

REVIEWER'S REPORT

Manuscript No.: JNCS -087

Title: EXPLAINABLE ARTIFICIAL INTELLIGENCE FOR RELIABLE DECISION SUPPORT: TECHNIQUES, APPLICATIONS, AND FUTURE RESEARCH CHALLENGES.

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality	☐			
Techn. Quality		☐		
Clarity	☐			
Significance		☐		

Reviewer Id: JPR-210

Reviewer's Comment for Publication.

The manuscript provides a comprehensive and well-structured conceptual review of Explainable Artificial Intelligence for reliable decision support, covering intrinsically interpretable models, local explanation methods, feature attribution and SHAP, counterfactual explanations, and global interpretation techniques. The discussion effectively connects these approaches with applications in healthcare, financial services, cybersecurity, education, and industrial quality control, while appropriately emphasizing that explainability alone does not guarantee model accuracy, fairness, or trustworthiness. The treatment of explanation faithfulness, stability, computational cost, human understanding, privacy, security, and fairness provides useful insight into the major limitations of current XAI approaches, and the proposed future directions concerning standardized evaluation, user-centred explanations, large AI models, adversarial robustness, and integration throughout the machine-learning lifecycle strengthen the relevance of the review. However, the methodology should be improved by documenting the literature search and study-selection process more clearly, and a comparative table evaluating major XAI techniques according to faithfulness, stability, computational requirements, applicability, and limitations would enhance the technical depth of the manuscript. Overall, the paper addresses an important research area and is suitable for publication after minor revision.