International Journal of General Engineering and Technology (IJGET)
ISSN (P): 2278–9928; ISSN (E): 2278–9936
Vol. 14, Issue 1, Jan – Jun 2025; 163–178

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

LEVERAGING DATA ANALYTICS FOR QA METRICS AND DECISION MAKING: ENHANCING SOFTWARE QUALITY AND BUSINESS OUTCOMES

***Kunal Parekh*[1] *& Dr Shantanu Bindewari*[2]**

[1]*Shivaji University, Vidya Nagar, Kolhapur, Maharashtra 416004 India*

[2]*Assistant Professor, IILM University, Greater Noida, India*

ABSTRACT

In today's competitive digital landscape, leveraging data analytics within quality assurance (QA) processes has become imperative for achieving superior software quality and enhanced business outcomes. This paper explores the integration of advanced data analytics with QA metrics to transform traditional testing methodologies into proactive, insight-driven practices. By systematically collecting and analyzing extensive testing data, organizations can uncover hidden patterns and trends that reveal both latent defects and areas of process improvement. The approach combines statistical analysis, data mining, and machine learning techniques to provide predictive insights, enabling early detection of potential quality issues and reducing the likelihood of costly post-release failures. This integration not only empowers quality teams with actionable intelligence but also facilitates more informed decision making across the software development lifecycle. By establishing key performance indicators (KPIs) that are continuously monitored, organizations can swiftly adjust strategies and allocate resources more effectively, ensuring that software products consistently meet high quality standards. Moreover, the adoption of data-driven QA practices contributes to improved customer satisfaction, reduced operational expenses, and a faster time-to-market. Overall, the study highlights the transformative impact of merging data analytics with QA metrics, demonstrating that such synergy is critical for maintaining a competitive edge in an increasingly dynamic market. It underscores the necessity for organizations to embrace a culture of continuous improvement and data-centric decision making to drive business success.

KEYWORDS: *Data Analytics, QA Metrics, Decision Making, Software Quality, Business Outcomes*

Article History

Received: *17 Apr 2025* **|** ***Revised:*** *19 Apr 2025* **|** ***Accepted:*** *21 Apr 2025*