

## Identifying and Ranking Environmental Risks of Oil and Gas Projects Using the VIKOR Method for Multi-Criteria Decision Making

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**Abstract :** Naturally, any activity is associated with risk, and humans have understood this concept from very long times ago and seek to identify its factors and sources. On the one hand, proper risk management can cause problems such as delays and unforeseen costs in the development projects, temporary or permanent loss of services, getting lost or information theft, complexity and limitations in processes, unreliable information caused by rework, holes in the systems and many such problems. In the present study, a model has been presented to rank the environmental risks of oil and gas projects. The statistical population of the study consists of all executives active in the oil and gas fields, that the statistical sample is selected randomly. In the framework of the proposed method, environmental risks of oil and gas projects were first extracted, then a questionnaire based on these indicators was designed based on Likert scale and distributed among the statistical sample. After assessing the validity and reliability of the questionnaire, environmental risks of oil and gas projects were ranked using the VIKOR method of multiple-criteria decision-making. The results showed that the best options for HSE planning of oil and gas projects that caused the reduction of risks and personal injury and casualties and less than other options is costly for the project and it will add less time to the duration of implementing the project is the entering of dye to the environment when painting the generator pond and the presence of the rigger near the crane.

**Keywords :** ranking, multi-criteria decision making, oil and gas projects, HSEmanagement, environmental risks

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