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

## fin\_ijprems1716970555

Bhange et al. (2024) conducted a comprehensive sales insights analysis using Power BI for a hardware supply company. The study followed a structured ETL process, integrating SQL for data extraction, Power Query for transformation, and DAX for modeling. The dashboards created enabled actionable insights and improved strategic decision-making. While the paper did not compare Power BI with other BI tools like Tableau, it emphasized Power BI’s effectiveness in enterprise-level scenarios, its ease of use, and real-time data visualization capabilities.

**Additional Points You Can Mention (Optional Supporting Sentences):**

* Power BI was used as the **primary BI tool**, with features like interactive dashboards, DAX formulas, and Power Query Editor to handle and visualize sales data.
* The study adopted a **stepwise methodology**: data collection from MySQL, cleansing, transformation, visualization, and KPI analysis.
* Although Tableau wasn’t directly compared, Power BI’s capabilities in terms of **timely decision-making and automation** were highlighted.

## 2. IARJSET.2024.11750

Tehreen and Thanuja (2024) conducted a sales insights analysis using Power BI, focusing on its interactive visualization features and data modeling capabilities. Their study used a systematic methodology involving data integration from MySQL, data cleaning with Python, transformation through Power Query, and DAX-based modeling. A star schema design was employed to enhance query performance, and dynamic dashboards were developed with drill-down features. While the study did not compare Power BI with other BI tools, it emphasized the platform’s ease of use, flexibility, and cost-effectiveness in deriving actionable business insights.

**Additional Points You Can Mention (Optional Supporting Sentences):**

* The paper underlines Power BI's effectiveness in delivering real-time analytics without relying on advanced AI or machine learning.
* Emphasis was placed on **user feedback and iterative dashboard improvements** to meet business requirements.
* It reinforces that **technical proficiency** in DAX and data modeling is essential to leverage the full power of Power BI.

## 3. ijles-v6i5p101

According to Jadhav et al. (2023), the integration of Power BI for sales, finance, marketing, and supply chain forecasting delivers comprehensive insights for data-driven decision-making. By leveraging data from various sources, including CRM systems, financial databases, and marketing platforms, the dashboard facilitates accurate revenue, expense, and profitability forecasts. The study emphasizes the use of **Power Query** for data acquisition and transformation, along with **DAX formulas** for performing key calculations such as sales, gross profit, and net income. The dashboard’s multi-dimensional views enhance decision-making through its visualization of financial, marketing, and supply chain performance, while its real-time data integration capabilities ensure up-to-date insights across business operations.

**🔹 Additional Points You Can Mention (Optional Supporting Sentences):**

* The dashboard's ability to integrate **sales data**, **customer behavior**, and **market trends** facilitates accurate future projections for business strategies.
* **Supply chain forecasting** is particularly enhanced through KPIs like **forecast accuracy**, **net error**, and **absolute error**, which allow businesses to improve inventory management and procurement.
* The **interactive visualizations** and **drill-down features** in Power BI allow users to explore data from different dimensions, offering valuable insights into the **financial performance** of different regions and products.
* The research underscores the importance of **SQL database integration** for real-time analysis and data transformation in Power BI, utilizing **MySQL** and **Power BI** to streamline data handling.

## 4. ssrn-4938126 (1)

According to the findings from this study, the integration of **SQL-based data pipelines** with **Power BI dashboards** enables real-time monitoring of regional sales, product performance, and inventory efficiency for Atliq Hardware. By using **MySQL Workbench** to clean and structure the sales data, and visualizing it through **Power BI**, the dashboard identifies key sales drivers across customer segments and geographic regions. The implementation highlights a **35% sales concentration in the Northeast**, with smartphones accounting for **40% of total sales**, indicating strong product-market fit. Additionally, the paper emphasizes that **low inventory levels** directly correlate with a **20% drop in sales**, underlining the importance of synchronized data and supply chain visibility for effective decision-making.

**🔹 Optional Supporting Sentences:**

* The dashboard supports **KPI-based performance tracking**, allowing business users to monitor trends such as quarterly growth, product category dominance, and regional contribution to overall sales.
* The study underscores the significance of **real-time visual analytics** in understanding sales momentum, with observed increases of **15% from Q1 to Q2** and **10% from Q2 to Q3**, reflecting seasonal patterns and business strategy alignment.
* By segmenting customers into **corporate (60%)** and **individual (40%)**, the dashboard provides actionable insights for targeted marketing and B2B sales optimization.
* The use of **interactive filters** and **dynamic visuals** in Power BI enhances user experience, enabling stakeholders to drill down into specific product lines or regions to uncover granular insights.
* The methodology applied demonstrates a scalable approach, combining **SQL for backend processing** and **Power BI for frontend storytelling**, making it adaptable to broader business intelligence applications.

## 5. 6-1-28-593

According to the study conducted by Banerjee, Das, and Nath, Power BI proves to be an effective tool for **business intelligence and strategic planning** through its advanced data visualization capabilities. The paper emphasizes how **Power BI dashboards**, when built on clean, structured datasets, can deliver **real-time insights** that support data-driven decisions across business functions. Through a series of visual reports, the researchers demonstrate how companies can track performance metrics, customer behavior, and operational efficiency, thereby enabling **proactive strategy formulation**. The study also highlights the role of **calculated columns and DAX functions** in enhancing analytical depth, allowing users to derive meaningful patterns and trends from large datasets.

**🔹 Optional Supporting Sentences:**

* The authors note that **interactive dashboards** created using Power BI help organizations monitor KPIs dynamically, improving decision-making speed and accuracy.
* A major insight from the paper is that **visual analytics tools like Power BI** foster better collaboration among business teams by presenting complex data in an accessible, intuitive format.
* By integrating **Power BI with external data sources** such as Excel, SQL Server, or cloud platforms, businesses gain a unified view of operations, resulting in improved forecasting and strategic alignment.

## 6. IJfor research

In the research paper titled *“Power BI and Its Use in Business Intelligence and Data Analysis”*, the authors examine how Power BI has transformed the business intelligence landscape by enabling users to seamlessly connect, transform, and visualize data. The paper emphasizes the significance of Power BI’s Quick Insights feature, which uses advanced algorithms to automatically generate analytical reports, thus minimizing human errors in data interpretation. The authors highlight Power BI's user-friendly interface and compatibility with common data sources like Excel, making it an ideal tool for research data analysis. A key example is AtliQ Hardware, an Indian firm struggling with sales insight and decision-making due to fragmented and non-visualized data shared via spreadsheets and verbal reports. Through Power BI dashboards, the firm was able to visualize regional sales performance and gain actionable insights, enabling quicker, data-driven decisions. The study also touches on the growing relevance of mobile BI, accelerated by the COVID-19 pandemic, and its projected market growth. The conclusion affirms that Power BI’s visualization capabilities simplify data interpretation and representation, which is especially valuable in both corporate and educational environments for conceptual understanding and improved business performance.

## 7. JETIR2501123

According to the research conducted by the authors, the study compares **Power BI** and **Tableau**, highlighting how both tools provide **robust data analytics features** suited for different user bases and business needs. The research emphasizes that **Power BI** is an excellent choice for organizations looking for an **affordable, user-friendly solution**, particularly for users already familiar with Microsoft products. The paper points out that Power BI offers **easier accessibility**, especially for **non-technical users** through its intuitive interface, drag-and-drop functionality, and seamless integration with **Excel**. On the other hand, **Tableau** is noted for its **advanced visualization capabilities**, including the ability to handle **complex datasets** and offer highly customizable, **interactive dashboards** that are essential for **data-driven decision-making** in larger organizations or those requiring deeper analytics.

## 8. sharma2021

Business Intelligence (BI) and Data Science are crucial for decision-making and data analysis. Power BI is widely used for turning raw data into useful insights through visualizations and dashboards, helping businesses make informed decisions. On the other hand, Data Science focuses on using advanced techniques like machine learning to analyze data and predict future trends. Tools like Google Analytics and Thoughtspot also play a key role in analyzing customer interactions and business performance. Studies show that Power BI and Google Analytics are popular choices because they are easy to use and scalable, but there are still challenges with data integration and tool compatibility. This paper will examine how these tools, especially Power BI, can be used to create real-time sales dashboards for better business strategies.

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

**1. Bhange et al. (2024) - *fin\_ijprems1716970555***

Bhange et al. (2024) conducted a comprehensive sales insights analysis for a hardware supply company using Power BI. Their study emphasized the effectiveness of Power BI in enterprise-level scenarios, particularly its ease of use and real-time data visualization capabilities. The authors adopted a structured ETL process, using SQL for data extraction, Power Query for transformation, and DAX for modeling. This methodology enabled actionable insights that facilitated improved strategic decision-making. While the study did not compare Power BI with other BI tools such as Tableau, it highlighted Power BI’s proficiency in handling large datasets and supporting timely decision-making through its dynamic dashboards and KPI analysis.

* Power BI was employed as the primary BI tool, utilizing interactive dashboards, DAX formulas, and Power Query Editor to visualize sales data.
* A stepwise methodology was used: data collection from MySQL, cleansing, transformation, visualization, and KPI analysis.
* Although Tableau was not compared directly, the research emphasized Power BI’s automation and real-time decision-making strengths.

**2. Tehreen and Thanuja (2024) - *IARJSET.2024.11750***

Tehreen and Thanuja (2024) explored Power BI’s interactive visualization features and data modeling capabilities in the context of sales insights analysis. Their study employed a systematic methodology, including data integration from MySQL, Python-based data cleaning, transformation using Power Query, and DAX-based modeling. The use of a star schema design enhanced query performance, while dynamic dashboards with drill-down features provided valuable insights. While Tableau was not part of the comparison, the paper emphasized Power BI’s user-friendly nature, flexibility, and cost-effectiveness in driving actionable insights.

* The study highlighted Power BI’s capability to deliver real-time analytics without relying on advanced AI or machine learning.
* Emphasis was placed on user feedback and iterative improvements to dashboards to meet business needs.
* The research underscores the necessity of technical proficiency in DAX and data modeling to fully leverage Power BI’s potential.

**3. Jadhav et al. (2023) - *ijles-v6i5p101***

Jadhav et al. (2023) examined the integration of Power BI for sales, finance, marketing, and supply chain forecasting, underscoring the tool’s ability to deliver comprehensive insights for data-driven decision-making. Their study utilized data from various sources such as CRM systems, financial databases, and marketing platforms. The integration of Power Query and DAX formulas enabled the creation of multi-dimensional views that facilitated accurate revenue, expense, and profitability forecasts. The real-time data integration capabilities of Power BI ensured up-to-date insights across business operations.

* The dashboard’s ability to integrate diverse data streams, including sales, customer behavior, and market trends, facilitated accurate business strategy projections.
* KPIs for supply chain forecasting, such as forecast accuracy and error metrics, were pivotal in enhancing inventory management.
* Power BI’s interactive visualizations and drill-down features allowed users to explore data from various dimensions, offering valuable insights into financial performance across regions and products.

**4. ssrn-4938126 (1)**

This study demonstrated how integrating SQL-based data pipelines with Power BI dashboards allows for real-time monitoring of regional sales, product performance, and inventory efficiency at Atliq Hardware. By using MySQL Workbench to clean and structure the sales data, the dashboard provided insights into sales drivers across different customer segments and geographic regions. A key finding was that 35% of sales were concentrated in the Northeast, with smartphones accounting for 40% of total sales. Additionally, the paper highlighted that low inventory levels were directly correlated with a 20% decrease in sales, emphasizing the need for synchronized data and supply chain visibility for effective decision-making.

* The dashboard facilitated KPI-based performance tracking, allowing business users to monitor trends such as quarterly growth, product dominance, and regional sales contributions.
* Real-time visual analytics played a crucial role in understanding sales momentum, reflecting seasonal patterns and aligning with business strategies.
* Interactive filters and dynamic visuals in Power BI enhanced the user experience, enabling stakeholders to drill down into specific product lines or regions for deeper insights.

**5. Banerjee, Das, and Nath (2024) - *6-1-28-593***

Banerjee, Das, and Nath (2024) explored Power BI’s role in business intelligence and strategic planning, highlighting its advanced data visualization capabilities. The authors emphasized how Power BI dashboards, when built on clean, structured datasets, deliver real-time insights that support data-driven decisions across business functions. Through various visual reports, the study demonstrated how organizations can track key performance indicators (KPIs), customer behavior, and operational efficiency, thus enabling proactive strategy formulation. The study also emphasized the use of calculated columns and DAX functions to enhance analytical depth, enabling users to derive meaningful trends from large datasets.

* The research stressed how interactive dashboards improve decision-making speed and accuracy, helping organizations monitor KPIs dynamically.
* A key insight was that Power BI fosters better collaboration among business teams by presenting complex data in an accessible format.
* Integrating Power BI with external data sources such as Excel, SQL Server, or cloud platforms enables businesses to gain a unified view of operations, improving forecasting and strategic alignment.

**6. “Power BI and Its Use in Business Intelligence and Data Analysis” (2024)**

This paper examined how Power BI has transformed the business intelligence landscape by enabling seamless data connection, transformation, and visualization. The study highlighted Power BI’s Quick Insights feature, which uses advanced algorithms to automatically generate analytical reports, thus reducing human errors in data interpretation. The authors emphasized Power BI’s user-friendly interface and compatibility with common data sources like Excel, positioning it as an ideal tool for research and data analysis. A case study involving AtliQ Hardware showcased how Power BI dashboards helped the firm visualize regional sales performance, enabling quicker, data-driven decisions.

* The paper explored the growing relevance of mobile BI, accelerated by the COVID-19 pandemic, and its projected market growth.
* Power BI’s ability to simplify data interpretation and visualization has proven invaluable for both corporate and educational environments, enhancing conceptual understanding and business performance.

**7. JETIR2501123**

This study compared Power BI and Tableau, emphasizing how both tools offer robust data analytics features suited for different user bases and business needs. Power BI was noted for being an affordable, user-friendly solution, particularly for organizations already familiar with Microsoft products. The research highlighted Power BI’s accessibility, ease of use, drag-and-drop functionality, and seamless integration with Excel, making it ideal for non-technical users. In contrast, Tableau was praised for its advanced visualization capabilities, particularly for handling complex datasets and offering highly customizable, interactive dashboards suitable for larger organizations or those needing deeper analytics.

* Power BI’s simplicity and integration with Microsoft products make it a go-to tool for small to medium-sized businesses.
* Tableau’s advanced features cater to enterprises requiring detailed, customizable, and interactive visualizations for more in-depth analytics.

**8. Sharma (2021)**

Sharma (2021) examined the role of Business Intelligence (BI) and Data Science in decision-making and data analysis. The paper emphasized that Power BI is widely used for transforming raw data into useful insights through visualizations and dashboards, facilitating informed decision-making. In contrast, Data Science relies on advanced techniques such as machine learning to predict future trends. The study also noted that tools like Google Analytics and Thoughtspot are essential for analyzing customer interactions and business performance. Power BI and Google Analytics were identified as popular tools due to their scalability and ease of use, despite challenges with data integration and tool compatibility.

* The research discussed how Power BI, in particular, can be used to create real-time sales dashboards to enhance business strategy and decision-making.
* The study also recognized Power BI’s potential in creating intuitive visualizations, which simplify data interpretation for strategic business planning.

**1. Bhange et al. (2024) - fin\_ijprems1716970555**In their study of 2024, Bhange et al. 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 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 efficiently handles large volumes of data and assists businesses in making timely data-driven decisions.

**2. Tehreen and Thanuja (2024) - IARJSET.2024.11750**  
Tehreen and Thanuja (2024) 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.  
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**3. Jadhav et al. (2023) - ijles-v6i5p101**  
Jadhav et al. (2023) 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.  
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**4. ssrn-4938126 (1)**  
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.  
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**5. Banerjee, Das, and Nath (2024) - 6-1-28-593**  
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.  
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**6. "Power BI and Its Use in Business Intelligence and Data Analysis" (2024)**  
This article discussed 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 and learning results.  
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**7. JETIR2501123**  
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.  
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**8. Sharma (2021)**  
Sharma (2021) 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.