



# Artificial Intelligence including Driven Digital Commerce in Sports and Wellness like Personalization, Performance and the Future Sports Economy

Dr. I. M. Makkubhai

M.P.Ed., M.A, D.Y.Ed., D.C.A., N.I.S., M.Phil., Ph.D., Ph.D., Associate Director, Head of the Department of Physical Education and Sports, Nehru Arts Science and Commerce Degree College, Hubballi, Karnataka, India

Dr. Pushpa .M. Danganavar

M.Com., B.Ed., (Ph.D.) Principal, A.G.M. Arts and Commerce Degree College Varur, Hubballi, Karnataka, India

## Abstract:

The convergence of Artificial Intelligence (AI) and digital commerce is redefining the sports and wellness ecosystem through advanced data-driven personalization, performance optimization, and intelligent economic modeling. This study develops an integrated framework combining machine learning algorithms, wearable sensor analytics, predictive modeling and cloud-based digital infrastructures to enhance athlete performance, consumer engagement, and marketplace efficiency. From a sports science perspective, AI like enabled systems facilitate individualized training prescriptions, injury risk forecasting, recovery optimization and biomechanical assessment through real time physiological data integration.

Technically, the research examines interoperable AI architectures, big data pipelines, recommendation engines and adaptive pricing models that transform digital sports marketplaces into intelligent, self-optimizing ecosystems. Simultaneously, the study addresses governance challenges related to data privacy, algorithmic transparency, athlete data ownership and ethical commercialization, proposing a sustainable regulatory model aligned with digital inclusion and responsible innovation principles.

Findings indicate that AI like driven digital commerce not only enhances athletic performance and wellness outcomes but also strengthens economic scalability, consumer trust and long-term sectoral sustainability. The paper contributes a multidisciplinary roadmap for building a resilient, technology enabled and ethically governed future sports economy, offering strategic insights for researchers, policymakers, sports scientists and industry leaders.

## Keywords:

Driven Digital Commerce, Machine Learning in Sports, Predictive Performance Analytics, Wearable Sensor Technologies, Personalized Training Algorithms, Intelligent Recommendation Systems, Digital Inclusion in Sports Economy.