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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# The Role of Digital Media and Computing in Environment Sustainability Reporting

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**ABSTRACT:** Digital media and computing play an important role in improving environmental sustainability reporting by enhancing data collection, analysis, transparency, and communication. With the help of digital technologies such as cloud computing, big data analytics, and online reporting platforms, organizations can efficiently monitor environmental performance, measure carbon emissions, track resource usage, and assess environmental impact. Digital media also enables companies to share sustainability information with stakeholders through websites, social media, and digital reports, promoting transparency and accountability.

Furthermore, computing tools support real-time data processing and visualization, helping decision-makers implement sustainable practices and policies. Digital platforms encourage public awareness and participation by providing easy access to environmental information. However, challenges such as data security, technological costs, and digital inequality may affect the effectiveness of these systems. Overall, digital media and computing significantly contribute to accurate, efficient, and accessible environmental sustainability reporting, supporting global efforts toward environmental protection and sustainable development.

**KEYWORDS:** Environmental Sustainability, Sustainability Reporting, Digital Media, Computing Technology, Green Technology

## I. INTRODUCTION

Digital media and computing play pivotal roles in advancing environmental sustainability reporting by enabling real-time data dissemination, interactive storytelling, and broader stakeholder engagement. These technologies transform traditional reporting into dynamic, accessible formats that foster public awareness and informed decision-making on ecological challenges.

Digital platforms like social media and interactive websites amplify environmental narratives through multimedia content, such as visualizations and virtual reality experiences. This approach makes complex issues like climate change relatable, driving behavioural shifts and policy advocacy among diverse audiences.

Advanced computing tools, including data analytics and AI, enhance sustainability reporting by processing vast datasets to track emissions, resource use, and progress toward goals. They support precise ESG disclosures, helping firms improve transparency and legitimacy in their environmental claims.



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Figure 1.1



## II. EXPERIMENTAL

### 2.1 Data Collection Experiment

Environmental data (air quality, water quality, carbon emissions) collected using digital sensors and IOT device Real-time monitoring helps measure pollution levels accurately.

**Example:** Smart sensors measuring CO<sub>2</sub> emissions in industries.

### 2.2 Digital Reporting Platform Testing

Organizations test online dashboards and software tools to publish sustainability report helps compare manual reporting vs digital reporting efficiency.

**Example:** Companies using cloud platforms for environmental data storage.

### 2.3 Social Media Impact Analysis

Study how digital media spreads awareness about environmental sustainability measures public engagement, shares, and responses.

**Example:** Awareness campaigns on United Nations environmental programs.

### 2.4 AI and Data Analytics Experiment

Artificial Intelligence models analyse large environmental dataset predict climate change patterns and pollution trends.

**Example:** AI predicting energy consumption and carbon footprint.

### 2.5 Case Study Method

Study companies implementing digital sustainability reporting evaluate transparency, accuracy, and efficiency improvements.

**Example:** Environmental reporting by Microsoft and Google using digital platforms.



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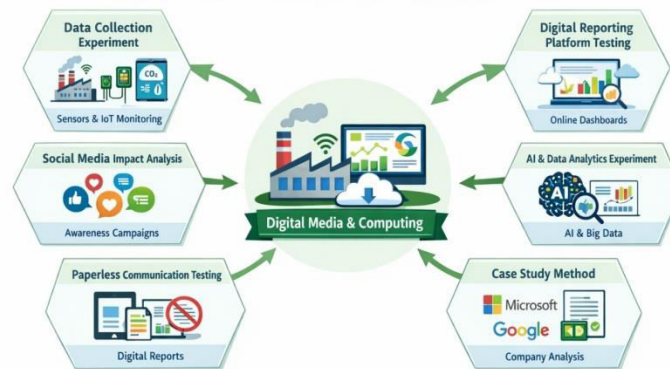


Figure 2.1

### III. RESULTS & DISCUSSION

#### 3.1 Improved Data Collection and Monitoring

Digital tools such as sensors, cloud computing, and data analytics help organizations collect real-time environmental data like carbon emissions, energy consumption, and waste management. This increases accuracy and reduces manual errors.

#### 3.2 Enhanced Transparency and Accountability

Digital platforms allow companies to publish sustainability reports online, making environmental performance accessible to the public, stakeholders, and regulatory authorities. This improves corporate accountability.

#### 3.3 Better Data Analysis and Decision Making

Computing technologies such as artificial intelligence and big data analytics help organizations analyse environmental impacts and make informed decisions for sustainable development.

#### 3.4 Wider Communication and Awareness

Digital media platforms (websites, social media, online reports) help organizations share sustainability initiatives with a global audience, increasing environmental awareness and stakeholder engagement.

#### 3.5 Cost and Time Efficiency

Automated reporting systems reduce paperwork, save time, and lower operational costs compared to traditional reporting methods.

#### 3.6 Support for Sustainable Development Goals

Digital reporting supports global sustainability initiatives promoted by organizations like United Nations by improving environmental data transparency and monitoring progress toward sustainability goals.

#### 3.7 Challenges in Implementation

Despite benefits, organizations face challenges such as high implementation costs, data security concerns, lack of technical expertise, and digital infrastructure limitations.

#### 3.8 Increased Stakeholder Participation

Digital platforms enable stakeholders, including governments, customers, and investors, to actively participate in evaluating environmental performance.



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### 3.9 Future Scope

Emerging technologies such as artificial intelligence, blockchain, and IOT will further improve accuracy, reliability, and trust in sustainability reporting.



Figure 3.1

## IV. CONCLUSION

Digital media and computing play an important role in improving environmental sustainability reporting by making data collection, analysis, and communication more efficient and transparent. Advanced technologies such as data analytics, cloud computing, and digital platforms help organizations monitor environmental performance, reduce resource consumption, and share sustainability information with stakeholders easily.

Digital tools also increase awareness about environmental issues and support informed decision-making for sustainable development. Through real-time reporting and better data accuracy, organizations can follow global sustainability standards promoted by bodies like the United Nations.

Overall, digital media and computing strengthen environmental accountability, enhance transparency, and support long-term environmental protection, making them essential for achieving sustainable development goals and promoting a greener future.

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