IKMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 09 November 2025
Revised 16 February 2026
Accepted 25 February 2026
Initial Published 14 April 2026
Final Publication 01May 2026

International Journal of Innovation Management and Organizational Behavior

Open Peer-Review Report

E-ISSN: 3041-8992

# Modeling Innovation Adoption through Reinforcement Learning: The Influence of Risk Perception and Change Readiness

Henrik. Solberg[1], Lerato. Nkosi[2*], Laura. Sánchez Romero[3]

[1] Department of Strategy and Management, Norwegian School of Economics, Bergen, Norway
[2] Department of Business Management, University of Pretoria, Pretoria, South Africa
[3] Department of Innovation and Entrepreneurship, Autonomous University of Madrid, Madrid, Spain

*** Corresponding author email address**: lerato.nkosi@up.ac.za



## 1. Round 1

### *1.1. Reviewer 1*

Reviewer:

State/action space specification needs more rigor. The MDP formulation defines the state using change readiness scores and the action as adopt vs. resist (p.5). This is under-specified for a Markov process: readiness is measured once (cross-sectional) yet treated as a dynamic state variable in a multi-epoch simulation. Please clarify whether readiness is fixed per agent (a trait/parameter) or evolves as a state over time; if fixed, it should not be the state but a parameter; if evolving, you need an explicit transition model and empirical rationale.

Integration of SEM and RL calibration requires methodological transparency. The paper states that Q-learning trajectories were simulated for 482 synthetic agents and SEM was used to compare simulated adoption curves against self-reported adoption, optimizing RL parameters (p.5). This is potentially novel, but currently too high-level to replicate. Please specify: how the simulated "adoption curve" is operationalized (probability over epochs? cumulative adoption?), what observed

variables are used in SEM (latent vs manifest), what fit indices were targeted, and what optimization procedure links SEM fit to RL parameter estimation.

The literature review contains some questionable domain transfers. The discussion of clinical and therapeutic contexts (e.g., substance dependence, mindfulness, paradoxical timetable therapy) is used to motivate psychological mechanisms underlying workplace risk perception and readiness (p.4; echoed p.7). While creative, it risks appearing tangential unless carefully bounded. Consider either (a) tightening this section to organizational/occupational psychology evidence directly tied to technology adoption, or (b) explicitly articulating why these clinical analogies provide testable, non-trivial insights for corporate innovation adoption rather than rhetorical parallels.

Authors revised the manuscript and uploaded the new document.

### *1.2. Reviewer 2*

Reviewer:

Cross-sectional survey vs. simulated temporal epochs (validity threat). The paper acknowledges the key limitation that longitudinal dynamics are simulated over 100 epochs using parameters initialized from a single-time retrospective survey (p.8). This is not a minor limitation: it affects the interpretability of "temporal dynamics" claims. I recommend reframing the RL output as a computational thought experiment / generative model calibrated to cross-sectional associations unless longitudinal behavioral logs (or repeated measures) are collected to validate the dynamic trajectory claims (pp.8–9).

Measurement model details are missing for psychometrics. You mention validated scales, adaptation to the South African context, pilot testing, and "high reliability coefficients" (p.5), but the manuscript excerpts do not report the actual reliability values (e.g., Cronbach's alpha/omega), factor structure, convergent/discriminant validity, or measurement invariance considerations. Given you later use SEM to align simulated and observed behavior (p.5), readers need the full measurement model results (items, loadings, AVE/HTMT, fit indices) to trust downstream inferences.

Potential common method bias and criterion validity. All key constructs (risk perception, readiness, adoption behavior) appear to be measured via self-report in a single online questionnaire, with adoption captured retrospectively (p.5) and acknowledged recall/social desirability bias (p.8). Please add procedural/statistical steps to mitigate common method variance (e.g., marker variable, CFA single-factor test is weak but reportable, or latent method factor) and discuss criterion validity—ideally triangulating adoption with system usage logs in future work (p.9).

Statistical reporting is incomplete and occasionally opaque. Several results are presented with missing numeric values in the extracted text (e.g., "change readiness … (, )"; correlations "(, )"; effect size "total negative effect size of ") (pp.5, 7–8). Ensure the final manuscript reports exact coefficients, confidence intervals, p-values, and effect sizes consistently, and that all tables (e.g., Table 1 on p.5) are complete and interpretable without relying on narrative descriptions.

Authors revised the manuscript and uploaded the new document.

## 2. Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.



IJIMOB
E-ISSN: 3041-8992