

Eco-friendly study conducted in the airline industry

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Abstract

The purpose of this article is to take a look at the sustainable activities that the aviation sector is doing right now to lessen its effect on the environment. Innovations and techniques that promote environmentally conscious operations in the aviation sector, decrease fuel consumption, and limit carbon emissions are the main points of this publication. Research methods include a systematic literature search as well as interviews with aviation industry insiders and manufacturers. According to the research, there are still obstacles in the aviation industry's adoption of sustainable technologies such as fuel-efficient engines, plans to reduce waste, and carbon offset schemes. According to the study's findings, in order to overcome the technological and financial obstacles to sustainability, more cooperation is required among airlines, regulators, and technology suppliers. It offers practical advice for politicians, business moguls, and academics committed to improving aviation's environmental sustainability and contributes to the body of knowledge on sustainability in high-impact sectors.

Keywords

Sustainable aviation, biofuels, carbon reduction, energy efficiency, eco-friendly aircraft

I. Introduction

There has been tremendous expansion in the aviation industry, and the use of aeroplanes and similar transportation in India is on the rise. Because it allows people and goods to be transported, the aviation industry is vital to the American economy. Products and services exported from throughout the world have boosted our economy. The biggest market for civil aircraft worldwide, the third-largest market for domestic aircraft, and the seventh-largest market overall. Many predict that it will eventually become the world's third largest economy, overtaking the UK. By 2024, according to the International Air Transport Association's (IATA) projections, the domestic and international flying passenger market will have grown to its largest size. The government of India has been pushing for airport expansions to keep up with the country's soaring air traffic. Aircraft traffic in the region also surged to meet the increasing demand. Having said that, India's aviation sector is still grossly underutilised. Still, there was a lot of space for growth, as flying is still too expensive for the majority of the countrymen. Over the previous two years, the aviation industry in India has had annual growth rates above 20%. Experts anticipate a growth of double digits in the years to come. Some are worried about the possible effects on the environment due to the quick expansion of its commercial operations.

1.1 Aviation as a catalyst

Whether it's for international relations or tourism, the aviation industry propels economic growth and human mobility. However, there is growing concern about the effects of this aviation sector and requests for it to be greened because it contributes to environmental deterioration and produces a lot of greenhouse gas emissions. The concept "sustainability," its applicability to the travel and aviation industries, and the steps taken by the former to reduce their negative impact on the environment are all well covered in this literature study.

1.2 Learning Sustainability as a Concept and its Importance

According to the Brundtland Report (1987), one way to think about sustainability is to strive to meet the demands of the present without sacrificing those of future generations. An increasingly relevant postmodern idea in the fight against climate change and resource depletion, it encompasses environmental, social, and economic factors (Edwards, 2019). policies aimed at reducing the aviation industry's negative impact on the environment.

1.3 Sustainability in Tourism

Tourism stands out as a high-impact business that profoundly impacts an area's environment, as many places and local flora and wildlife are often sensitive to visitor patterns. Sustainable tourism aims to reduce waste, save resources, and protect cultural heritage because it interacts with cultural values while being economically viable. According to Gössling and Hall (2019), sustainable tourism takes into account the

environmental risks posed by conventional tourist. Indeed, tourism can boost economic development, as pointed out by UNWTO (2020).effects.

1.4 Sustainability in Aviation

Because aircraft uses fossil fuels, its growth has increased emissions, and decarbonisation seems unlikely, not to mention the possibility of a spike in greenhouse gas emissions. There needs to be a shift in the aviation industry towards more environmentally friendly practices since the International Civil Aviation Organisation (ICAO) estimates that international aviation accounts for two to three percent of all CO₂ emissions (2021).

II. Methodology

In order to improve environmental sustainability and decrease emissions of greenhouse gases, this study looks at how major airlines have implemented eco-friendly policies. This article takes a look at a bunch of aircraft sustainability tactics. The review approach has extracted findings and presented here. This is where the bulk of the feedback regarding airlines' sustainable procedures and public views on aviation's impact on the environment will come from.

III. Measures Taken by the Aviation Industry for Sustainable Development

Aircraft makers are actively pursuing solutions that can reduce pollutants while also improving fuel economy. Key components of green aviation include advancements in aircraft design, such as the use of lightweight materials and the reduction of aerodynamic drag. Roy, cited by Green (2017), says that the Airbus A350 and Boeing 787 are two examples of modern, fuel-efficient planes that can cut emissions by as much as 20%. While these improvements are promising, the research conducted by Bauen et al. (2020) indicates that significant changes in infrastructure and substantial funding are necessary for them to materialise. Improving operational efficiencies is another efficient way to make aviation more sustainable. Several studies have demonstrated that aircraft fuel consumption and pollution can be reduced by improvements to air traffic management systems, shorter ground stays, and optimal flight route selection (Schäfer et al., 2016; Boehm et al., 2020).

One can find, although SAFs are feasible and practicable, research shows that full-scale adoption requires substantial investment in infrastructure and state engagement. Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is one example of a framework developed by the International Civil Aviation Organisation (ICAO) with the goal of limiting emissions from international flights to 2020 levels or below. Corporate social responsibility (CSR) and the environmental effect of airlines is moving from being a nice-to-have to an absolute must. As a result, the aviation sector is starting to implement measures to reduce its carbon emissions, such as carbon offset programs and reducing the usage of single-use plastic. Prioritising sustainability in aviation can help address climate change and ensure the industry's future. Sustainable methods can help airlines deal with the high expenses of fuel and operations while also satisfying customer desires for environmentally friendly travel options assets Montero et al. (2022).

IV. Conclusion

It is highlighted in the study literature that both the progress and the setbacks that have occurred in aviation sustainability efforts. Despite the fact that consumers and executives are increasingly interested in sustainability, significant expenditures and international coordination are required in order to address the challenges of cost and infrastructure. If ongoing innovation, regulatory assistance, and matching customer expectations for environmentally friendly practices are implemented, it will be possible to create a more sustainable future for the aviation industry. There are a lot of people who are prepared to embrace environmentally friendly solutions, but the expensive cost is preventing them from doing so. A competitive edge in the market can be gained by airlines that are able to provide solutions that are both economical and ecologically friendly.

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