Half-century research developments in maritime accidents: Future directions

Abstract

Over the past 50 years, research in maritime accidents has undergone a series of fundamental changes. Understanding the evolution of these changes can help maritime communities to know what has been done in the past, how maritime safety can be improved in the future, and how to reduce or eliminate the risks to ships, the lives aboard them, the cargo they carry, and the marine environment.

This study conducts a comprehensive literature review on research in maritime accidents, comprising 572 papers published in 125 journals over the 50 years from 1965 to 2014. The patterns of evolution of the researchers, the journals, the disciplines involved, the research methods, the major issues and causes, and the data sources are identified, and the changes explained. We find that the main focus of research in maritime accidents has shifted over the past 50 years from naval architecture to human error, and may continue to expand into socio-economic factors. In addition, future research in maritime accidents will be multi-disciplinary, use multiple data sources, and adopt advanced research methods, to account for complex interactions between the natural environment, the development of naval technology, human behavior, and shipping market conditions.