Cognitive Characteristics of Industrial Workers in Fuzzy Risk Assessment

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Abstract : Risk assessment is carried out in most industrial plants for accident prevention, but there exists insufficient data for statistical decision making. It is commonly said that risk can be expressed as a product of consequence and likelihood of a corresponding hazard factor. Eventually, therefore, risk assessment involves human decision making which cannot be objective per se. This study was carried out to comprehend perceptive characteristics of human beings in industrial plants. Subjects were shown a set of illustrations describing scenes of industrial plants, and were asked to assess the risk of each scene with not only linguistic variables but also numeric scores in the aspect of consequence and likelihood. After that, their responses were formulated as fuzzy membership functions, and compared with those of university students who had no experience of industrial works. The results showed that risk level of industrial workers were lower than those of any other groups, which implied that the workers might generally have a tendency to neglect more hazard factors in their work fields.