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# **EXPLORING THE INFLUENCE OF TIME PRESSURE ON DECISION-MAKING BY AIRLINE PILOTS**

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## **ABSTRACT**

Decision-making errors have figured predominantly in many aviation accidents; often these have been due to stress and time pressure in solving a problem. The purpose of this study was to investigate the perceived effect of time pressure on airline pilots in decision-making. Specifically, the aim of the study was to improve the understanding of the influence of experience, crew position, confidence, perception of safety, stress, and training on decision-making by airline pilots. The study utilized an experimental design and survey methodology among a purposive sample of airline pilots. Evidence was found in the study to suggest that time pressure influences decision-making. Additionally, there was a significant lowering of decision-making ability in co-pilots with low experience when subjected to time pressure. An unexpected finding was the airline crew utilizing a decision-making model appeared to have no advantage over those who did not utilize decision-making model. Time pressure did not appear to influence post-decisional confidence in decision quality. Use of decision-making models did not have any positive impact on decision outcome. This finding may be due to the survey design in presenting sufficient diagnostic cues to participating pilots to draw on their experience and make better decisions. However, post-decisional safety perception was significantly affected by time pressure. Lastly, the findings from the present study suggested that the pilots with low experience seemed to suffer significantly on decision-making ability when under time pressure. The implications of these findings are discussed further.

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## ABBREVIATIONS

AAIB	Air Accidents Investigation Board
ADM	Aeronautical Decision-Making
ANOVA	Analysis of Variance
ASN	Aviation Safety Network
ASRS	Aviation Safety Reporting System
ATSB	Australian Transportation Safety Bureau
CAA	Civil Aviation Authority
CAE	Canadian Aviation Electronics Limited
CAP	Civil Aviation Procedures
CRM	Crew Resource Management
DAAIB	Dutch Aviation Accident Inquiry Board
FAA	Federal Aviation Administration
FAA AC	Federal Aviation Administration Advisory Circular
FORDEC	Facts, Options, Risks, Decide, Execute, Check
ICAO	International Civil Aviation Organization
MUHEC	Massey University Human Ethics Committees
NDM	Naturalistic Decision-Making
NTSB	National Transportation Safety Bureau
RPD	Recognition Primed Decision-Making
SPSS	IBM Statistical Software Package