# A Comparative Study of Power BI and Tableau Through Sales Insights Dashboard Implementation

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**Abstract –** This In today’s competitive business environment, real-time access to data-driven insights is critical for effective decision-making. AtliQ Hardware, an India-based supplier of computer hardware and peripherals, faced significant challenges in monitoring regional sales performance. The company’s sales director had to rely on verbal reports from regional managers, which lacked consistency, clarity, and data-backed evidence—ultimately leading to frustration and poor strategic decisions amid declining overall sales.

To address this, a comprehensive sales insights dashboard was developed using two leading Business Intelligence (BI) tools—Power BI and Tableau. This study presents a practical comparison of these tools based on a step-by-step implementation of dashboards. In Power BI, detailed modules such as key performance indicators, profit analysis, and overall performance tracking were developed. In Tableau, visualizations were created focusing on revenue and profit analysis. The comparison explores various factors such as data connectivity, ease of use, visualization capabilities, performance with small and large datasets, and implementation complexity.

Results reveal that Power BI, with its seamless Microsoft ecosystem integration and cost-effectiveness, is well-suited for small to medium datasets and quick deployment. Tableau demonstrates superior handling of large datasets and offers advanced customization, albeit with a steeper learning curve and higher costs. Based on these findings, the study offers recommendations for organizations on selecting the appropriate BI tool depending on their business needs, technical expertise, and data infrastructure.

***Key Words*:** Power BI, Tableau, Buisiness Intelligence (BI), Data Visualization, Real-time Insights, Comparative Study

**1.INTRODUCTION**

In the modern business landscape, organizations are increasingly dependent on data-driven decision-making to sustain and grow in a dynamic market. Business Intelligence (BI) tools have emerged as crucial enablers of this transformation, providing businesses with the ability to convert raw data into actionable insights. These tools not only enhance the decision-making process but also improve visibility into key performance metrics and operational efficiency

AtliQ Hardware, an India-based supplier of computer hardware and peripherals, operates through multiple regional offices with its head office located in Delhi. The company supplies products to various clients across India, including retail chains like Surge Stores and Nomad Stores. Despite its wide distribution network, AtliQ Hardware’s sales performance monitoring was limited to verbal communication between the sales director and regional managers. This approach resulted in inconsistent reporting, lack of transparency, and an incomplete view of regional sales trends. The absence of a centralized, data-backed reporting system made it difficult for the sales director to identify problem areas and make informed decisions—especially as overall sales began to decline.

To address these issues, this research focuses on the implementation of interactive sales dashboards using two widely adopted BI tools: Power BI and Tableau. The primary objective is to enable the company to track sales performance accurately and in real-time, empowering stakeholders with actionable insights and supporting strategic planning.

In this study, a full-featured sales insights dashboard was developed in Power BI, covering modules such as key performance indicators (KPIs), overall performance tracking, and profit analysis. Additionally, a parallel implementation in Tableau was carried out to analyze revenue and profit performance. Through this dual implementation, the paper compares the two tools in terms of usability, data connectivity, visualization capabilities, implementation flexibility, and performance with small and large datasets.

The goal of this research is not only to showcase the technical implementation of dashboards but also to provide a comprehensive comparative analysis of Power BI and Tableau to help organizations choose the most appropriate tool based on their specific needs, scale, and technical expertise.

The remainder of this paper is structured as follows: Section II provides a review of related work and an overview of the selected BI tools. Section III describes the methodology and step-by-step dashboard development process. Section IV presents the comparative analysis and key observations. Finally, Section V concludes the study with insights and recommendations for future use

## 2. LITERATURE SURVEY

[1]. This paper concentrated on sales insights for a hardware supply firm, emphasizing the importance of power BI in enterprise environments. They noted how the simplicity of the tool and the ability to visualize the data in real time were central to creating actionable insights. Using an organized ETL process with SQL for extraction, Power Query for transformation, and DAX for modeling, they were able to enable better strategic decision-making. Even though Tableau was not used in their analysis, the study highlighted how power BI efficienlty handles large volumes of data and assists buisinesses in making timely data-driven decisions.

[2]. This paper discussed the interactive capabilities and data modeling feature of Power BI while analyzing sales intelligence. Their step-by-step methodology incorporated data from MySQL, cleaned the data with Python, and utilized Power Query and DAX for transformation and modeling. It emphasized the utilization of a star schema design to improve query performance and dynamic dashboards with drill-down functionality for better insights. While Tableau was not part of the comparison, the study stressed Power BI’s user-friendliness, flexibility, and cost-effectiveness in providing real-time analytics and actionable business insights.

[3]. This paper examined how Power BI could integrate sales, finance, marketing, and supply chain forecasting to deliver comprehensive insights for data-driven decision-making. Through the aggregation of data from CRM systems, financial databases, and marketing platforms, they were able to develop multi-dimensional views that enhanced revenue, expense, and profitability forecasting. The research highlighted the fact that Power BI's integration of real-time data and interactive dashboards, which enabled end-users to drill down into dimensions, delivered accurate insights into business performance and maximized strategy optimization.

[4]. This research proved that the fusion of SQL-based data pipelines with Power BI dashboards allowed monitoring the sales, product performance, and inventory of different regions in real-time in Atliq Hardware. Structuring and cleaning the sales data within MySQL Workbench, the dashboard gave insight, including 35% concentration of sales within the Northeast region and 40% of the overall sales coming from smartphones. The study also found that low inventory levels were correlated with a 20% decrease in sales. These findings highlighted the importance of synchronized data for decision-making, and the use of Power BI’s interactive visuals and KPIs allowed users to track trends like quarterly growth and regional contributions.

[5]. Banerjee, Das, and Nath (2024) examined how Power BI facilitates business intelligence and strategic planning through its data visualization capabilities. Their research demonstrated how well-organized and clean datasets in Power BI result in real-time insights that aid decision-making across business functions. They pointed to the employment of calculated columns and DAX formulas in deriving greater insights from large sets of data, illustrating how interactive dashboards might monitor KPIs and improve business team collaboration. The study further pointed out that bringing together Power BI and external data sources delivered a single business view of operations, enhancing forecasting and alignment.

[6]. The paper tackles the revolution Power BI has brought about in business intelligence via unhindered connection, transformation, and visualization of data. A case study of the Quick Insights feature of Power BI was used to analyze how algorithms are employed to create analytical reports automatically, eliminating human errors. A case study of Atliq Hardware revealed how Power BI dashboards made regional sales performance visualization possible, enabling faster and better decisions. The article also touched upon the increasing relevance of mobile BI, driven by the COVID-19 pandemic, and its anticipated market growth, and how Power BI has helped in streamlining data interpretation and enhancing business

[7]. The research contrasted Power BI and Tableau, noting that both applications provide powerful data analytics capabilities but are designed to serve distinct business purposes. Power BI was admired for its low cost and ease of use, especially for businesses already accustomed to Microsoft products. Its drag-and-drop interface and Excel integration eliminated the need for technical expertise, making it perfectly suitable for non-technical people. Tableau, on the contrary, was commended for its sophisticated functionality in dealing with complex data and providing highly customizable, interactive dashboards, which made it more appropriate for larger companies or those requiring thorough analytics.

[8]. The paper examined the place of Business Intelligence (BI) and Data Science in decision-making, pointing out that Power BI is heavily utilized to turn raw data into useful insights via visualizations and dashboards. The research compared the capabilities of Power BI to those of Data Science tools and found that whereas Data Science depends on machine learning to predict trends, Power BI is best at preparing intuitive visualizations for strategic business planning. The report also identified the popularity of tools such as Power BI and Google Analytics due to their scalability and user-friendliness, although data integration and tool compatibility can be a challenge.

## 3. METHODOLOGY

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