

# **A modified exponential score function for troubleshooting an improved locally made Offshore Patrol Boat engine**

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## **ABSTRACT**

In this paper, we present an Intuitionistic Fuzzy Technique for Order Preference by Similarity to the Ideal Solution model which is based on a modified exponential score function for detecting early failure in a locally made Offshore Patrol Boat engine, with special regard to component interaction failure, using groups of experts' opinions to detect the root cause and the engine systems most affected by the failures in the Boat engine. The study is aimed at providing an alternative method for the traditional product development failure mode identification and analysis methods which hitherto are limited when it comes to component interaction accidents and failure analysis in the machine system. The results from the study show that although early detection of failures in engines is quite difficult due to the dependency of machine systems and components on each other, using an intuitionistic fuzzy multi-criteria decision-making method which is based on experts' opinions these faults/failure can easily be diagnosed and detected..

## **KEYWORDS**

Offshore Patrol Boat engine; Intuitionistic Fuzzy Technique; troubleshooting