveraging global knowledge networks to drive growth and innovation. This approach mirrors the practices of international leaders such as Ørsted, whose collaborative efforts with energy consortia enable the advancement of innovative research and development initiatives.

RQ3: How can sustainability entrepreneurship in Saudi Arabia be effectively quantified, and how do these metrics compare with established global benchmarks such as the Triple Bottom Line (TBL)?

The interviewees underscored the necessity for enhanced consistency and sophistication in the tracking of sustainability outcomes, despite the current utilization of sustainability metrics. Entrepreneurs predominantly rely on fundamental indicators such as "Customer Feedback," "Investor Interest," and "Revenue Growth" to assess the impact of their ventures. An expert highlighted that the integration of formal sustainability metrics remains in its nascent stages, characterizing the current efforts as being "still in the baby stage." Additionally, experts advocated for the incorporation of global standards, such as the Global Reporting Initiative (GRI) and the Triple Bottom Line (TBL), while recognizing that the comprehensive integration of these frameworks is still a work in progress. Entrepreneurs demonstrated a clear interest in adopting these global standards, with several emphasizing the significance of "Circular Economy principles" within their business models. This

challenge is consistent with what I mentioned in the practices of sustainability entrepreneurship in the literature review that described “Translating sustainability into practice has become a critical global challenge, and assessing whether the world is responding to the task at hand has become crucial in ascertaining the extent of participation in the effort to achieve sustainable development.” Candelaria, J. L., Sharifi, A., Simangan, D., & Tabosa, R. M. R. (2023).

In examining the practices of both Aramco and NEOM, it is evident that these organizations track key performance indicators (KPIs) in alignment with international frameworks such as the Sustainable Development Goals (SDGs), Environmental, Social, and Governance (ESG) criteria, and GRI standards. For instance, Aramco has proactively reported environmental metrics related to greenhouse gas intensity and social impacts, including local employment rates. This emphasizes the data in the literature review and the role that Aramco plays as a leading company that has adopted sustainability reporting. Similarly, NEOM’s methodology incorporates carbon footprint assessments and the integration of renewable energy solutions, reflecting a burgeoning commitment to formal impact measurement. When contrasted with global benchmarks exemplified by companies like IKEA, which utilize product lifecycle analysis to measure circularity, it becomes apparent that Saudi companies are in the initial phases of implementing standardized impact metrics. However, they continue to confront significant challenges in achieving full adoption of these practices. The disparities in alignment with global benchmarks serve to illustrate the evolving landscape of sustainability efforts within Saudi Arabia, as revealed in the comparative analysis of the case study.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The examination of sustainability entrepreneurship in Saudi Arabia highlights a complex landscape shaped by initiatives like Vision 2030 and the Saudi Green Initiative (SGI), which aim to promote sustainable development and reduce oil dependency. Vision 2030 offers a comprehensive approach integrating economic, social, and environmental goals, while the Saudi Green Initiative focuses on environmental challenges through afforestation, renewable energy, and pollution reduction.

However, this study highlights significant challenges that persist, particularly financial constraints that hinder entrepreneurs from securing necessary funding for innovative solutions. Traditional funding sources are often limited, underscoring the need for more accessible options like grants and low-interest loans for sustainability-focused businesses.

Regulatory hurdles also impede progress, as the current landscape may not adequately support sustainability innovation. Complicated procedures and a lack of incentives can deter entrepreneurs from pursuing eco-friendly models. Simplifying regulations and fostering a supportive policy environment could enhance engagement in this sector.

Cultural attitudes further complicate matters, with limited awareness of sustainability's importance among the public and businesses. Traditional practices often prioritize short-term profits, making it difficult for sustainability advocates to gain traction. Education and community involvement are essential to shift these perceptions.

To address these challenges, tailored support mechanisms such as incubators and accelerators for sustainability entrepreneurship are needed, along with partnerships between the public and private sectors to enhance knowledge sharing. Additionally, developing standardized metrics for measuring the impacts of sustainability initiatives can improve transparency and attract investment.

In summary, while Saudi Arabia has made strides in sustainability entrepreneurship through initiatives like Vision 2030 and the Saudi Green Initiative, addressing financial, regulatory, and cultural challenges is crucial for realizing their full potential. Implementing targeted support and robust impact global measurement frameworks can create a more conducive environment for sustainable entrepreneurship, contributing to a sustainable future.

6.2 Recommendations

1. Policy and Regulations Reforms

To foster the growth of sustainable ventures, policymakers must simplify bureaucratic processes and create targeted incentives. I noticed some interviewees talked about the conflict in regulations from one region to another. One entrepreneur pointed out, “Some regions have more supportive regulations and incentives for sustainable businesses.” Implementing straightforward regulations will significantly lower barriers, attract investment, and boost entrepreneurial activity throughout the country.

2. Strengthening Networks and Ecosystem Collaboration

Robust regional and international collaborations are crucial for driving innovation. Experts highlight the importance of establishing more active regional hubs that can connect with global institutions. One expert said that “Collaboration with an advanced entrepreneurial ecosystem will enhance sustainability entrepreneurship in Saudi Arabia.” By enhancing these networks, we can facilitate knowledge sharing, mentorship opportunities, and funding, accelerating our ecosystem's maturity.

3. Enhancing Impact Measurement and Benchmarking

There’s an urgent need to develop culturally appropriate impact assessment frameworks that align with international standards such as the Sustainable Development Goals (SDGs) and the Triple Bottom Line (TBL). An entrepreneur noted the importance of “Incorporate more global sustainability

practices into businesses, such as UN SDGs." Providing businesses with effective measurement tools will lead to greater transparency, accountability, and global benchmarking.

4. Cultivating Public Awareness and Cultural Support

To embed sustainability into society, our national campaigns should focus on raising awareness. One expert mentioned that he "believes we are taking sustainability entrepreneurship seriously, but it takes time since we are developing talent." It also needs to integrate sustainability topics into educational systems. Another expert commented, "The curriculum needs to be adjusted to cover the new sustainability world." Launching large-scale educational initiatives will nurture societal support and drive the behavioral change necessary for sustained growth.

5. Promoting Innovation and R&D Capacity

It's critical to support collaborations between universities and industries while expanding funding for research and development tailored to local challenges. An expert mentioned, "Research needs to be directed to economic impact." Developing research infrastructure and incentivizing partnerships will stimulate innovative solutions in sustainability.

These recommendations, drawn from the insights of various stakeholders, aim to tackle systemic challenges and seize opportunities. Strategic actions in policy reform, network enhancement, impact measurement, cultural engagement, and innovation will be essential for positioning Saudi Arabia as a global leader in sustainable entrepreneurship

This study contributes significantly to the understanding of sustainable entrepreneurship, particularly by providing context-specific insights into the entrepreneurial landscape of Saudi Arabia. By incorporating various stakeholder perspectives and aligning with national strategic frameworks, it effectively bridges the gap between the intentions of policymakers and the realities faced by entrepreneurs on the ground. The findings highlight an urgent need for systemic reform, cultural engagement, and innovation-driven strategies. Ultimately, empowering entrepreneurs with the right

tools, supportive ecosystems, and well-defined policy pathways is essential. This not only strengthens Saudi Arabia's transition toward sustainability but also positions the country as a potential model for sustainable entrepreneurship globally.

6.3 Directions for Future Research

While this study offers valuable insights, there is still much to explore in this field. Future research could greatly benefit from longitudinal studies that track the impact of policy changes on sustainable businesses over time, providing a clearer, more dynamic perspective on how these changes affect entrepreneurial efforts. Additionally, expanding the sample size to include entrepreneurs from diverse regions or industries would enhance the generalizability of these findings. Comparative studies between Saudi Arabia and other countries in the MENA region or emerging markets could shed light on regional trends and collaborative practices. Furthermore, investigating gender-specific challenges and the role of digital technologies in fostering sustainable entrepreneurship could reveal critical dimensions necessary for inclusive and technology-driven development. This holistic approach in future research would deepen the understanding and further support the growth of sustainable entrepreneurship in the region.

REFERENCES

Abdelwahed, N.A.A., Al Doghan, M.A., Saraih, U.N. and Soomro, B.A. (2023), "Green entrepreneurship in Saudi Arabia: shaping the landscape of the greener economy", Journal of Small Business and Enterprise Development, Vol. 30 No. 7, pp. 1352-1376. https://doi.org/10.1108/JSBED-05-2023-0239.

Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-Oriented Innovation: A Systematic Review. International Journal of Management Reviews, 18(2), 180-205. https://doi.org/10.1111/ijmr.12068.

Ahmad, Alam, Albarrak, Mansour Saleh, Akhtar, Samreen, Akram, Hafiz Wasim, Sustainable Development and Saudi Vision 2030: Entrepreneurial Orientation of Students Toward E-Businesses and Proposed Model of “Virtual Business Incubator” for SEU, Education Research International, 2023, 6106580, 16 pages, 2023. https://doi.org/10.1155/2023/6106580.

Alessa, A. (2017). Self-efficacy and Motivations among Saudi Employees toward Creating their Own Business. International Journal of Business and Management, 12(6), 75. https://doi.org/10.5539/ijbm.v12n6p75

Algumzi, Areej. (2022). Risks and Challenges Associated with NEOM Project in Saudi Arabia: A Marketing Perspective. Journal of Risk and Financial Management. 15. 381. 10.3390/jrfm15090381.

Alshrari, A.D., Omer, W.K.H., & Salmen Aljaaidi, K. (2021). Saudi Arabia 2030 Entrepreneurial Vision and Intention among University Students. AD-Minister, (38). https://doi.org/10.17230/Ad-minister.38.2.

Alsulami, Hemaid. (2017). Entrepreneurship and Saudi Engineering Students: Intentions and Competencies. journal of King Abdulaziz University Engineering Sciences. 28. 39-50. 10.4197/Eng.28-2.4.

Alwakid, Wafa & Aparicio, Sebastian & Urbano, David. (2021). The Influence of Green Entrepreneurship on Sustainable Development in Saudi Arabia: The Role of Formal Institutions. International Journal of Environmental Research and Public Health. 18. 5433. 10.3390/ijerph18105433.

Amit, R., & Zott, C. (2001). Value Creation in E-Business on JSTOR. Strategic Management Journal, 493. https://doi.org/3094318.

Ben Mahjoub, L. and Amara, I. (2020), "The impact of cultural factors on shareholder governance and environmental sustainability: an international context", World Journal of Science, Technology and Sustainable Development, Vol. 17 No. 4, pp. 367-385. https://doi.org/10.1108/WJSTSD-06-2020-0060.

Block, J.H., Wagner, M. Necessity and Opportunity Entrepreneurs in Germany: Characteristics and Earnings Differentials. Schmalenbach Bus Rev 62, 154–174 (2010). https://doi.org/10.1007/BF03396803.

Butt, Umar. (2024). Nestlé's Role in Global Food Security, Climate Change and Consumer Health. International Journal of Social Sciences and English Literature. 8. 175-183. 10.55220/2576683x.v8.182.

Bygrave, W., & Zacharakis, A. (2008). Entrepreneurship. Danvers.

Candelaria, J. L., Sharifi, A., Simangan, D., & Tabosa, R. M. R. (2023). A critical analysis of selected global sustainability assessment frameworks: Toward integrated approaches to peace and sustainability. World Development Perspectives, 32, 100539. https://doi.org/10.1016/j.wdp.2023.100539.

Cohen, B., & Winn, M. I. (2006). Market imperfections, opportunity and sustainable entrepreneurship. Journal of Business Venturing, 22(1), 29-49. https://doi.org/10.1016/j.jbusvent.2004.12.001.

Cohen, B., & Winn, M. I. (2006). Market imperfections, opportunity, and sustainable entrepreneurship. Journal of Business Venturing, 22(1), 29-49. https://doi.org/10.1016/j.jbusvent.2004.12.001.

Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2002). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences (3rd ed.). Routledge. https://doi.org/10.4324/9780203774441.

de Jong, G., Faber, N., Folmer, E., Long, T., & Ünal, B. (Eds.). (2023). De Gruyter Handbook of Sustainable Entrepreneurship Research. Walter de Gruyter GmbH & Co KG.

Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. Journal of Business Venturing, 22(1), 50–76. https://doi:10.1016/j.jbusvent.2005.09.003.

Djordjevic, D. (1985). Innovation and entrepreneurship - Peter F Drucker. INNOVATION AND ENTREPRENEURSHIP Practice and Principles.

Elkington, J. (1997). Cannibals with forks: The triple bottom line of 21st century business. https://archive.org/details/cannibalswithfor00elki_0/page/20/mode/1up.

Elkington, J., & Rowlands, I. H. (1999). Cannibals with forks: The triple bottom line of 21st century business. Alternatives Journal, 25(4), 42.

Elmonshid, L. B. E., & Sayed, O. A. (2024). The Relationship between Entrepreneurship and Sustainable Development in Saudi Arabia: A Comprehensive Perspective. Economies, 12(8), 198. https://doi.org/10.3390/economies12080198.

Evers, A., Ewert, B. (2015). Social Innovation for Social Cohesion. In: Nicholls, A., Simon, J., Gabriel, M. (eds) New Frontiers in Social Innovation Research. Palgrave Macmillan, London. https://doi.org/10.1057/9781137506801_6

Filser, M., Kraus, S., Kailer, N., & Fischer, U. (2019). Entrepreneurship as Catalyst for Sustainable Development: Opening the Black Box. Sustainability, 11(16), 4503. https://doi.org/10.3390/su11164503.

Gartner, W. B. (1988). “Who is an entrepreneur?” is the wrong question. American Journal of Small Business, 12(4), 11–32. https://doi.org/10.1177/104225878801200401.

Ginting, PJP. (2020). Sustainable Growth and Development. 10.2991/aebmr.k.200606.082.

Herold, D. M. (2018). Demystifying the link between institutional theory and stakeholder theory in sustainability reporting. Economics, Management and Sustainability, 3(2), 6–19. https://doi.org/10.14254/jems.2018.3-2.1.

Hisrich, Robert & Peters, Michael. (2005). Entrepreneurship.

Hossain, Tanjil & Sultana, Razia. (2024). Sustainable Supply Chain Management Practices: A Case Study of IKEA.

Jain, A., Bocken, N. M., & Gurtoo, A. (2020). The Business Model in Sustainability Transitions: A Conceptualization. Sustainability, 13(11), 5763. https://doi.org/10.3390/su13115763.

Kao, R. W. Y. (2010). Sustainable Economy: Corporate, Social and Environmental Responsibility. Singapore: World Scientific.

Kayal, G. 2024. Sustainable entrepreneurship in the Kingdom of Saudi Arabia: a systematic evaluation of extant research. Entrepreneurship and Sustainability Issues, 11(3), 85-98. https://doi.org/10.9770/jesi.2024.11.3(6).

Kirkwood, J., & Walton, S. (2010). What Motivates Ecopreneurs to Start Businesses? International Journal of Entrepreneurial Behavior & Research, 16, 204-228.

Kujala, J., Sachs, S., Leinonen, H., Heikkinen, A., & Laude, D. (2022). Stakeholder Engagement: Past, Present, and Future. Business & Society, 61(5), 1136-1196.

Langrafe, T.d.F., Barakat, S.R., Stocker, F. and Boaventura, J.M.G. (2020), "A stakeholder theory approach to creating value in higher education institutions", The Bottom Line, Vol. 33 No. 4, pp. 297-313. https://doi.org/10.1108/BL-03-2020-0021.

Lumpkin, T. (2011). Social and sustainable entrepreneurship. Emerald Group Publishing.

M. Bettinazzi, E. L., & Zollo, M. (2022). Stakeholder Orientation and Experiential Learning: Evidence from Corporate Acquisitions. Journal of Management Studies, 59(6), 1422-1459. https://doi.org/10.1111/joms.12782.

Mabkhot, H., Semlali, Y., Gelaidan, H.M. et al. Green entrepreneurial intentions in Saudi youth: cultural insights and implications. Discov Sustain 5, 480 (2024). https://doi.org/10.1007/s43621-024-00750-0.

Mahjoub, L.B. Relationship Between Green Innovation and Sustainability and Moderating Role of Foreigners: Evidence from Saudi Listed Companies. Process Integr Optim Sustain 7, 729–742 (2023). https://doi.org/10.1007/s41660-023-00316-z.

Mellinger, Christopher & Hanson, Thomas. (2020). Methodological considerations for survey research: Validity, reliability, and quantitative analysis. Linguistica Antverpiensia. 19. 172-190. 10.52034/lanstts. v19i0.549.

Nicolopoulou, K., Karatas-Ozkan, M., Janssen, F., & Jermier, J. (Eds.). (2016). Sustainable Entrepreneurship and Social Innovation (1st ed.). Routledge. https://doi.org/10.4324/9781315748665.

Nihal, M. “What is Neom? Home to The Line at Saudi Arabia's megacity”. The National, 20 January 2023. https://www.thenationalnews.com/gulf/neom-everything-you-need-to-know-about-saudi-arabia-s-500-billion-megacity-of-the-future-1.1147655.

Porter, M. E. The Competitive Advantage: Creating and Sustaining Superior Performance. NY: Free Press, 1985. (Republished with a new introduction, 1998.).

Research Methods for Business: A Skill-Building Approach, 8th Edition, Roger Bougie, Uma Sekaran.

Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. Business Strategy and the Environment, 20(4), 222-237. https://doi.org/10.1002/bse.682.

Scheirer, M. A., & Dearing, J. W. (2011). An Agenda for Research on the Sustainability of Public Health Programs. American Journal of Public Health, 101(11), 2059. https://doi.org/10.2105/AJPH.2011.300193.

Schneider, N. R. (2020). Ecopreneurship: Business practices for a sustainable future (Vol. 3). Walter de Gruyter GmbH & Co KG.

Schumpeter, J. A. (1934). The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle (R. Opie, Trans.). Harvard University Press.

Shane, S., & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research on JSTOR. The Academy of Management Review, 217. https://doi.org/259271.

Shepherd, D. A., Patzelt, H. (2017). Trailblazing in Entrepreneurship: Creating New Paths for Understanding the Field. Germany: Springer International Publishing.

Shepherd, Dean & Patzelt, Holger. (2011). The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking "What Is to Be Sustained" With "What Is to Be Developed". Entrepreneurship Theory and Practice. 35. 137 - 163. DOI: http://doi.org/10.1111/j.1540-6520.2010.00426.x.

Social and Sustainable Entrepreneurship by Katz et al. (2011) https://archive.org/details/isbn_9781780520728_13/page/201/mode/1up?q=201.

Stevenson, H. H., & Jarillo, J. C. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. Strategic Management Journal, 11, 17–27. http://www.jstor.org/stable/2486667.

Stoner, J. (2011). Global Sustainability as a Business Imperative. Palgrave Macmillan DOI: https://doi.org/10.1007/978-0-230-11543-9_5.

Sustainable entrepreneurship and sustainability innovation: Categories and interrelations. Business Strategy and the Environment, 20(4), 222–237. https://doi.org/10.1002/bse.682.

Sustainable Entrepreneurship: Discovering, Creating and Seizing Opportunities for Blended Value Generation. (2018). United Kingdom: Taylor & Francis.

Yusuf, N., & Abdulmohsen, D. (2022). Saudi Arabia's NEOM Project as a Testing Ground for Economically Feasible Planned Cities: Case Study. Sustainability, 15(1), 608. https://doi.org/10.3390/su15010608.

Yusuf, N., & Albanawi, N.I. (2015). The Role of Entrepreneurship in Economic Development in Saudi Arabia. Business and Economics Journal, 7, 1-5.

Yusuf, Nadia. (2016). The Role of Entrepreneurship in Economic Development in Saudi Arabia. International Journal of Business and Economic Development. 4. 47. 10.4172/2151-6219.1000204.

Zaidan, E., Al-Saidi, M., & Hammad, S. H. (2019). Sustainable development in the Arab world – is the Gulf Cooperation Council (GCC) region fit for the challenge? Development in Practice, 29(5), 670–681. https://doi.org/10.1080/09614524.2019.1628922

Webography

ARAMCO Sustainability Report 2023

https://www.aramco.com/-/media/publications/corporate-reports/reports-and-presentations/2023/fy/sections/ara-2023-sustainability-english.pdf

FTSE4Good Index Series

https://www.lseg.com/en/ftse-russell/indices/ftse4good.

IBM, what are ESG frameworks? (n.a.)

https://www.ibm.com/think/topics/esg-frameworks.

IKEA Website

https://www.ikea.com/

IKEA Case Study, 2023 - DGB Group IKEA: leading the way in sustainability

https://www.green.earth/net-zero/case-studies/ikea-leading-the-way-in-sustainability

IKEA Annual Review FY24, IKEA Social Entrepreneurship

https://www.ikeasocialentrepreneurship.org/-/media/ikeasocialentrepreneurship/publications/ikea-social-entrepreneurship-annual-review-fy24.pdf.

IKEA year in review

https://www.inter.ikea.com/en/performance/ikea-year-in-review.

Iktva Website

https://iktva.sa/

ISO 26000 Social responsibility

https://www.iso.org/iso-26000-social-responsibility.html.

Jackson A. 2024 Technology Magazine, How IKEA has Committed to Global Digital Transformation

https://technologymagazine.com/digital-transformation/how-ikea-has-committed-to-global-digital-transformation.

KAUST University Website

https://sustainability.kaust.edu.sa/research/.

King Ch., 2024 Sustainability Magazine, Top 10 Sustainable Countries

https://sustainabilitymag.com/top10/top-10-sustainable-countries.

London Business School (2018), From fossil fuels to green energy: the Ørsted story

https://www.london.edu/think/iie-from-fossil-fuels-to-green-energy-the-orsted-story.

McKinsey Sustainability 2020, Ørsted's renewable-energy transformation

https://www.mckinsey.com/capabilities/sustainability/our-insights/orsteds-renewable-energy-transformation.

NEOM Website

https://www.neom.com/

NEOM Case Study, MISK 2023

A case study on the impact of NEOM on the Kingdom's GDP

https://hub.misk.org.sa/insights/saudistories/2023/case-study-neom-catalyst-for-progress-and-its-economic-impact-on-the-kingdom/?allowview=true

Nestle Website

https://www.nestle.com/sustainability/regenerative-food-systems.

OECD Green Growth Studies

https://www.oecd.org/en/publications/serials/oecd-green-growth-studies_g1g14154.html.

https://doi.org/10.1787/22229523

Orsted Global Case, 2023

https://www.casecompetition.com/wp-content/uploads/2023/03/GLOBAL-case-2023.pdf?media=1727716353

Orsted Sustainability Report 2019

https://cdn.orsted.com/-/media/www/docs/corp/com/investor/financial-reports/2019/annual2019/sustainability_report_2019_online-readable-version.pdf?rev=8a9979eba0984e469a3478643bf78565&hash=1C09A02A7E8B2E92EC13098ADD64D54D

Orsted Case Study- European Association of Communication Directors, 26 May 2020

https://eacd-online.eu/from-90-fossil-fuels-to-90-renewables-the-orsted-transformation-story

Orsted Innovation Report (n.d.)

https://orsted-innovationreport.com/orsted-innovation-better-faster-smarter.pdf

PWC (2024). Driving sustainability in Saudi Arabia: A bold vision towards a greener future

https://www.pwc.com/m1/en/media-centre/articles/driving-sustainability-in-saudi-arabia-a-bold-vision-towards-a-greener-future.html.

RDI, Sustainability and Essential Needs Joint Innovation Outlook Report (n.d.)

https://sustainability.innovation-weeks.com/wp-content/uploads/2024/12/Sustainability-and-Essential-Needs_Joint-Innovation-Outlook.pdf.

(SAUDI ARAMCO | ANNUAL REPORT 2023).

(SAUDI ARAMCO | ANNUAL REPORT 2024) https://www.aramco.com/-/media/publications/corporate-reports/reports-and-presentations/2024/fy/sections/ara-2024-sustainability-english.pdf.

Saudi Green Initiatives Website

https://www.sgi.gov.sa/.

Saudi Green Initiative Talks Program, 2023

https://www.sgi.gov.sa/media/lpie1ghg/sgi_talks_2023_program_english.pdf.

Statista Report (2025), IKEA - statistics & facts

https://www.statista.com/topics/1961/ikea/#topicOverview.

The Sustainable Development Goals (SDGs) Website

https://www.un.org/sustainabledevelopment/news/communications-material/.

Saudi Arabia Vision 2030 Website

https://www.vision2030.gov.sa/en.

Saudi Arabia's 'Vision 2030' To Transform Its Economy, Seeking Alpha, 2016

https://seekingalpha.com/article/3971119-saudi-arabias-vision-2030-to-transform-its-economy.

Saudi Arabia Vision 2030 Document

https://www.vision2030.gov.sa/media/rc0b5oy1/saudi_vision203.pdf.

SASB Standards (Sustainable Accounting Standards Board)

https://sasb.ifrs.org/standards/

United Nations Climate Change, The Paris Agreement

https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement#:~:text=The%20Paris%20Agreement's%20central%20aim,further%20to%201.5%20degrees%20Celsius.

United Nations Sustainable Development Cooperation Framework with the Kingdom of Saudi Arabia 2022–2026

https://unsdg.un.org/sites/default/files/2022-06/Kingdom%20Of%20Saudia%20Arabia_Cooperation_Framework_2022%20to%202026.pdf.

The Global Sustainability Assessment System (GSAS)

https://gsas.gord.qa/gsas-overview/.

What Is ISO 14001:2015 – Environmental Management Systems?

https://asq.org/quality-resources/iso-14001?srsltid=AfmBOoqGN51uYnlQWjFN3HH-za2oJ_A_tL6YLTLxDK_mbhiFRW6EWOAq

World Commission on Environment and Development (WCED). (1987). Our common future.

https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

https://www.usgbc.org/press/about-leed

https://www.certifiedenergy.com.au/leed/everything-you-need

https://www.circle-economy.com/frameworks

https://www.businessinsider.com/saudi-arabia-500-billion-city-desert-mega-city-fake-rain-2019-7?r=US&IR=T.

Tables

Table 1

Ørsted's Business Model and Its Contribution to Transforming The Industry

Strategic level	Focus Area	Key Challenges	Guiding Questions	Main Activities	Resulting Changes
Long-term (Strategic)	Vision for a green energy future	Transitioning to green power and reducing emissions	What unsustainable tech is being replaced? How to capture value from sustainable tech?	Global green power installations (wind, solar, bioenergy); Sustainability as a competitive edge	Shift from fossil fuels; Promote green energy production industry-wide
Medium-term (Tactical)	Stakeholder collaboration for success	Need for cleaner supply chains and energy market cooperation	Who to partner with? What sustainable practices to adopt? How to engage stakeholders?	Supplier decarbonization programs; Use of renewable energy in manufacturing	Supply chain sustainability through targeted supplier programs
Short-term (Operational)	Day-to-day transformation towards green energy	Aligning leadership and operations with sustainability	How to train staff? How to optimize sustainable daily practices? How to experiment and innovate?	Employee engagement; Offshore wind innovation; Fair pay and diversity initiatives; 50%+ boost in water and carbon productivity	Ørsted becomes a model sustainable business

***Note*.** This table adapted and summarized from MDPI

Table 2

ISEBV Programme Funding

EUR million	FY23	FY24
Grants	4.6	5.3
Loans	0.4	0.7
Equity investments	0	0
Programme Funding	5.0	6.0
Key Figures:		
Accumulated grant spending as from FY19	19.2	24.5
Balance sheet value loans by 31 Aug	1.2	1.9
Balance sheet value equity investments by 31 Aug	0.8	0.8

***Note*.** This table adapted and summarized from IKEA Social Entrepreneurship Annual Review FY24

Table 3

Aramco Sustainability Entrepreneurship Dimensions

Aspect	Details
Indystry	Oil and Gas
Business Model	State-owned vertically integrated petroleum enterprise; diversifying into low-carbon solutiins
Sustainability Focus	Carbon capture, renewables, energy efficiency
Key Initiatives	Investments in hydrogen, carbon capture storage (CCS), and low-carbon fuels
Entrepreneurial Role	Partners with startups in clean energy, runs entrepreneurship centers such as Wa'ed
Frameworks	UN SDGs, TCFD, Saudi Green Initiative
Challenges	Emission intensity, global energy transition pressure, and fossil fuel dependency

Table 4
NEOM Sustainability Entrepreneurship Dimensions

Aspect	Details
Indystry	Smart Cities, Renewable Energy, Technology, Tourism
Business Model	Futuristic, innovation-driven city under development; PPP and state-backed investment
Sustainability Focus	100% renewable energy, smart infrastructure, carbon neutrality
Key Initiatives	The Line (Zero-emission city), Enowa (green hydrogen), and regenrative development models
Entrepreneurial Role	Incubates startups in clean energy, AI, and biotech; partners with global innovators
Frameworks	UN SDGs, Saudi Vision 2030, Circular Economy Principles
Challenges	Implementation scale, desert ecosystem management, humand resettlement concerns

Table 5

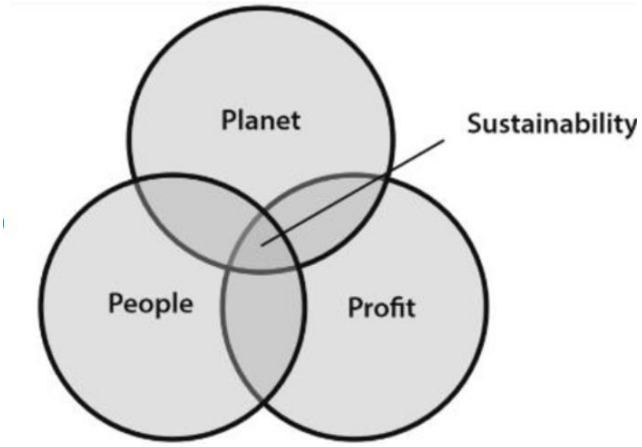
Comparative Analysis of Sustainable Entrepreneurship Practices

Company	Country	Sector	Sustainability Practices	Theory Link	Key Impact
Aramco	Saudi Arabia	Oil & Gas	Carbon capture projects, renewable energy investments, and sustainability innovation hubs	Institutional Theory	Transition initiatives toward a lower-carbon economy
NEOM	Saudi Arabia	Smart Cities	100% renewable energy goals, circular economy models, and environmental restoration projects	Resource-Based View	Creation of a fully sustainable city model
Ørsted	Denmark	Energy	Shifted from fossil fuels to a leading offshore wind energy company	Institutional Theory	Global leadership in renewable energy transformation
IKEA	Sweden	Retail & Furniture	Use of sustainable materials, energy-efficient stores, and circular economy initiatives	Triple Bottom Line	Integration of sustainability into mass consumer goods

Figures

Figure 1

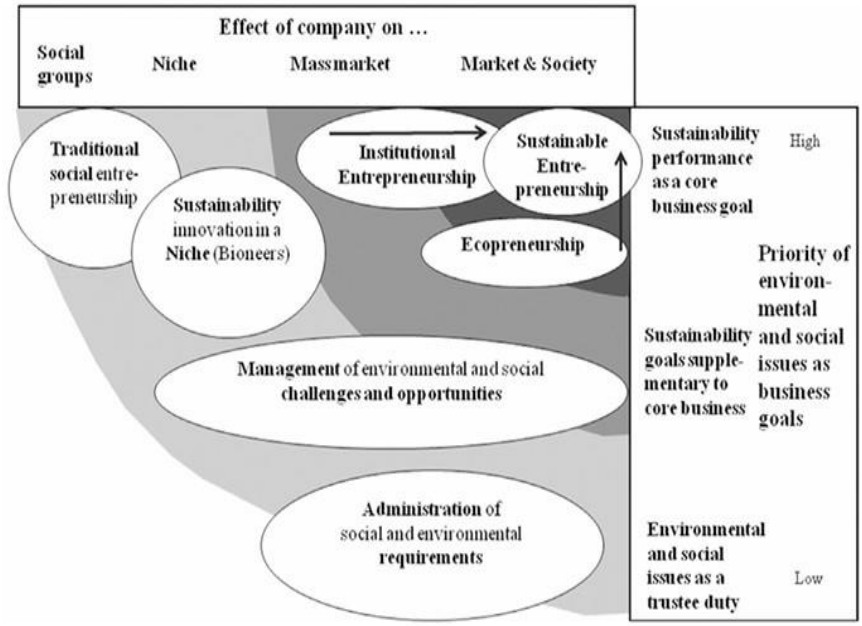
The Triple Bottom Line



Note. This figure reproduced from Elkington (1997)

Figure 2

Perspectives and development of sustainable entrepreneurship and sustainability innovation



Note. This figure reproduced from extended framework based on Schaltegger, 2002

Figure 3

SDG



Note. This figure reproduced from the UN

Figure 4

Vision 2030 Goals: Key Sectors and Themes



Note. This figure reproduced from KSA Vision 2030 & Aranca Research

Figure 5

SGI Roles



Note. This figure reproduced from SGI website

Figure 6

Theoretical Framework for Sustainability Entrepreneurship

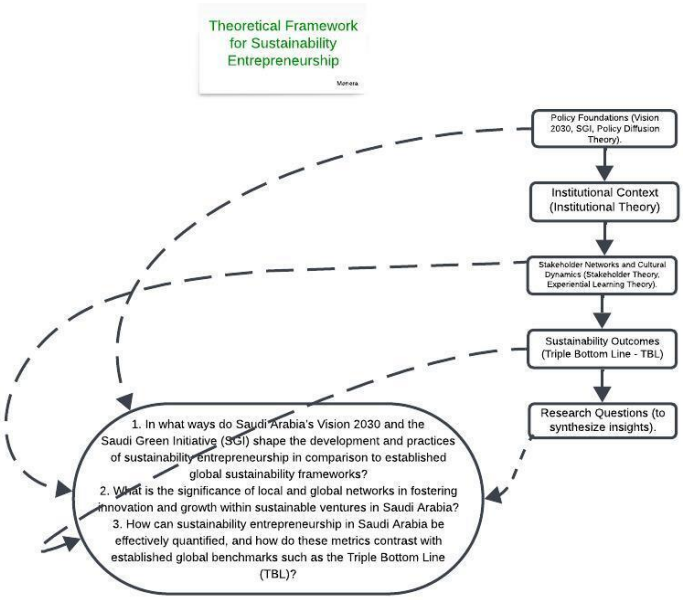
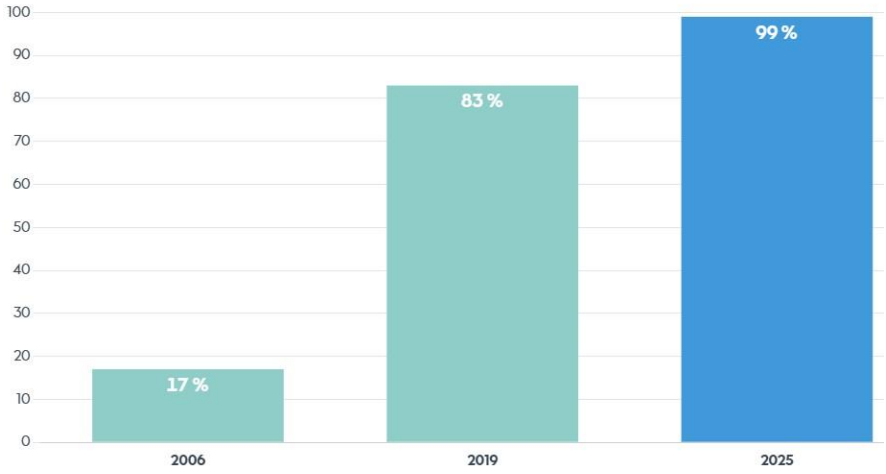


Figure 7

Ørsted´s share of green power and heat



Note. This figure reproduced from Ørsted

Figure 8

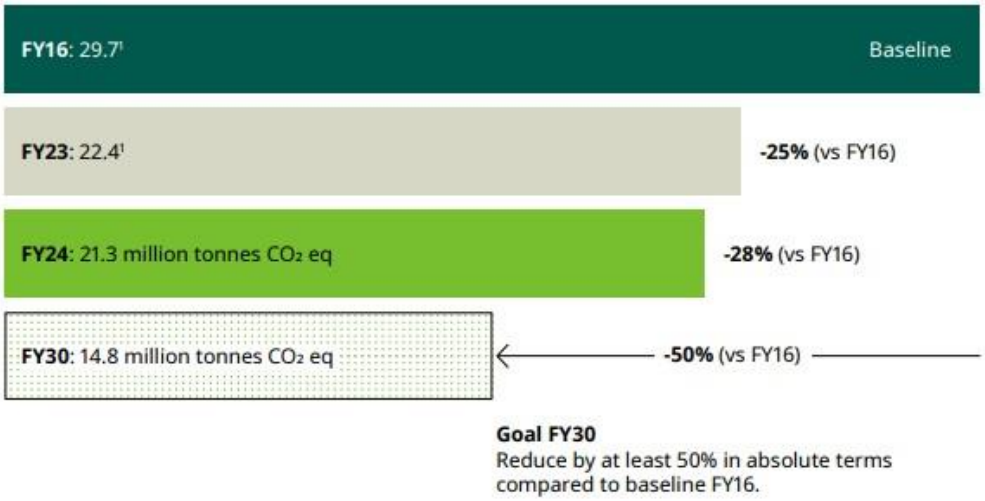
IKEA retail sales in billion EUR



Note. This figure Reproduced from IKEA

Figure 9

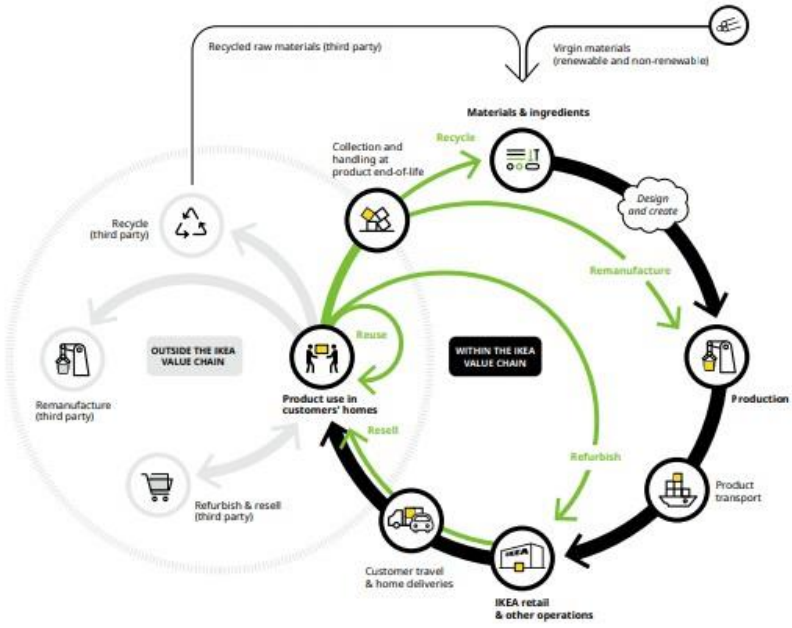
Performance vs. baseline FY16



Note. This figure Reproduced from IKEA Sustainability Report 2024

Figure 10

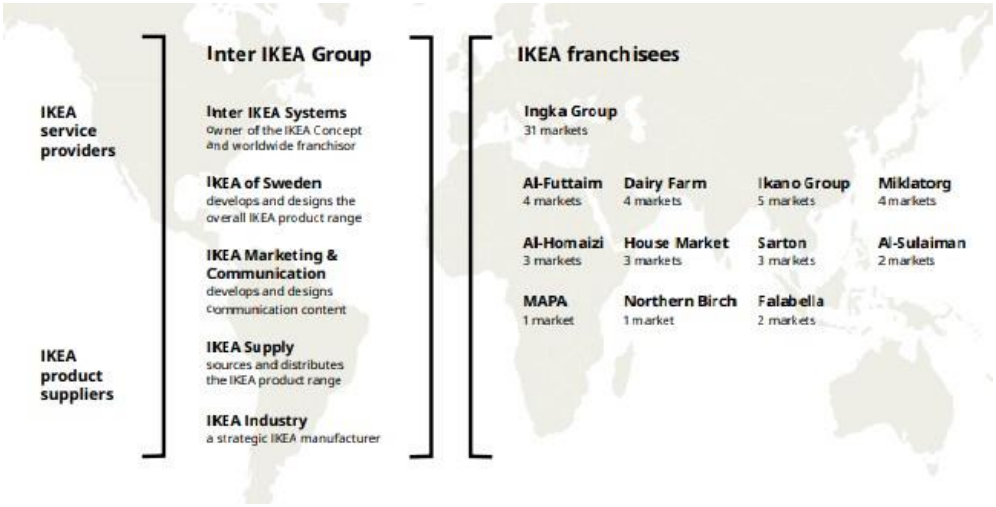
A vision of a circular future



Note. This figure Reproduced from IKEA Sustainability Report 2024

Figure 11

The IKEA franchise system



Note. This figure Reproduced from Inter IKEA 2024

Appendix A

Statement Of Original Work

I attest that the ideas, experimental work, results, analyses, and conclusions reported in this dissertation are entirely my effort. I also certify that the work is original except where otherwise acknowledged, and I have paraphrased, summarized, or used direct quotes following the guidelines in the APA Publication Manual.

Monera AlKhaldi June 2025

Appendix B

Consent Forms

Consent Form B1

Entrepreneurs Interview Participants

You are invited for interview in a research study titled *"Sustainability Entrepreneurship in Saudi Arabia."* The purpose of this interview is to explore the impact of policies, cultural factors, and entrepreneurial challenges related to sustainability in the Kingdom. Participation is voluntary. You may choose not to participate or withdraw at any time. Your responses will be anonymous and confidential, and data will be used solely for academic research purposes. By participating, you consent to be part of this study.

Consent Form B2

Experts Interview Participants

Thank you for participating in this research on sustainability entrepreneurship in Saudi Arabia. Your insights as a key stakeholder are invaluable. This interview aims to explore policy impacts, entrepreneurial challenges, cultural influences, and engagement with global sustainability frameworks. Your participation is entirely voluntary, and you may decline to answer any question or withdraw from the interview at any time without consequence. Your responses will remain confidential. No personally identifying information will be shared in any reports or publications resulting from this study. The data collected will be used solely for academic research purposes and may be quoted anonymously.
By participating in this interview, you are giving your informed consent to be part of the research.

Appendix C

Entrepreneurs' Interview

This interview was designed to collect insights from sustainability-focused entrepreneurs in Saudi Arabia as part of the qualitative data collection process for this study. The interview was conducted via Google Forms and included both structured demographic questions and open-ended questions addressing policy impacts, entrepreneurial challenges, cultural influences, and sustainability practices.

Section 1: Demographic Information

1. Age:

- 18-- 25
- 26–35
- 36–45
- 46–55
- 56+

2. Gender:

- Male
- Female

3. Region of Operation:

- Central
- Eastern
- Western
- Northern
- Southern

4. Business Type:

- Technology
- Renewable Energy
- Education
- Agriculture
- Manufacturing
- Other

5. Business Stage:

- Pre-startup
- Startup
- Growth
- Established

6. Years of Entrepreneurial Experience:

- Less than 1 year
- 1–3 years
- 4–6 years
- 6+ years

Section 2: Policy and Government Support

1. How supportive do you find current government policies for sustainability entrepreneurship?

2. Which policy areas need the most improvement?

3. Have you benefited from any government sustainability programs? Please explain.

Section 3: Entrepreneurial Challenges

1. What are the most significant challenges you face? (Select all that apply)

2. Do you agree or disagree: Accessing financial resources is a significant barrier for sustainability entrepreneurs.

3. What type of funding have you used?

Section 4: Cultural and Regional Influence

1. How supportive is Saudi society of sustainability entrepreneurship?

2. What cultural or regional factors have influenced your entrepreneurial journey?

3. How do regional differences within Saudi Arabia impact sustainability entrepreneurship?

Section 5: Sustainable Practices and Impact

1. What sustainable practices does your business (or a business you know) implement?

2. How do you measure the impact of your sustainability efforts?

Section 6: Growth and Adoption

1. What is the most important factor for growing sustainability entrepreneurship in Saudi Arabia?

2. What would encourage more entrepreneurs to adopt sustainable practices?

Section 7: Global Influence

1. Which global sustainability frameworks or practices do you consider relevant to your business? (Max 3 choices)

2. What lessons can Saudi entrepreneurs learn from global sustainability practices?

Appendix D

Experts' Interview

This appendix presents the semi-structured interview guide used for collecting expert perspectives. Participants were professionals with expertise in sustainability and entrepreneurship in the Saudi Arabian context. The questions aimed to explore policy impacts, entrepreneurial challenges, cultural influences, and global frameworks.

1. Can you please introduce yourself and your professional background?
2. What is your area of expertise, and how does it relate to sustainability entrepreneurship?
3. How does your academic work align with sustainability and entrepreneurship in Saudi Arabia?
4. What are the main gaps in current academic research related to sustainable entrepreneurship?
5. Can you describe any collaborations you've had with entrepreneurs or government entities in this area?
6. How is sustainability integrated into entrepreneurship education or curricula at your institution?
7. Are there specific interdisciplinary approaches (e.g., collaboration between engineering and business schools) that you think would be beneficial?
8. What challenges do you perceive in connecting academic research with practical entrepreneurial needs in sustainability?
9. Are there institutional or systemic barriers that hinder academic contributions to sustainability entrepreneurship?
10. What opportunities exist for academics to influence sustainability entrepreneurship policies in Saudi Arabia?
11. What recommendations would you give to early-career researchers interested in this field?
12. How do cultural and regional factors shape sustainability-focused entrepreneurial ventures in Saudi Arabia?

13. Do you see significant differences in how sustainability entrepreneurship is perceived across regions within Saudi Arabia?

14. What policy changes do you think are essential to fostering sustainability entrepreneurship?

15. How well do Saudi entrepreneurs and academics engage with global sustainability frameworks like the UN SDGs or ISO 26000?

16. How does the Saudi approach to sustainability entrepreneurship compare with global practices or frameworks?

17. Are there international academic models or case studies you believe could be adapted to Saudi Arabia?

18. What role should academic institutions play in advancing sustainability entrepreneurship in the future?

19. What international collaborations or networks would you recommend enhancing sustainability entrepreneurship in Saudi Arabia?

20. What specific policy changes or initiatives would you recommend supporting sustainability entrepreneurship?

21. How can Saudi Arabia better integrate global sustainability frameworks into its entrepreneurial ecosystem?

22. What new programs or collaborative models between academia, entrepreneurs, and government could foster sustainability innovation?

Appendix E

Overview of Case Study

This appendix concisely summarizes the four companies I studied for this research. I focused on two organizations based in Saudi Arabia: Aramco and NEOM, alongside two global leaders in sustainability, Ørsted and IKEA. There were no direct interviews conducted with employees but instead I used secondary data. I selected these companies based on their public visibility, commitment to sustainability initiatives, and the availability of secondary data. They also align with the research's objective to explore how sustainability entrepreneurship is practiced locally and globally. I gathered the information for these case studies from various secondary sources, including official websites, sustainability reports, and industry publications. In the tables section, I've included a comparative analysis that looks at the key dimensions of sustainability entrepreneurship across these companies. (see table 5 in tables section).

Case Study E1

Aramco

Aramco was chosen as a case study due to its significant role in Saudi Arabia's energy sector and its ongoing efforts to incorporate sustainability into large-scale industrial processes.

Case Study E2

NEOM

NEOM is a key national project that seeks to redefine sustainability and innovation in urban development throughout Saudi Arabia.

Case Study E3

Ørsted

Based in Denmark, Ørsted has successfully shifted its focus from fossil fuels to renewable energy, making it a global benchmark for sustainable transformation.

Case Study E4

IKEA

IKEA was selected for its ongoing worldwide initiatives to integrate circular economy practices and a commitment to environmental responsibility within its retail and supply chain operations.