

## **Sustainable Business Environment And Artificial Intelligence (AI) : Future And Challenges**

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### **Abstract**

*Interest in artificial intelligence (AI) has grown across several sectors as it relates to sustainable business practices. There is a lack of study, nevertheless, on how to use AI in a sustainable way. To fill this need, the current study examines how AI may help environmentally conscious companies. Fifteen of the biggest Indian companies were examined using qualitative content analysis. Twenty of these businesses used AI between 2017 and 2021, with sixteen of them using it to reap the rewards of sustainable corporate practices. The results suggest that AI is seen in India as a technology that can be used to a wide range of situations. It has also been shown that the strategic importance of AI for businesses is growing. Based on the findings, there were two main goals in deploying AI: 1) optimisation and 2) the quest for advantages in several areas of sustainable business.*

**Keywords** – Artificial Intelligence, Challenges, Opportunities, Business Environment

### **Introduction**

Future possibilities and threats lie at the crossroads of an environmentally responsible corporate climate and artificial intelligence (AI). A summary of the main points is as follows:

#### **Opportunities:**

**Productivity and Efficiency:** Artificial intelligence has the potential to boost productivity by improving operational efficiency, automating mundane jobs, and optimising the use of resources. Artificial intelligence (AI) helps companies innovate by drawing conclusions from data, encouraging the creation of new goods and services, and sometimes even spawning whole new ways of doing business. **Environmental Impact Reduction:** Artificial intelligence (AI) technologies have the potential to enhance sustainability across a range of businesses by optimising energy use, reducing waste, and other related metrics. With the help of AI, supply chain management may be optimised, leading to less waste and more environmentally friendly manufacturing and shipping procedures. Through demand prediction, energy storage management, and resource optimisation, artificial intelligence (AI) may aid in the integration of renewable energy sources. Artificial intelligence (AI) enables data-driven decision-making, which aids firms in making educated decisions that may aid in achieving sustainability objectives.

#### **Challenges:**

Responsible and sustainable AI development requires addressing the ethical problems raised by AI, such as worries about algorithmic bias, data privacy, and the possibility of job loss. Because AI is so dependent on data, protecting the confidentiality, integrity, and availability of this data is of the utmost importance. Breach incidents may damage confidence and lead to major repercussions. **Energy Use:** Artificial intelligence model training and operation may impose a strain on computer resources, which in turn increases

energy consumption. It is critical to develop AI systems that use less energy. The fast development of AI has surpassed the ability of legal frameworks and standardisation initiatives to keep up. Misuse and the impediment to AI's long-term viability might result from a lack of defined standards.

A digital gap exists across different areas and socioeconomic groups due to unequal access to AI technology. If we want AI to contribute to sustainable development, we must ensure that everyone can benefit from it. **Displacement of Workers:** Some sectors are especially worried about the possibility of job losses due to AI's automation capabilities. It is critical to address the societal ramifications and provide assistance for reskilling and upskilling. **Openness and Responsibility:** People may be hesitant to trust AI systems due to their lack of openness. The key to long-term success with AI is ensuring sure everyone involved in making decisions is held to account.

**Possibilities for the Future:**

To guarantee ethical usage, privacy protection, and environmental sustainability, it is necessary to develop strong legal frameworks and international standards for AI. To allay fears of job loss caused by artificial intelligence (AI) by funding initiatives to improve education and train workers for the jobs of the future. To guarantee a balanced and sustainable growth of AI, it is important to promote public-private partnerships among governments, corporations, and civil society in order to tackle the difficulties collaboratively. **AI with a Social effect:** Advocating for AI to have a positive social effect by solving problems like healthcare inequalities, climate change, and others. **Innovation That Never Stops:** Promoting ongoing development of AI systems that prioritise ethical AI practices, energy efficiency, and sustainability.

To establish a long-term business climate in the AI age, it is essential to weigh the advantages of AI against their potential negative effects on society, the environment, and ethics. Responsible AI development and deployment, together with a multi-stakeholder approach, is essential.

### **Literature review**

Lewallen (2021), Mandel (2009), and Taeihagh, Ramesh, and Howlett (2021) all agree that legislators face more uncertainty as a result of emerging technology, which necessitates the partial construction of new supervisory agendas to handle potential short- and long-term concerns. To address the potential dangers of AI, significant legislation is now being drafted. Strong regulations that defend individuals since damage besides maintain their independence while engaging through confident AI systems are part of most comprehensive set of AI regulations to date, which the EU has developed and implemented. One may choose not to have their personal information used in automated decision-making processes according to the EU's General Data Protection Regulation (Art. 22). Also, third-party audits for big platforms and user-facing transparency requirements are part of the EU Data Services Act's effort to make online platform algorithms more transparent (Leistner, 2021). On the other hand, the European Union's AI Act is the policy that addresses AI the most extensively and directly. It is a risk-based legislation that mandates stricter testing and more openness of AI systems.

European Commission 2022 – The strategy outlaws AI schemes with the ability to manipulate people or take advantage of their weaknesses and places strict criteria on risk management and transparency for AI systems that are considered high-risk. Many high-stakes choices involving humans, such those in recruiting or credit default assessments, include these systems because of the substantial danger they represent to people's health, safety, or basic rights. The measures to guarantee openness are vague and open to interpretation even for these high-risk schemes. Lower risk applications ("limited" and "minimal or no risk") are subject to less stringent transparency requirements, if any, all. As

a result, recommender systems and other consumer-facing apps with minimal direct risk are likely to evade stricter transparency regulations.

As a whole, current legislation mostly deals with the more tangible and immediately noticeable consequences, such as erroneous choices (as with autonomous cars) or unjust discrimination, which have been debated in public and have, on occasion, garnered a lot of media attention. However, AI systems may still have dispersed negative impacts on people's autonomy, even with relatively innocuous consumer uses, in addition to the more serious potential downsides of AI. Artificial intelligence systems may progressively induce a soft paternalism by becoming more integrated into people's life and offering convenience via recommendation and decision-making (Laitinen & Sahlgren, 2021). In addition, neither the current nor the proposed regulation of AI addresses the adverse conservational implications of AI submissions, which are alternative unintended and complete possible influence, particularly for applications that are extensively utilised. Importantly, the European Union AI Act envisions voluntary actions and briefly discusses the environmental hazards of AI usage.

Concerning the possible universal and longstanding effects of AI on environmental problems and creeping paternalism, AI requests for mass consumer markets are very pertinent because of how common they are. Existing regulatory initiatives also pay little attention to these applications and implications. Given the current political discussions around AI legislation, their rules are also the most likely to be open to change. Meanwhile public support for legislation may develop a crucial source for political activities and lawmakers, studying citizen perceptions towards AI regulation about long-term systemic repercussions on society is predominantly essential (Dietz et al., 2007: 187). If the public is against a policy tool, lawmakers will be hesitant to use it. Less public support for policies means less people will follow them, which means fewer effective strategies (Tosun et al., 2020: 137). The emphasis on public sentiment towards AI regulation was driven by these factors.

### **Objectives of study**

- To understand the current landscape of AI adoption in businesses and industries with a focus on sustainability practices.
- To evaluate how AI is currently being utilized for sustainable business operations.

### **Hypothesis of the study**

The integration of AI technologies into business operations is positively correlated with improvements in operational efficiency and resource optimization, contributing to a more sustainable business environment.

### **Research Methodology**

Benefits of AI for environmentally responsible Indian companies are the focus of this research. In the spring of 2022, researchers performed exploratory archive research, which is the basis of this article. Without supporting evidence from previous studies, the data sample and methodology were modified to fit the study environment of artificial intelligence and sustainability.

The Fortune 500 list was bought so that the study could be carried out. The listing was released on June 4, 2021, hence the financial metrics (such as investments and sales) shown are from 2020. During the spring of 2022, the study was carried out. The most recent annual reports were released in 2021 in accordance with this. All of the factual data comes from 2017 all the way up to 2021. Using a combination of (a) highest revenues produced and (b) highest gross investments made, the biggest firms were selected from the Fortune 500 list of the biggest Finnish enterprises. Nonetheless, the listing's purpose was to generate a cluster of businesses that were somewhat comparable to one another. Based on the target

enterprise's size, an assumption was established. It was more likely that the necessary data would be accessible if the biggest companies were targeted. Financial statements were deemed adequate, but comprehensive yearly reports were preferred.

### Data analysis

Sr. No.	Industry	Gross Investment (in Mn)	Revenue (in Mn)
1	Energy	4875	51875
2	Oil refining	1274	14257
3	Forestry	1004	9876
4	Technology & services	879	4179
5	Aviation	617	1142
6	Media & Communication	483	22438
7	FMCG	512	11427
8	Real estate	487	469
9	IT and ITES	265	10471

The 15 businesses' representation of a wide range of sectors meant that the governance of fluctuation was far from optimal. When it came to categorising investments, the biggest gross investment was most likely to show spending on technology (i.e., AI technologies). In addition, differences in the represented sectors provided an opportunity to provide a more complete picture of the AI systems used.

The study's primary goal was to examine the utilisation and purposes of various AI technologies; it did not seek to assess the efficacy of AI experiments or their execution. Full numerical data sets from all businesses that might tell us how their AI technology affected their most important metrics were not accessible, which was a major letdown.

In order to provide a more comprehensive picture of the phenomena of AI technology adoption over the long term, research data was collected over a longer duration. It was reasonable to extend the time frame as artificial intelligence technologies that were implemented in a given year would not have seen sustained usage in the subsequent year. Then there's the chance that people would mistakenly assume that AI adoption has already taken place just because they saw a piloting of an AI system.

### Hypothesis testing

An exploratory qualitative archival research methodology was applied in this study. The exploratory character of the study meant that, first, the methodology was unclear. Numbers (in the form of quantitative financial tables) and words (in the form of written language, including tales of managing and expanding the firm) made up the empirical data seen in annual and financial reports. The impossibility of drawing conclusions about investments in R&D and the desired information regarding investments in AI from numerical data was one of the first red flags, so this study relied on written empirical data influenced by theoretical information gleaned from a preliminary literature review. We used abductive reasoning to analyse the empirical data. Put simply, the reasoning was somewhat informed by theory, but the major emphasis was on inductive content analysis based on evidence.

### PARAMETERS OF SUSTAINABLE AI ADOPTION

Sr. No.	Industry	Social	Ecological	Societal
1	Energy	X	X	X
2	Oil refining		X	X
3	Forestry	X	X	
4	Technology & services	X		X
5	Aviation	X		
6	Media & Communication			X

7	FMCG	X		
8	Real estate	X		X
9	IT and ITES		X	

In all, three data collecting cycles were carried out. The complete 2021 annual reports and financial statements were not yet available when this study was started, which is why this was the case. All the data was collected and analysed after it was released. Shortly after the initial search cycle, the analysis was begun. According to the results, twenty different businesses have shown signs of AI adoption. Thirteen of the businesses said they used AI to improve sustainability in some way. While all of these factors were important, social and ecological sustainability took precedence over societal sustainability.

### Conclusion

The findings back up the growing trend of using AI for sustainable development initiatives. Among the 25 businesses surveyed, 68% reported employing AI between 2017 and 2020. Twenty of the thirty-five businesses surveyed have used AI in some capacity, according to the results of the data analysis that used empirical data spanning the whole time period of 2017–2021. This resulted in a 12% rise in AI usage by the end of 2021. At least among the biggest Indian companies, there seems to be an upward trend in the use of artificial intelligence (AI), even if the percentages do not reflect hard data (i.e., the organisations did not necessarily record the adoption or piloting of AI).

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