Project #001
What are the crucial features of SATF considered by the U.S. households?
A best-worst scaling approach

Motivation and Objectives

Synthetic aviation turbine fuel (SATF) or sustainable aviation fuel (SAF) is a renewable, drop-in fuel that can be mixed up to 50% with conventional jet fuel without modifying aircraft. The aviation industry has advocated for the adoption of SATF/SAF given its various features. Several airlines have presented information about SATF/SAF on their websites to help consumers and society understand its multiple benefits.

The objective of this study is to determine the features of SATF/SAF that US households with recent air travel experience consider most important. The information can help the airline industry determine marketing strategies targeting air travelers interested in SATF/SAF.

Methods and Materials

1. Conducted a national online survey in 02/2025 via Qualtrics on air travelers who were at least 18 years old and had flown at least once in the past year; received 1,504 valid responses.
2. Used two airlines' SATF/SAF campaign videos (Delta Air Lines and United Airlines) as treatment.
3. Applied a best-worst scaling (BWS) approach to determine the most important features of SATF/SAF identified by the US households by experiment and control groups, as well as different demographical groups.
4. Considered six SATF/SAF features, including: carbon emission reduction, improving local air quality, job creation, compatibility with current aircraft, feedstock sustainability, and supporting rural communities.

Summary

The University of Tennessee team has been focusing on developing the SATF/SAF supply chain in Project 001, which includes assessing feedstock availability and conducting market analysis. A recent nationwide online survey of U.S. households provides airlines with insights into travelers' perceptions of SATF/SAF and potential directions for their marketing strategies. Findings indicate that consumers prioritize the environmental benefits of SATF/SAF over other features. This perspective remains largely consistent across various demographics, including both those who watched and did not watch the SATF/SAF videos, as well as across genders and age groups.

Results suggest that airlines may earn the public's support for SATF/SAF usage by focusing on its environmental benefits, followed by economic-related features, e.g., job creation.

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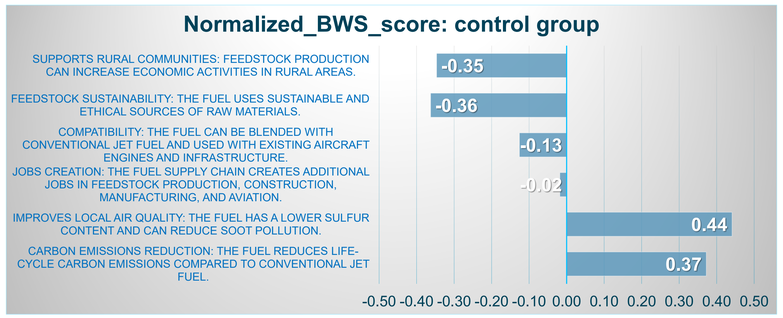
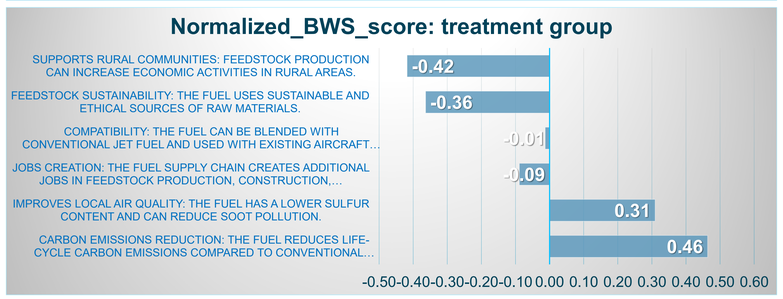
Results and Discussion

- Carbon emission reduction and local air quality improvement are the top two features of SATF/SAF considered by US households.
- The view is generally consistent between the control (did not watch airline videos) group and the treatment group (watched the videos), as well as across genders and age groups.





Conclusions and Next Steps

Recognizing the opportunities and challenges of SATF development is essential. With increasing environmental concerns, US air travelers are placing greater emphasis on the environmental advantages of SATF. We remain committed to advancing our research on the SATF supply chain and market dynamics.

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