## Abstract

This thesis investigates the Internet of Things' (IoT) adoption. in India's textile production sector using The T-O-E (technology-organization-environment framework), focusing on a domain where little research has been previously conducted despite the significant global impact of Industry 4.0 technologies. As Indian textile manufacturing lags in integrating these advanced technologies, understanding the barriers and facilitators to IoT adoption is crucial for enhancing operational efficiencies and competitiveness on a global scale.

The research methodologically quantifies the current levels of IoT adoption through a survey distributed across various textile manufacturers in India. The findings highlight critical gaps in technological infrastructure, expertise, and policy support that hinder effective integration of IoT in the sector. This study is of particular importance to key stakeholders like the government bodies and machinery manufacturers, suggesting that these bodies could drive substantial improvements through targeted policy reforms and support programs.

Recommendations include strategic interventions by these organizations to foster a better adoption environment through infrastructural enhancements, workforce training, and regulatory frameworks. By addressing these issues, the thesis aims to facilitate a pathway for the Indian textile industry to align with global standards, thus unlocking new levels of productivity and innovation.


Keywords: IoT, textile manufacturing, Industry 4.0, T-O-E framework, India, TEXPROCIL, AEPC, ITMA, Technology adoption, Logistic Regression.