

# Developing and Presenting a Shadow Leadership Model in the Ministry of Water Resources of Iraq

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## 1. Round 1

### 1.1. Reviewer 1

Reviewer:

The introduction provides a conceptual overview of shadow leadership but does not clearly define it in the context of the study. Consider adding a precise definition to differentiate it from other forms of leadership (e.g., informal leadership, covert leadership).

The study surveys 384 employees, but the sample size justification is missing. Explaining how this number was determined (e.g., power analysis, response rate considerations) would improve methodological clarity.

The model fit indices indicate a well-fitting model, but the study does not provide a justification for the cutoff values used (e.g., RMSEA < 0.08, CFI > 0.90). Including citations for these thresholds would improve the credibility of the SEM results.

The study does not mention whether measurement invariance was tested between different respondent groups (e.g., managerial vs. non-managerial employees). Addressing this would help confirm whether the model applies uniformly across the sample.

While the factor loadings are reported, the study does not discuss whether any items were removed due to low loadings. Including this information would clarify the robustness of the measurement model.

Authors revised the manuscript and uploaded the new document.

## 1.2. Reviewer 2

Reviewer:

The study mentions Jungian psychology and organizational theories but lacks a coherent theoretical framework tying them together. Strengthening the theoretical foundation with a discussion of how these theories interrelate would improve conceptual clarity.

The introduction states that shadow leadership is "less-explored" but does not specify what previous studies have overlooked. Explicitly identifying the research gap with references to existing literature would enhance the study's originality.

The choice of mixed-methods research is appropriate, but the justification for integrating qualitative and quantitative phases is weak. Clarifying why both approaches were necessary to develop the model would strengthen methodological rigor.

The study states that 18 experts were selected via purposive sampling. However, there is no discussion of whether saturation was reached. Providing details on how theoretical saturation was determined would improve transparency.

The study assesses questionnaire validity using the Content Validity Ratio (CVR), but no details are provided on the exact threshold values used or the process of expert validation. Including this information would enhance the methodological robustness.

The qualitative findings are presented in an axial coding framework, but the rationale for categorizing specific elements under certain axial themes is unclear. Providing a brief explanation of why particular factors were grouped together would aid interpretation.

Given the complexity of the model, it would be useful to explore whether intervening variables mediate or moderate the relationship between shadow leadership and its consequences. If this analysis was conducted, it should be explicitly stated.

The discussion mentions that shadow leadership is "not inherently unethical" but does not explore potential ethical dilemmas. Expanding on ethical concerns (e.g., manipulation, lack of transparency) would provide a more balanced discussion.

While the study discusses governance reforms, it does not offer specific policy recommendations. Providing concrete suggestions for how the Iraqi government could mitigate the negative effects of shadow leadership would enhance practical relevance.

Authors revised the manuscript and uploaded the new document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.