# Decision Support: How Explainable A.I. can Improve Transparency & Trust with Human Users

**Authors :** Devon Brown, Liu Chunmei

**Abstract :** This paper will present an analysis as part of the researchers dissertation topic focusing on the intersection of affective and analytical directed acyclic graphs (DAGs) in the context of Decision Support Systems (DSS). The researcher's work involves analyzing decision theory models like Affective and Bayesian Decision theory models and how they could be implemented under an Affective Computing Framework using Information Fusion and Human-Centered Design. Additionally, the researcher is beginning research on an Affective-Analytic Decision Framework (AADF) model for their dissertation research and are looking to merge logic and analytic models with empathetic insights into affective DAGs. Data-collection efforts begin Fall 2024 and in preparation for the efforts this paper looks to analyze previous research in this area and introduce the AADF framework and propose conceptual models for consideration. For this paper, the research emphasis is placed on analyzing Bayesian networks and Markov models which offer probabilistic techniques during uncertainty in decision-making. Ideally, including affect into analytic models will ensure algorithms can increase user trust with algorithms by including emotional states and the user's experience with the goal of developing emotionally intelligent A.I. systems that can start to navigate the complex fabric of human emotion during decision-making.

**Keywords :** decision support systems, explainable AI, HCAI techniques, affective-analytical decision framework

**Conference Title :** ICCIS 2024 : International Conference on Computer and Information Sciences

**Conference Location :** New York, United States

**Conference Dates :** December 09-10, 2024