Study analyzes strategies for airlines to boost on-time performance

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Airlines have long competed to enhance their on-time performance, and new research from the University at Buffalo School of Management reveals the most effective strategies for improving rankings in this key

indicator of punctuality and service reliability.

Available online ahead of publication in the *Production and Operations Management* journal, the study found that operational changes—such as efforts to reduce travel time, increase boarding efficiency and minimize gate-related delays—are the best way to improve on-time performance, followed by schedule padding (where airlines allow themselves extra time to prevent official delays). Changes in network structure such as flight routes and schedules had the lowest impact.

"The airlines that take action to change their operations will see the biggest improvement in on-time performance and rankings," says study co-author Milind Sohoni, Ph.D., professor of operations management and strategy in the UB School of Management. "Understanding the relative impact of active and passive strategies is crucial for airlines aiming to stay competitive in a dynamic industry."

The study analyzed 11 years of data from flights operated by U.S. carriers to measure on-time performance changes, schedule padding and operational changes. They found that the effectiveness of these strategies varies depending on airline types, such as full-service, commuter, low-cost and leisure airlines. Full-service carriers, in particular, benefit most from operational improvements.

The researchers say airline managers should take a data-driven approach to setting performance improvement targets, taking into account factors like route variability and competition—and even consider using the much-maligned technique of schedule padding.

"The media criticize schedule padding because they feel the airlines are gaming the system to fool travelers, but our findings show it may be a necessary evil to maintain their on-time performance," says Sohoni. "By focusing on the right strategies, airlines can provide a more reliable

travel experience for passengers."

They also say managers should be mindful of the competition because their research found that actions competitors take can negatively affect an airline's OTP ranking.

More information: Chandrasekhar Manchiraju et al, It's not simply luck: The impact of network strategy, schedule padding, and operational improvements on domestic on-time performance in the US airline industry, *Production and Operations Management* (2023). [DOI: 10.1111/poms.14050](#)

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