

Decision Analysis Methods for Selecting Consumer Services with Attribute Value Uncertainty

Dennis Leber^{*}, National Institute of Standards and Technology
Jeffrey Herrmann, University of Maryland

Abstract

The basic risky decision is defined as a decision for which an uncertain event, in addition to the alternative selected, defines the outcome. Beyond the uncertain event, additional uncertainties can enter a decision including the uncertainty in the attribute values used to assess the decision outcomes. When considering the selection of consumer products and services, formal and informal reviews of products and services are often used by consumers to estimate the level of satisfaction that will be received. When developing a decision model based on these data, attribute value uncertainty is often present and should be incorporated. This study considers the uncertainty in the attribute values used to describe the possible outcomes because no techniques have been established for representing this uncertainty or propagating it during decision analysis. This talk will present and assess several approaches to incorporate attribute value uncertainty into the decision analysis for choosing a roofer based on customer review data.

Keywords: Decision analysis; Risky decision; Uncertainty.

^{*} Presenting author