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PRESENTING AN EXPERT SYSTEM FOR EVALUATION OF LOAN DECISIONS RISK, BASED ON AXIOMATIC DESIGN

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ABSTRACT

Resources of financial institutes such as banks are rare; therefore the risk of return must be minimized while they are making decision regarding acceptance of a loan request. Expert systems can provide financial institutes with appropriate decision, enabling them to reduce risk of their investments. In this paper, we present an expert decision support system which evaluates risk of investment. This model is developed based on Axiomatic approach to design. In the presented model, risk of bank in investment is decomposed in a hierarchical structure into FRs, DPs and PVs. FRs are goals of risk evaluation. DPs are risk criteria with which investment is evaluated and PVs are documents used for quantifying risk criteria (DPs). The designed hierarchy leads us to an evaluation approach which is easy to handle. To make final decisions about each loan request, the request must be scored. Scoring should consider the probability of failure in each evaluated project. Scoring is formulated based on axiom two: the more the probability of project success is the higher score it gets. If the information content of a project is low (more opportunity to finish successfully), it gets higher score. In the presented model, the whole information content of evaluated project is the combination of information content of each risk evaluation criteria (DPs). This model is designed for a specialized development bank in the field of Industry and mine.

Keywords: Axiomatic Design, Expert Decision Support System, Loan evaluation, Risk