

Peer Review

Review of: "Data-Driven Innovation in Workforce Selection: A Clustering-Based Workflow for Technology Adoption in Indonesian Construction SMEs"

Parisa Omidmand¹

1. Department of Economics, Texas Tech University, United States

The manuscript is generally clear and practical, and the emphasis on a lightweight, reproducible analytics workflow is a useful contribution for SMEs with limited resources. The clustering approach is easy to follow, and the idea of using data-driven tools to support recruitment decisions is timely for the construction context.

However, I have three concerns that should be addressed before the paper is ready. First, the framing does not fully match the demonstrated contribution. The title highlights “technology adoption,” but the manuscript mainly presents a K-means workflow for grouping applicants in recruitment. At present, the technology-adoption argument is largely conceptual. The authors should either revise the title and aims to reflect the recruitment decision-support contribution or strengthen the adoption component by providing a clearer adoption framework or practical evidence of implementation and use in the SME setting.

Second, the conclusions should be calibrated to the scope of the data. With only 30 shortlisted applicants from a single firm, the study is appropriate as a proof of concept but cannot support broad claims about improved fairness, bias reduction, or general recruitment effectiveness. Clustering may improve transparency and consistency, but it does not inherently reduce bias if the underlying competency scores are biased. I recommend positioning the work explicitly as a pilot demonstration and using more conditional language around fairness-related claims.

Third, the manuscript needs a more detailed description of how the competency scores were generated, since the clustering results depend entirely on the quality of these inputs. Please clarify who assessed

candidates, what rubrics or tasks were used, how scoring was standardized, and whether any reliability or consistency checks were performed. If such checks are not feasible, this should be acknowledged as a key limitation and reflected in the interpretation.

As constructive suggestions, I recommend reporting at least one additional cluster validity or stability indicator alongside DBI and demonstrating robustness across multiple random starts.

Declarations

Potential competing interests: No potential competing interests to declare.