

Validating the usability attributes of AHP-software risk prioritization model using partial least square-structural equation modeling

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ABSTRACT

Purpose : This study aims to develop a software risk prioritization model using analytic hierarchy process (AHP) and further validate the usability attributes of the model in prioritizing operational, technical, technological, strategic and environmental software risks. **Design/methodology/approach :** Questionnaire was used to collect data from software practitioners to evaluate the usability attributes of the AHP-software risk prioritization model. Accordingly, partial least square-structural equation modeling was used to analyze the collected data. **Findings :** Results reveal that the developed AHP-software risk prioritization model is efficient and effective in facilitating software risk factor prioritization. In addition, results suggest that the experts are satisfied with the learnability, accessibility and navigation capability of the model. Besides, results indicate that the model provides a useable interface and system design for content availability of information needed by software practitioners in evaluating and prioritizing operational, technical, technological, strategic and environmental risk. Furthermore, results show that the experts intend to adopt the model to prioritize identified software risk in their firm. **Research limitations/implications :** Methodologically, the developed AHP-software risk prioritization model is faced with issues such as inconsistency in judgments, weakness of confronting ambiguities and uncertainties of high complexity. Empirically, data were collected from software practitioners in Malaysia to validate the AHP-software risk prioritization model. Hence, results from this study cannot be generalized to other software practitioners in different countries. **Practical implications :** This study developed a software risk prioritization model to evaluate and prioritize software risks that occur in software organizations by deploying AHP to carryout risk factor priority selection. Moreover, the model provides risk knowledge as guidelines for evaluating software risks in software organizations. **Social implications :** The developed AHP-software risk prioritization model computes risk prioritization factor priority selection and further supports software practitioners and evaluates risks and associated risk factors. Besides, this study develops an instrument that can be used in project risk management to validate the usability attributes of software risk approaches. **Originality/value :** This research designs use case and class diagram to show how the AHP-software risk prioritization model evaluates and prioritizes software risks factors by using risk evaluation questions. Additionally, the AHP-software risk prioritization model computes, evaluates and prioritizes software risk factors using risk factor priority selection for software project management.

KEYWORDS

Analytic hierarchy process; Risk management policy; Software organizations; Software project management; Software risk evaluation; Software risk prioritization

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