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Aviation Safety, Quality, and Economic Impact: A Policy Research System

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### Abstract

The United States airline industry is experiencing an underlying mix of challenges in areas of Quality, Safety, and Economics. A collaborative research team has examined and generated data that lays a foundation to provide stakeholders valuable decision-making information. The components of this study include quality and safety analysis on airline performance, aviation maintenance exploration with safety management systems and economic implications. A policy research construct is applied to result in a mechanism that purports necessary industry and government action.

### Airline Quality Rating (AQR)

The AQR was developed in 1991 as an objective method for assessing airline quality. The present study attempts to identify attitudinal patterns and relationships in the way consumers view the commercial air industry. AQR scores are produced by utilizing DOT data from four categories that consumers deemed important and a custom formulated equation. This research utilizes comparative trend analysis to track airlines in operational performance and allows for the development of theories in data shifts and trends.

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AQR = \frac{(-8.63 \times OT) + (-8.03 \times DB) + (-7.92 \times MB) + (-7.17 \times CC)}{(8.63 + 8.03 + 7.92 + 7.17)}
\]

The Airline Quality Rating (AQR) is the premier statistical study of major airline performance in the United States, objectively comparing airline quality.

### Safety Management Systems

SMS are a standardized approach for organizations to oversee the safety program utilized by an operation.

- **Safety Policy:** Senior management institutes commitment to safety and goals are outlined.
- **Risk Management:** Hazards are identified and controls are designed.
- **Safety Assurance:** Risk controls are evaluated and adjusted if needed.
- **Safety Promotion:** Safety culture is strongly encouraged using training and communication practices.

Cutting costs produced by a safety program can lead to greater financial strain in insurance and lawsuits in the event of an accident. Conversely, aviation organizations can see a return on their investment in safety programs when injury and material losses are reduced.

### Policy Research Construct

The Policy Research Construct (PRC) is implemented by conducting research and analysis on an existing social problem, in order to provide policymakers with action-oriented recommendations for fixing the problem.

### Economic and Policy Outcomes

Within the focus areas of airline quality and safety management, the policy and economic considerations enter at the strategic decision-making phase. Where quality factors will impact the various elements of operations and safety management to impact the bottom line. This case example is an active and on-going nationally visible issue with the case of Southwest Airlines. Due to safety and maintenance delays, Southwest is reported to be losing millions of dollars due to the inability to operate efficiently and productively.

“The Southwest CEO: Maintenance cancellations, delays costing ‘millions of dollars weekly’”

- *USA TODAY*

The result of applications of the PRC is to provision a guided analysis of key aviation policy actions. The action is intended to result in strategic decision-making for policy change at any organizational level.

### References


