

A Study of Employee Performance and Project Analytics in the IT Industry Using Power BI and AI/ML

Bhavana Suresh Bais

Zeal Institute of Management & Computer Application, Pune.

Abstract - Managing employee performance and analyzing project progress are essential for improving efficiency in the Information Technology (IT) industry, where meeting deadlines and using resources effectively are highly important. However, many IT organizations still face issues such as uneven workload distribution, lack of real-time performance tracking, project delays, and limited use of modern analytical tools. This study explores how data-driven approaches, particularly Power BI and Artificial Intelligence/Machine Learning (AI/ML), can help improve employee performance and project outcomes.

The study mainly focuses on factors such as employee productivity, workload balance, use of performance dashboards, project monitoring, and the role of AI/ML techniques. It examines how these elements contribute to better project success, improved efficiency, smarter decision-making, and effective use of resources. A descriptive research design is used for this study, combining both primary and secondary data. Primary data is collected through a structured questionnaire from IT professionals, while secondary data is obtained from research papers, reports, and other relevant sources.

The collected data is analyzed using basic statistical techniques such as percentages and correlation, along with visual representation through dashboards. The findings highlight that combining Power BI with AI/ML provides better insights into employee performance, supports effective project management, and helps organizations make more informed, data-based decisions. This study offers useful insights for managers, professionals, and researchers working in the IT domain.

Keywords: Employee Performance, Project Analytics, Power BI, AI/ML, Data-Driven Decision Making, IT Industry.

1. INTRODUCTION

In the modern IT industry, managing employee performance and monitoring project progress are essential for achieving organizational success. Factors such as productivity, workload distribution, and efficient use of resources directly impact project outcomes. Traditional methods of performance evaluation often lack real-time insights and accuracy, making it difficult to handle complex data. With the adoption of tools like Power BI and technologies such as Artificial Intelligence (AI) and Machine Learning (ML), organizations can analyze performance data more effectively. These technologies help in tracking progress, identifying patterns, and improving decision-making. This study focuses on understanding how data-driven approaches can enhance employee performance and project management in the IT sector.

2. REVIEW OF LITERATURE

According to **Armstrong (2009)**, performance management is a continuous process that helps in aligning individual goals with organizational objectives. Similarly, **Dessler (2013)** emphasized that effective performance systems require clear goals, regular feedback, and measurable indicators to ensure better employee productivity.

With the growth of technology, data analytics has become an important tool in performance evaluation.

Davenport (2014) highlighted that organizations using data-driven approaches perform better than those relying on traditional methods. **Harris (2010)** also explained that analytics helps in identifying trends, measuring performance, and improving decision-making in organizations.

Business Intelligence (BI) tools such as Power BI have gained popularity for analyzing and visualizing data. **Kimball (2013)** described BI as a system that transforms raw data into meaningful insights. Studies show that Power BI enables organizations to track employee performance and project progress through interactive dashboards, improving efficiency and planning.

Project analytics is another important area, especially in the IT industry. **Kerzner (2017)** stated that project success depends on proper time management, cost control, and resource allocation. Data-driven project management helps in identifying delays, optimizing resources, and improving project outcomes.

Artificial Intelligence (AI) and Machine Learning (ML) have further enhanced performance analysis. **Andrew Ng (2018)** explained that AI/ML can analyze large datasets, identify patterns, and provide predictive insights. These technologies help organizations forecast employee performance, detect risks, and reduce human bias in decision-making. Overall, existing studies highlight that combining data analytics, BI tools, and AI/ML techniques can significantly improve employee performance management and project efficiency in the IT industry.

3. Research Methodology

Research Methodology:

This study uses a descriptive research design to examine employee performance and project analytics in the IT industry. Data is collected from 100 IT professionals through a structured questionnaire using a convenience sampling method. Both primary and secondary data sources are used. The data is analyzed using basic statistical techniques such as percentage.

Research Design:

This study follows a **descriptive research design** to analyze employee performance and project analytics. It focuses on observing and interpreting existing data to identify patterns and relationships without manipulating variables.

Sources of Data:

1. **Primary Data -**
Primary data is collected directly from IT professionals using a structured questionnaire.
2. **Secondary Data -**
Secondary data is collected from research papers, journals, reports, and online sources.

Sampling Technique:

The study uses Simple Random Sampling to select respondents from logistics and supply chain departments of manufacturing firms.

Sample Size:

The study uses a convenience sampling technique, where respondents are selected based on their availability and willingness to participate.

Tools for Data Analysis:

The data is analyzed using basic statistical tools such as percentage. Visualization is done using charts, graphs, Microsoft Excel, and Power BI dashboards.

Scope of the Study:

The study focuses on analyzing employee performance and project analytics in the IT industry using tools like Power BI and AI/ML. It covers factors such as productivity, workload distribution, and project performance, based on data collected from selected IT professionals.

Limitations of the Study:

- Small sample size using convenience sampling
- Data is self-reported and may be biased
- Limited to a specific time period

4. Data Analysis And Interpretation

#Analysis 1: Use of Dashboards (Power BI) in IT Companies

Response	Responses	Percentage
Yes	90	90%
No	10	10%
Total	100	100%

Interpretation:

This shows that most IT organizations have adopted data visualization tools, indicating a strong shift toward data-driven decision-making.

#Analysis 2: Frequency of Reviewing Dashboards

Frequency	Responses	Percentage
Daily	17	17%
Weekly	30	30%
Monthly	42	42%
Rarely	11	11%
Total	100	100%

Interpretation:

The highest percentage (42%) review dashboards monthly. This indicates that most organizations rely on periodic monitoring instead of real-time tracking.

#Analysis 3: Workload Affects Performance

Response	Responses	Percentage
Strongly Disagree	3	3%
Disagree	11	11%
Neutral	16	16%
Agree	38	38%
Strongly Agree	32	32%
Total	100	100%

Interpretation:

70% respondents (Agree + Strongly Agree) believe workload affects performance.

Workload plays a significant role in employee productivity and performance.

#Analysis 4: Tools/Software Improve Efficiency

Response	Frequency	Percentage
Strongly Disagree	7	7%
Disagree	7	7%

Neutral	16	16%
Agree	25	25%
Strongly Agree	45	45%
Total	100	100%

Interpretation:

70% respondents agree that tools improve efficiency. Modern tools like Power BI help employees work more efficiently and improve productivity.

#Analysis 5: AI/ML Can Predict Performance

Response	Frequency	Percentage
Strongly Disagree	4	4%
Disagree	6	6%
Neutral	15	15%
Agree	43	43%
Strongly Agree	32	32%
Total	100	100%

Interpretation:

75% respondents believe AI/ML can predict performance accurately. AI/ML is widely accepted as a useful tool for prediction and better decision-making in organizations.

5. Conclusion

The study clearly shows that employee performance and project success in the IT industry are closely connected and can be significantly improved through data-driven approaches. Factors such as proper workload distribution, effective resource allocation, training, and teamwork play a major role in enhancing employee productivity and overall project outcomes. The findings indicate that when employees are managed efficiently and provided with the right tools and support, organizations can achieve better performance and timely project completion.

The use of modern tools like Power BI helps organizations visualize data, monitor performance, and identify areas for improvement in a clear and structured way. At the same time, the application of Artificial Intelligence (AI) and Machine Learning (ML) enables predictive analysis, which helps in forecasting performance trends, reducing risks, and supporting better decision-making.

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