Benchmarking Cross-Sector AI-KM Readiness in Indian Defense: Statistical Insights, Barriers, and a Policy Roadmap for Indigenisation

A. Sharma *
Department of Technology Management, Defence Institute of Advanced Technology, Pune, India

S. Sidharth
Department of Technology Management, Defence Institute of Advanced Technology, Pune, India

Abstract

Background: AI is transforming defense Knowledge Management (KM), but readiness for its adoption—and its real impact on defense indigenisation—remains underexplored in the Indian context.

Objective: This paper benchmarks organizational AI-KM readiness across Indian Tri-services, DRDO, DPSUs, academia, and private industry, identifying critical strengths, bottlenecks, and priorities.

Methods: Using a mixed-methods design grounded in recent peer-reviewed frameworks, we combined a quantitative survey (N=20; Q1–Q2 2025) and qualitative interviews, mapping questions to five readiness dimensions. Rigorous thematic analysis, ANOVA, t-tests, and effect size calculations were performed.

Results: Technological infrastructure scored highest (mean: 3.15/5), while data & knowledge management lowest (2.87/5). Group differences were not statistically significant (ANOVA $p > 0.17$), but moderate effect sizes suggested meaningful trends. Notably, academia outperformed Tri-services in People & Expertise ($t=2.53$, $p=0.045$). Five qualitative barriers emerged: policy-practice disconnect, legacy inertia, securityvs-sharing, collaboration silos, and skills gap.

Limitations: Modest sample size limits generalizability; conclusions are exploratory.

Implications: Tailored crosssector AI-KM training, leadership-driven digital culture, and interoperable infrastructure are urgently needed to close readiness gaps and advance India's indigenisation goals. This is the first Indian, cross-sectoral, empirically benchmarked study of AI-KM readiness in defense ecosystem.

Keywords

AI Readiness, Knowledge Management, Defense Indigenisation, Mixed Methods, India.