



Learning Analytics Using Statistical Techniques in Higher Education

Ms. Pallavi Devidasji Potbhare

Assistant Professor,

ASM's College of Commerce,

Science and Information Technology,

Pimpri, Pune-18

Email: pallavipotbhare@asmedu.org

Abstract :

In the modern educational ecosystem, data-driven decision-making has become essential for improving student outcomes. Learning analytics refers to the systematic analysis of educational data to understand and optimize learning processes. This research investigates the role of statistical techniques in analyzing student performance within higher education institutions.

The study utilizes descriptive statistics, correlation analysis, regression modeling, and hypothesis testing to evaluate the relationship between student engagement indicators and academic achievement. The findings reveal that attendance, assignment

performance, and digital learning engagement significantly influence final academic scores. The developed regression model demonstrates high predictive capability, making it useful for early identification of academically at-risk students. The study concludes that statistical learning analytics can enhance institutional decision-making and improve student success rates.

Keywords :

Learning Analytics, Statistical Analysis, Higher Education, Student Performance, Regression Model, Educational Data