ABSTRACT

The integration of Industry 4.0 in the agricultural sector marks a transformative era in farming practices. This survey delves into the implementation of digital technologies, such as the Internet of Things (IoT), Big Data Analytics, and Artificial Intelligence, in India's agronomy. Despite agriculture's substantial contribution to the national GDP, its modernization faces hurdles including technology adaptation, infrastructural inadequacies, and skill shortages. Through a comprehensive data-driven survey and robust statistical analysis, including methods like Linear Regression, MANOVA etc., we gauge the impact of Industry 4.0 on farming efficiency and productivity. The study uncovers those smart technologies promise to streamline agricultural operations, bolster crop yield, and foster resource management. It offers a detailed hypothesis-driven analysis to substantiate the practicality of technological solutions. Concluding with strategic recommendations for overcoming the identified barriers, the survey underscores the critical need for a collaborative approach to unlock the full potential of digital innovation in farming. An annex with detailed survey results, questionnaire and responses complements the research, providing a foundation for future exploration.

KEYWORDS: Industry 4.0, Agricultural Sector, Digital Technologies, Data-Driven Survey, Statistical Analysis, Crop Yield, Resource Management, Strategic Recommendations.