International Journal of Economics and Business Management Research
ISSN: 3107-9423 | Volume 2 Issue 2, 69-77, April-June 2026
DOI: https://doi.org/10.64137/31079423/IJEBMR-V2I2P108

Received: 24/03/2026 Revised: 15/04/2026 Accepted: 01/05/2026 Published: 04/05/2026

Original Article

A Study On Sustainable Development Goal (SDG) With Special Reference to SDG-9: Industry, Innovation And Infrastructure

[1]DR. RAJESH KUMAR PANDEY, [2]MS. DHIYA PATEL
[1]Associate Professor & HOD (Mkt.), SSR IMR, Silvassa, Permanently Affiliated to SPPU, Pune.
[2]BBA Student 2nd Year, Sem IV, SSR IMR, Silvassa, Permanently Affiliated to SPPU, Pune.

ABSTRACT: *Sustainable development refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It emphasizes the integration of three key dimensions: economic growth, social inclusion, and environmental protection. In response to increasing global challenges such as poverty, inequality, climate change and environmental degradation, the United Nations adopted the 17 Sustainable Development Goals (SDGs) in 2015 under the 2030 Agenda for Sustainable Development. These goals provide a comprehensive framework for addressing the world's most urgent problems. These problems include Industry, Innovation and Infrastructure, which play an important role in improving productivity, employment and overall quality of life. There have been studies conducted on overall SDGs and on specific SDGs as well. This paper refers to SDG 9: Industry, Innovation and Infrastructure. This Study is an exploratory and descriptive research conducted by the help of both Primary and Secondary Data. A survey was conducted to collect Data from across 26 Companies by adopting Convenience Sampling technique. The authors aim to understand the significance of Sustainable Development Goals (SDG) provided by the United Nations (UN). The authors further aim to study the essence of SDG – 9 Industry, Innovation & Infrastructure in Indian Context. The paper extends the best practices across Industry, Innovation & Infrastructure as gathered through the study. This literary effort encapsulates the study of sustainability practices adopted by selected organizations with special reference to SDG-9: Industry, Innovation and Infrastructure. The inferences gathered are indicative in nature and not exhaustive.*

KEYWORDS: *Sustainability, Sustainable Development Goals (SDG), SDG – 9, Industry, Innovation, Infrastructure.*

1. INTRODUCTION

Sustainable development has emerged as one of the most critical global priorities in the 21st century due to rapid industrialization, technological advancement and increasing pressure on natural resources. To address the growing economic, social, and environmental challenges faced by nations worldwide, the United Nations (UN) introduced the Sustainable Development Goals (SDGs) in 2015 as part of the 2030 Agenda for Sustainable Development. These 17 interlinked goals provide a comprehensive framework for achieving inclusive growth, environmental protection, and social well-being for present and future generations. Among the 17 SDGs, Sustainable Development Goal 9 (SDG-9): Industry, Innovation and Infrastructure plays a pivotal role in fostering long-term economic growth and sustainable development. Strong infrastructure, sustainable industrialization and continuous innovation are essential drivers of productivity, employment generation and overall national development. SDG-9 emphasizes the need to build resilient infrastructure, promote inclusive and sustainable industrial growth and enhance technological capabilities, particularly in developing countries.

In the Indian context, SDG-9 is of significant importance due to the country's rapid economic expansion, growing population, and increasing demand for modern infrastructure and technological advancement. India's focus on initiatives such as "Make in India," digital transformation and infrastructure development highlights the relevance of SDG-9 in achieving balanced and sustainable growth. However, challenges such as unequal access to technology, environmental concerns, financial constraints for small enterprises and regional disparities continue to affect progress. This study aims to analyze the concept and significance of Sustainable Development Goals with special reference to SDG-9. It attempts to understand the role of industry, innovation and infrastructure in achieving sustainable development and to identify best practices that support inclusive and environmentally responsible growth. Through this research, the study seeks to contribute to a better understanding of how SDG-9 can be effectively implemented to support sustainable economic development in India.

2. LITERATURE REVIEW

The researchers have referred existing literature to conduct the review and present relevant references while identifying the research gap. Several literatures have been referred; following is the review of those literatures. A United Nations study (2015) discusses the Sustainable Development Goals (SDGs) and emphasizes their role in achieving balanced economic, social, and

environmental development. The study highlights that the SDGs provide a global framework to address major developmental challenges faced by nations across the world. Among the 17 SDGs, SDG-9 focuses on Industry, Innovation and Infrastructure as key drivers of sustainable economic growth.

Porter, M., & Kramer, M. (2011). Creating Shared Value: How to Reinvent Capitalism and Unleash a Wave of Innovation and Growth. Harvard Business Review, 89, 62-77. Porter and Kramer (2011) explain that sustainable and inclusive industrialization improves productivity, employment generation and long-term competitiveness. The World Bank (2018) highlights that resilient infrastructure plays a vital role in enhancing connectivity, access to basic services and economic efficiency. OECD (Organisation for Economic Co-operation and Development) (2019) states that innovation and technological advancement strengthen industrial performance through research and development, digitalization and adoption of modern technologies. According to UNIDO (United Nations Industrial Development Organization (2020)), small and medium enterprises contribute significantly to industrial growth but face challenges related to finance, technology and market access.

The literature review also reveals that while numerous studies are available on Sustainable Development Goals as a whole, limited research has been conducted specifically on SDG-9. Most existing studies focus on general sustainability aspects, leaving a research gap in understanding Industry, Innovation and Infrastructure in detail. Hence, the present study attempts to bridge this gap by analyzing SDG-9 with special reference to Industry, Innovation and Infrastructure and identifying best practices that support sustainable economic growth.

2.1. GAP IDENTIFIED

The literature indicates that while many studies discuss the SDGs broadly, few focus specifically on SDG-9. Therefore, the present study attempts to bridge this gap by analyzing SDG-9, with special reference to Industry, Innovation, and Infrastructure, to promote sustainable economic growth in the study region.

3. OBJECTIVES OF THE STUDY

The Researchers have considered the following objectives for the study:

- To understand the significance of Sustainable Development Goals (SDG) provided by the United Nations (UN).
- To study the essence of SDG – 9 Industry, Innovation & Infrastructure in Indian Context.
- To extend the best practices across Industry, Innovation & Infrastructure as gathered through the study.

4. RESEARCH METHODOLOGY

A Study on Sustainable Development Goal (SDG) with special reference to SDG-9: Industry, Innovation and Infrastructure is an exploratory and descriptive study conducted by the help of both Primary and Secondary Data. A survey was conducted to collect Data from across 26 Companies by adopting Convenience Sampling technique. The authors aim to understand the significance of Sustainable Development Goals (SDG) provided by the United Nations (UN). The authors further aim to study the essence of SDG – 9 Industry, Innovation & Infrastructure in Indian Context. The paper extends the best practices across Industry, Innovation & Infrastructure as gathered through the study. This literary effort encapsulates the study of sustainability practices adopted by selected organizations with special reference to SDG-9: Industry, Innovation and Infrastructure, focusing on sustainability practices from an organizational perspective. The inferences gathered are indicative in nature and not exhaustive.

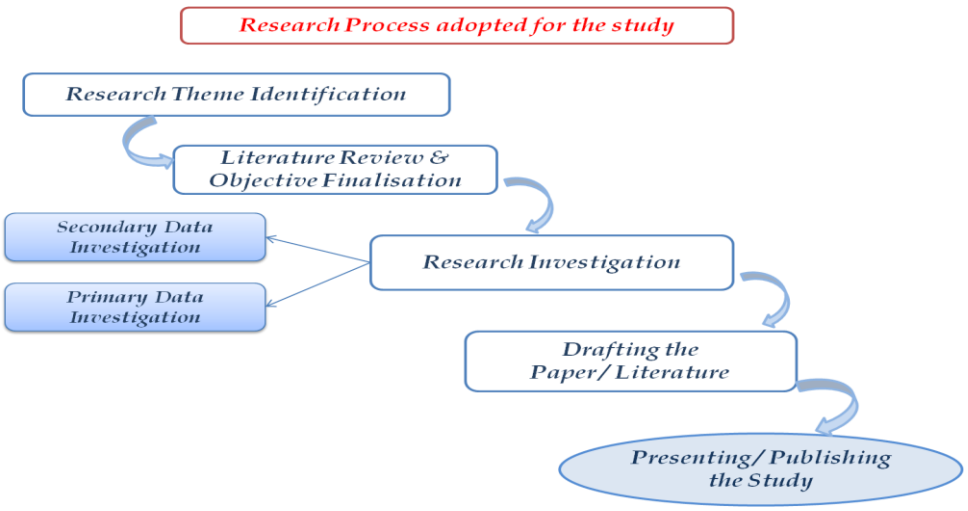

FIGURE 1 Research Process Adopted

Source: Authors' Understanding

HYPOTHESIS:

Percentage Method – 50% - Basis of Majority

Ho: Majority of Companies (50%+) aren't integrating sustainable practices in their operations.

H1: Majority of Companies (50%+) are integrating sustainable practices in their operations.

5. SUSTAINABILITY

Sustainability is the practice of maintaining and supporting natural, social and economic systems in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs. It emphasizes a balance among environmental protection, economic growth, and social well-being, ensuring that progress in one area does not harm the others. At its core, sustainability is built on three pillars:

- Environmental Sustainability, which focuses on conserving natural resources, reducing pollution, protecting biodiversity and promoting renewable energy.
- Economic Sustainability, which encourages responsible growth, innovation and financial stability without overusing resources.
- Social Sustainability, which promotes equality, access to education and healthcare, safe communities and overall quality of life.

The concept of sustainability is crucial in today's world, where challenges such as climate change, population growth, overconsumption of resources, and environmental degradation threaten the planet and human well-being. It requires collective efforts from governments, businesses, communities and individuals to adopt sustainable practices in everyday life, from green energy and sustainable agriculture to eco-friendly personal habits.By prioritizing sustainability, societies can preserve natural resources, improve quality of life, ensure economic stability and protect the environment for future generations. In essence, sustainability is not only a global necessity but also a shared responsibility that ensures a healthier, fairer and more secure world.

6. UNITED NATIONS (UN) & SUSTAINABLE DEVELOPMENT GOALS (SDG) BY UN

The United Nations (UN) is an international organization established in 1945 after the Second World War with the primary objective of maintaining global peace, security and cooperation among nations. Over time, the role of the UN expanded to include social, economic and environmental development. In response to increasing global challenges such as poverty, inequality, climate change and environmental degradation, the United Nations adopted the Sustainable Development Goals (SDGs) in 2015 under the 2030 Agenda for Sustainable Development. The United Nations promotes this concept to ensure long-term global prosperity and environmental sustainability. The Sustainable Development Goals consist of 17 interlinked global goals and 169 specific targets to be achieved by the year 2030. These goals provide a comprehensive framework for addressing the world's most urgent problems.

The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. These goals were introduced to address the world's most pressing social, economic and environmental challenges in a balanced and integrated manner. The SDGs came into force on 1st January 2016 and aim to achieve a better and more sustainable future for all by the year 2030. Before the SDGs, the United Nations implemented the Millennium Development Goals (MDGs) from 2000 to 2015, which focused mainly on reducing extreme poverty and improving basic human development indicators. Although the MDGs achieved significant progress, many issues such as inequality, climate change, unemployment and unsustainable consumption remained unresolved. To overcome these limitations, the SDGs were introduced with a broader, more inclusive and universal approach applicable to all countries developed and developing alike.

7. THE 17 SUSTAINABLE DEVELOPMENT GOALS

The United Nations has identified the following 17 SDGs:

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life below Water

15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals

Each goal has specific targets and indicators to measure progress and ensure accountability.

8. SDG – 9: INDUSTRY, INNOVATION, INFRASTRUCTURE

Sustainable Development Goal 9 (SDG-9) aims to build resilient infrastructure, promote inclusive and sustainable industrialization and encourage innovation for long-term economic growth. Infrastructure, industry and technology play an important role in improving productivity, employment and overall quality of life. However, global manufacturing and industrial growth have been affected by challenges such as economic slowdown, high inflation, energy crises, supply chain disruptions and the impact of the COVID-19 pandemic. Although progress has been made in technological development and digital connectivity, many developing and underdeveloped countries still face inequalities in industrial growth and access to infrastructure. Therefore, achieving SDG-9 by 2030 requires strong policy support, investment in sustainable infrastructure, technological innovation and inclusive industrial development to ensure balanced and sustainable economic progress.

8.1. TARGETS OF SDG-9 AS PER UNITED NATIONS

Target 9.1 – Sustainable and Resilient Infrastructure

Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

Target 9.2 – Inclusive and Sustainable Industrialization

Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.

Target 9.3 – Access of Small Enterprises to Financial Services

Increase access for small-scale industrial and other enterprises, particularly in developing countries, to financial services, including affordable credit, and to integration into value chains and markets.

Target 9.4 – Sustainable Infrastructure and Clean Technologies

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes.

Target 9.5 – Scientific Research and Technological Capacity

Enhance scientific research and upgrade the technological capabilities of industrial sectors in all countries, particularly developing countries, including encouraging innovation and increasing research and development expenditure.

9. RESULTS & DISCUSSION

9.1. DEMOGRAPHIC ANALYSIS

9.1.1. THE TYPE OF SECTORS (RESPONDING COMPANIES)

Manufacturing – 46% , Services – 26%, Infrastructure / Construction – 21%,
IT / Technology – 7%

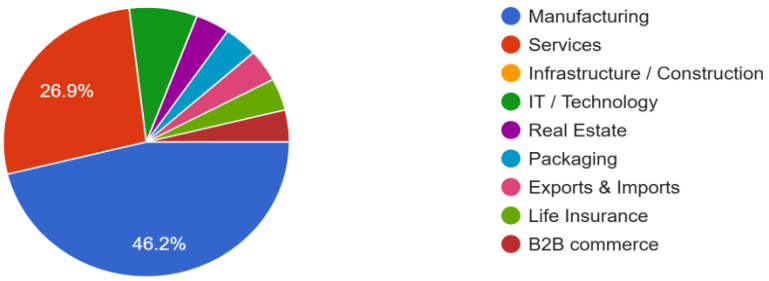

FIGURE 2 Types of sectors responded

9.1.2. RESPONDING COMPANIES LOCATION

Maharashtra	-	06
Gujarat	-	08
UT of DNH & DD	-	12
Total	-	**26**

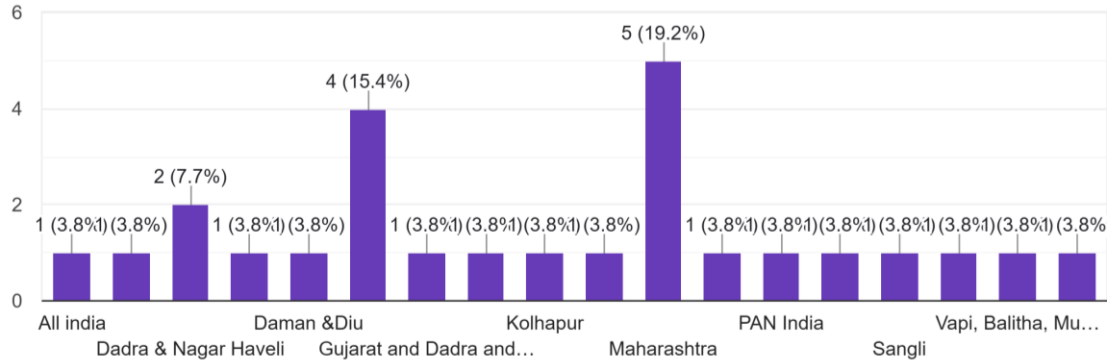

FIGURE 3 Location of Companies

9.1.3. NUMBER OF EMPLOYEES AT THE RESPONDING COMPANIES

Less than 50 – 2 Companies
50 – 249 - 2 Companies
250 – 999 - 6 Companies
1000 + - 16 Companies

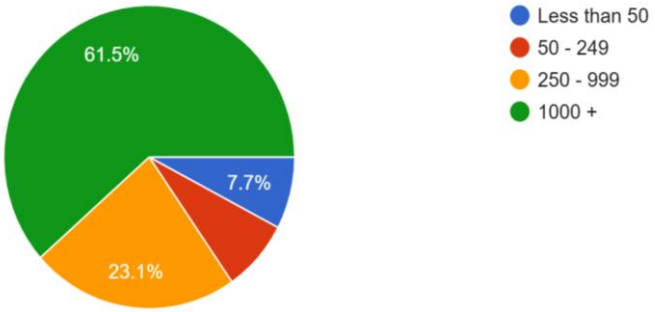

FIGURE 4 Employee Population In Companies

9.2. ANALYSIS & INFERENCES

9.2.1. ORGANIZATIONS INTEGRATING SUSTAINABLE PRACTICES IN OPERATIONS

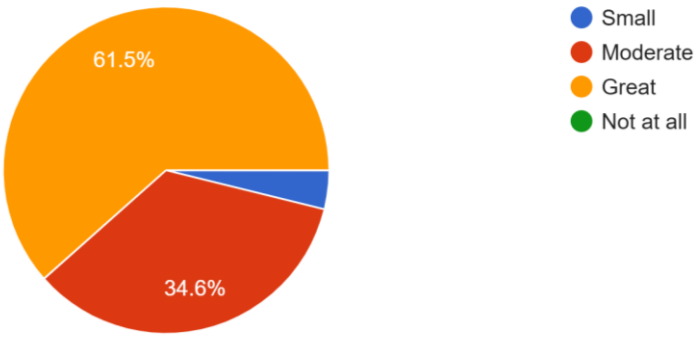

FIGURE 5 Sustainable Practices in Operations

Inferences: The analysis states that a huge 61.5% of the responding Organisations have integrated sustainable practices in operations while 34.6% of the respondents have integrated moderately and 3.8% of the respondent have integrated on a small scale.

9.2.2. THE SUSTAINABLE INFRASTRUCTURE INITIATIVE IMPLEMENTED BY COMPANY

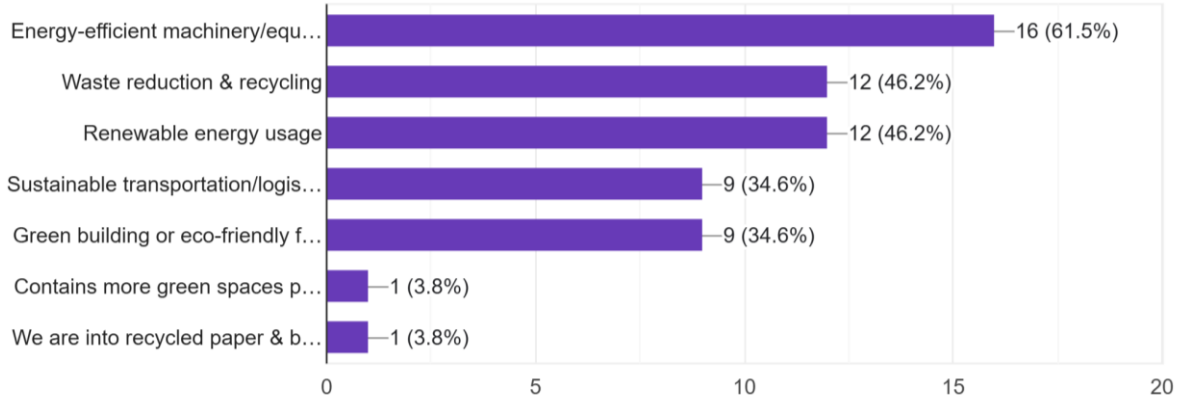

FIGURE 6 Sustainable initiative by company

Inferences: The analysis states that most of the responding organizations have adopted sustainable infrastructure initiatives, with 61.5% implementing energy-efficient infrastructure, 46.2% adopting waste reduction and renewable energy practices, and 34.6% investing in sustainable transportation and green building solutions. In contrast, only 3.8% of organizations reported minimal sustainability initiatives, indicating very low adoption at a small scale.

9.2.3. ORGANIZATION INVESTING IN INNOVATION FOR SUSTAINABILITY

FIGURE 7 Invest In Innovation For Sustainability

Inferences: The analysis indicates that organizations primarily invest in sustainability through digital approaches: 46.2% focus on digital transformation for process optimization, and 42.3% adopt advanced technologies to improve operational efficiency. However, only 11.5% of the responding organizations invest in research and development for eco-friendly products or processes, indicating limited emphasis on innovation-driven sustainability initiatives.

9.2.4. THE COMPANY RATINGS ITS COMMITMENT AT 1 OUT OF 5

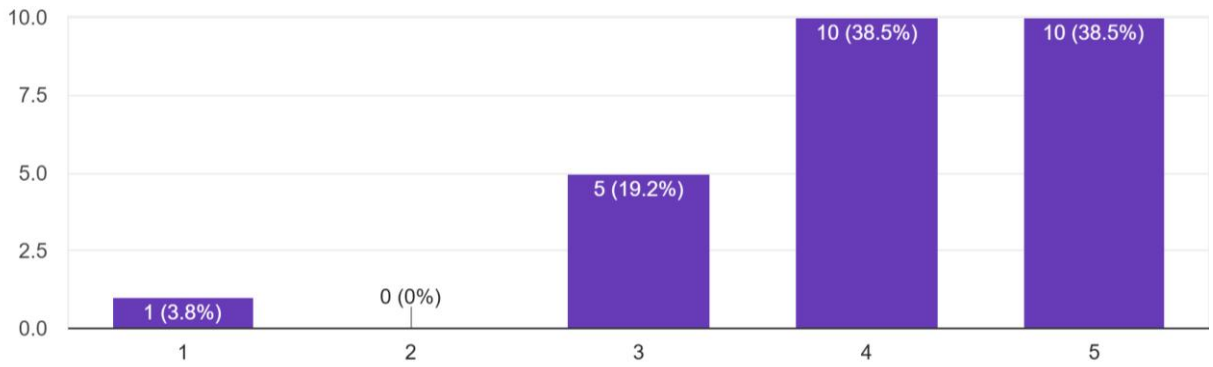

FIGURE 8 Rating of Company

Inferences: The analysis states that a significant 77% of the responding organizations rated their commitment to Industry, Innovation, and Infrastructure goals at a high level (ratings 4 and 5), while 19.2% of the respondents reported a moderate level of commitment (rating 3), and only 3.8% of the organizations indicated a very low level of commitment (rating 1).

9.2.5. THE MEASURABLE BENEFITS THE ORGANIZATION HAS ACHIEVED AFTER IMPLEMENTING SUSTAINABLE PRACTICES

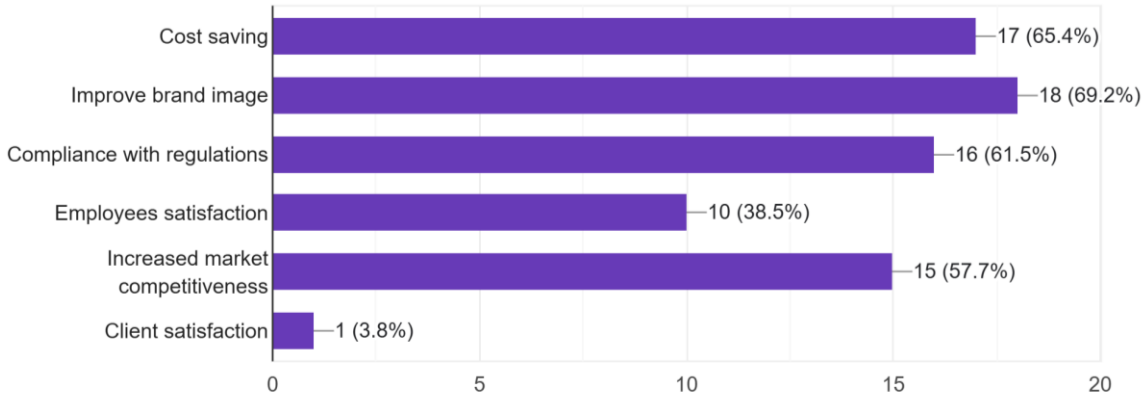

FIGURE 9 Organization Achievement After Implementing Sustainable Practices

Inferences: The analysis states that a majority of the responding organizations reported improved brand image (69.2%) and cost savings (65.4%) as the key measurable benefits after implementing sustainable practices, while 61.5% of the respondents experienced better compliance with regulations. Additionally, 57.7% of the organizations observed increased market competitiveness, whereas 38.5% reported improved employee satisfaction, and only 3.8% of the respondents noticed an improvement in client satisfaction.

9.2.6. THE MAIN CHALLENGE ORGANIZATION FACES IN ADOPTING SUSTAINABLE INFRASTRUCTURE AND INNOVATION

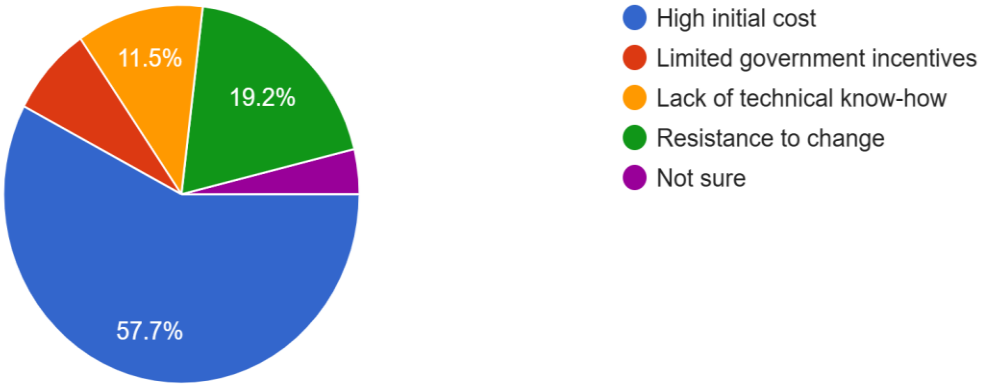

FIGURE 10 Challenges Faced By Organisation

Inferences: The analysis states that a majority of the responding organizations (57.7%) identified high initial cost as the main challenge in adopting sustainable infrastructure and innovation, while 19.2% of the respondents reported resistance to change as a key barrier. Additionally, 11.5% of the organizations faced a lack of technical know-how, 7.7% pointed to limited government incentives, and a small proportion of respondents were unsure about the challenges.

9.2.7. ORGANIZATION HAVING FORMAL SUSTAINABLE PRACTICES AND ALIGNED WITH SDG-9

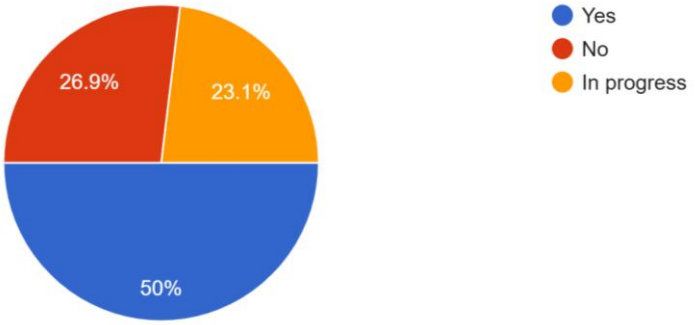

FIGURE 7 Organisation Doing Sustainable Practices.

9.2.8. THE TOP PRIORITY FOR INDIAN INDUSTRIES IS TO ACHIEVE SUSTAINABLE INFRASTRUCTURE AND INNOVATION BY 2030. BELOW MENTIONED ARE THE RESPONSES OF THE COMPANIES THAT PARTICIPATED IN THE SURVEY

- Reuse and recycling, along with maximizing green cover
- Becoming carbon neutral
- Renewable energy and digitization
- Follow ethics, rules, and regulations
- Alertness towards the importance of sustainability
- Green Innovation and inclusive transformation
- Sustainable procurement
- Zero carbon emissions and 100% digitalization processes
- Boosting the R&D for green sectors or driving towards sustainable technology
- Adopting Circular Economy models

HYPOTHESIS TESTING: Percentage Method – 50% - Basis of Majority

Ho: Majority of Companies (50%+) aren't integrating sustainable practices in their operations.

H1: Majority of Companies (50%+) are integrating sustainable practices in their operations.

Null Hypothesis Rejected & Alternate Hypothesis accepted to a great extent 61.5% responding companies are integrating sustainable practices in their operations

10. FINDINGS

- The Researchers find that organizations are increasingly integrating sustainable practices into their operations, as the majority of the responding organizations (61.5%) have integrated sustainable practices to a large extent.
- The Researchers find that organizations are actively implementing various sustainable infrastructure initiatives. The analysis reveals that energy-efficient infrastructure is the most widely adopted initiative, implemented by 61.5% of the responding organizations.
- The Researchers find that organizations are investing in innovation primarily through digital means to support sustainability. The analysis indicates that maximum responding organizations, i.e., 46.2%, invest in digital transformation for process optimization, followed by 42.3% that have adopted advanced technologies to improve efficiency.
- The Researchers find that organizations demonstrate a high level of commitment towards Industry, Innovation, and Infrastructure goals. The analysis states that a significant majority of the respondents (77%) rated their commitment at a high level (ratings 4 and 5) with respect to Industry, Innovation, and Infrastructure goals.
- The Researchers find that organizations have experienced multiple measurable benefits after implementing sustainable practices. The analysis depicts that improved brand image (69.2%) and cost savings (65.4%) are the most commonly reported benefits. Additionally, 61.5% of the respondents experienced better regulatory compliance, while 57.7% reported increased market competitiveness. Improved employee satisfaction was observed by 38.5% of the organizations, whereas only 3.8% reported improved client satisfaction, indicating varied outcomes across different performance dimensions.
- The Researchers find that organizations face several challenges in adopting sustainable infrastructure and innovation. The analysis indicates that high initial cost is the major challenge, reported by 57.7% of the responding organizations.
- The Researchers find that organizations are at varying stages of adopting formal sustainability practices aligned with SDG-9. The analysis states that half of the responding organizations (50%) have a formal sustainability policy or strategy aligned with SDG-9.

11. BEST PRACTICES: INDUSTRY, INNOVATION, INFRASTRUCTURE

TABLE 1 Sustainable Strategies for Industry, Infrastructure, and Innovation Development

Industry	Infrastructure	Innovation
Green Manufacturing	Energy Efficient Buildings	Focus on R & D
Waste Reduction Programmes	Renewable Energy Installation	Encourage Employees for Innovation
Sustainable Supply Chain Partnerships	Water Conservation System	Technology Transfer Partnership
Carbon Footprint Measurement	Digital Infrastructure Development	Digital Transformation
Green Procurement Policy	Green Transportation Policy	Collaborate with Start Ups
Industry – Academia Collaboration	Disaster Resilient Infrastructure	Innovative Funding Allocation
Transparent ESG Reporting	Collaborative Infrastructure	Open to Innovative Models

12. CONCLUSION

This study highlights that Sustainable Development Goal 9 (SDG-9) has become a key driver of sustainable economic growth by strengthening industry, innovation, and infrastructure. The findings show that organizations are increasingly adopting sustainable practices, digital transformation, and energy-efficient infrastructure, which improve operational efficiency, competitiveness, and long-term resilience. Rather than limiting growth, sustainability acts as a supportive approach that enhances industrial performance and innovation. The study also emphasizes that the impact of SDG-9 extends beyond infrastructure development. Its implementation influences organizational strategies, workforce skills, and policy frameworks. While progress toward sustainable industrialization is evident, challenges such as high initial costs and limited innovation investment remain. In conclusion, achieving SDG-9 by 2030 requires balanced integration of technology, supportive government policies, skilled human resources, and responsible industrial practices.

13. FUTURE SCOPE OF THE STUDY

The current study is a good mix of Primary and secondary data analysis. Such studies have future scope in the form of:

1. Increased Sample Size (the current study has a limited 26 companies as sample) will lead to enhanced results.
2. A Comparative study across Industries like Manufacturing, Services etc. will help in finding results across Industries.
3. A regional comparative study will also lead to robust inferences.

REFERENCES

[1] J. Meadowcroft, "Sustainability Description, Theories, & Practices," Encyclopædia Britannica. Feb. 19, 2025. Available: https://www.britannica.com/science/sustainability

[2] United Nations, "Sustainable Development Goals," United Nations. https://www.un.org/en/exhibits/page/sustainable-development-goals

[3] United Nations, "Sustainable Development Goals (SDGs) | UN Office for Sustainable Development," unosd.un.org, 2024. https://unosd.un.org/content/sustainable-development-goals-sdgs

[4] "The Global Goals," The Global Goals. https://globalgoals.org

[5] "What Is Sustainability, And Why Is It Important?," Unity Environmental University, Jan. 02, 2024. https://unity.edu/articles/what-is-sustainability

[6] United Nations, "Infrastructure and Industrialization - United Nations Sustainable Development," United Nations Sustainable Development, 2024. https://www.un.org/sustainabledevelopment/infrastructure-industrialization/

[7] United Nations, "The Sustainable Development Agenda," United Nations Sustainable Development, Aug. 29, 2024. https://www.un.org/sustainabledevelopment/development-agenda/

[8] "Sustainability: Definition, Importance, Uses & Example," Tata Power, 2023. https://www.tatapower.com/glossary/s/sustainability

[9] S. Küfeoğlu, "SDG-9: Industry, Innovation and Infrastructure," *Emerging Technologies*, pp. 349–369, 2022, doi: https://doi.org/10.1007/978-3-031-07127-0_11.

[10] "Porter, M., & Kramer, M. (2011). Creating Shared Value How to Reinvent Capitalism and Unleash a Wave of Innovation and Growth. Harvard Business Review, 89, 62-77. - References - Scientific Research Publishing," *Scirp.org*, 2019. https://www.scirp.org/reference/referencespapers?referenceid=2548990

[11] D. R. K. Pandey and S. Sarangi, "A Case Study on Talent Acquisition at Organisations," *International Journal of Engineering and Management Research*, vol. 13, no. 1, pp. 6–11, Feb. 2023, doi: https://doi.org/10.31033/ijemr.13.1.2.

[12] D. R. K. Pandey and H. Kataria, "A Study on Essence of Employee Engagement: An Organisational Perspective," *International Journal of Engineering and Management Research*, vol. 13, no. 4, pp. 113–125, Aug. 2023, doi: https://doi.org/10.31033/ijemr.13.4.15.

[13] M. Chaus, and R. K. Pandey, "A study on significance of the blue ocean strategy," Mukt Shabd Journal, vol. 9, no. 4, pp. 3684-698, 2020.

[14] D. Rajesh and A. Patel, "A Study on Global Sourcing of Materials with Special Reference to Manufacturing Companies in India," Oct. 2021, doi: https://doi.org/10.25215/9389476763.02.