

Competencies of requirement engineers to identify situational factors in Global Software Development (GSD) indicate their ability for accurate and adequate identification of situational factors. Currently requirement engineers face competency related challenges to identify accurate and adequate situational factors. Although existing studies focused on situational factors identification, none of them targets requirement engineering (RE), resulting in lack of any situational RE guidelines that restrain the requirement engineer's competence for accurate and adequate situational factors identification. This study aims to identify the situational factors affecting RE in GSD and to identify the most influential situational factors for RE activities (elicitation, analysis, specification, validation, and management). Besides, it also aims to formulate a situational RE model for GSD and to develop web-based tool of situational RE in GSD. To identify the situational factors, a qualitative technique of systematic literature review was performed that resulted in 22 situational factors, 112 sub-factors categorized in 5 categories. To identify the most influential situational factors for each RE activity a quantitative technique of survey was performed with 14 globally distributed software houses of Malaysia, where 83 respondent's responses were included in data analysis. Situational factors whose composite mean values were found above 4.00 were considered as most influential situational factors for particular RE activity. For each RE activity out of 22 situational factors, 7 situational factors for requirement elicitation, 8 situational factors for requirement analysis, 6 situational factors for requirement specification, 8 situational factors for requirement validation, and 7 situational factors for requirement management were found most influential. Furthermore, a situational RE model was formulated based on the literature and industry responses. The model was further transformed into a web-based situational RE tool by using ASP.Net. This web-based situational RE tool was evaluated by conducting an experiment to assess participant's competence for accurate and adequate situational factors identification, where participants identified the situational factors with and without using the web-based situational RE tool. Paired sample t-test was performed on total of 21 participant's responses. The mean values of accurate situational factors identification with and without using web-based situational RE tool were found 6.76 and 3.19, whereas the mean values of adequate situational factors identification with and without using web-based situational RE tool were found 6.80 and 5.04 respectively. The results showed that the participant's competency was enhanced by identifying the more accurate and adequate situational factors by using web-based situational RE tool. The participants were also provided with post experiment questionnaire to evaluate web-based situational RE tool's usability which was found usable. This research has following contributions: an evaluated list of situational factors, most influential situational factors for each RE activity, a situational RE model, and an empirically evaluated web-based situational RE tool for GSD.