iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 12 **Issue:** VII **Month of publication:** July 2024

DOI: https://doi.org/10.22214/ijraset.2024.63802

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 12 Issue VII July 2024- Available at www.ijraset.com

A Study on Implementation of Power Bi Dashboards to Streamline Business Processes

Dr.T.Ezhilarasi[1], Jaswanth M S[2]
[1]*Assistant Professor-MBA Jai Shriram Engineering College Tirupur*
[2]*Founder & Creative Director, Modern Monke- Creative Re- Branding agency, CBE.*

Abstract: ***This study aims to address day-to-day business challenges by utilizing a robust business intelligence tool. The objective of this study is revolve around enhancing data management and analysis within the organization, specifically using Power BI as a powerful tool. To leverage the capabilities of Power BI (Business Intelligence) to solve various business problems encountered on a daily basis. By harnessing the features and functionalities of this tool, organizations can gain insights, make data-driven decisions, and improve overall operational efficiency. To establish effective data management practices within the organization, particularly in relation to Power BI. This involves structuring and organizing data in a way that optimizes its accessibility, accuracy, and relevance. By effectively managing data, organizations can ensure reliable and efficient decision-making processes. To focuse on analyzing the performance of the firm using Power BI. By utilizing the tool's visualization capabilities, organizations can generate interactive reports and dashboards that provide a comprehensive overview of the firm's performance metrics. This analysis enables stakeholders to identify areas of improvement, evaluate key performance indicators, and make informed strategic decisions.***
Keywords: powerBI.

I. INTRODUCTION TO THE STUDY

Organizations deal with lots of data regularly. But in case you are not able to access or connect with that important data, you are not yielding anything. You are keeping your organizations away from getting the value. In today's data-driven world, organizations rely heavily on accessing and connecting with their data to derive insights and make informed decisions. If an organization is unable to access or connect with its important data, it can significantly hinder their ability to extract value from that data. Data holds immense potential for uncovering valuable insights and opportunities. If an organization cannot access or connect with its data, it will miss out on the chance to discover patterns, trends, and correlations that can drive business growth and competitive advantage. This can result in missed opportunities to optimize operations, improve customer experiences, identify market trends, or detect emerging risks. Data serves as a critical foundation for decision-making processes. Without access to important data, organizations may have to rely on incomplete or outdated information, which can lead to flawed decision-making. Decisions based on incomplete data can result in inefficient resource allocation, misguided strategies, and missed chances to address critical issues or capitalize on emerging trends. Data plays a vital role in monitoring organizational performance and key performance indicators (KPIs). Without access to relevant data, organizations may struggle to track and measure their progress accurately. This can impede their ability to identify areas for improvement, measure the success of initiatives, or track the impact of changes over time. As a result, organizations may find it challenging to make data-driven adjustments and drive continuous improvement. When organizations face difficulties in accessing or connecting with data, it can create bottlenecks and delays in various aspects, such as data analysis, reporting, and collaboration. This can lead to operational inefficiencies, redundant efforts, and decreased productivity across different teams or departments.

II. POWER BI

Power BI is a powerful and widely used data analysis and visualization tool developed by Microsoft. It provides a comprehensive set of features that allow users to transform raw data into interactive and visually appealing reports, dashboards, and insights. With Power BI, you can connect to various data sources, perform data modeling and transformations, create visualizations, and share your findings with others.

©IJRASET: All Rights are Reserved

Key aspects of Power BI as a data analysis tool

1) *Data connectivity:* Power BI allows you to connect to a wide range of data sources, including databases, spreadsheets, cloud services, and online sources. It supports both structured and unstructured data, making it easy to access and analyze information from different systems.
2) *Data modeling and transformation:* Power BI provides a robust data modeling environment where you can shape and transform your data. You can create relationships between different tables, define calculations using formulas or functions, and perform advanced data transformations using Power Query Editor.
3) *Data visualization:* One of the core strengths of Power BI lies in its ability to create rich and interactive visualizations. You can build various types of charts, graphs, maps, and tables to represent your data visually. The visualizations are highly customizable, allowing you to apply formatting, colors, and interactive features to enhance the presentation and analysis of your data.
4) *Dashboards and reports:* Power BI enables you to create interactive dashboards and reports that consolidate multiple visualizations and data insights in a single view. Dashboards provide a high-level overview of your data, while reports offer more detailed analysis and drill-down capabilities. You can add filters, slicers, and interactive elements to enable users to explore data in real-time.
5) *Collaboration and sharing:* Power BI allows you to share your dashboards and reports with others within your organization or externally. You can publish your reports to the Power BI service or embed them in other applications. The cloud-based nature of Power BI facilitates collaboration, as multiple users can access and work on the same datasets and reports simultaneously.
6) *Data exploration and insights:* With Power BI, you can explore your data interactively and uncover meaningful insights. The tool offers a variety of data exploration features, including ad-hoc querying, drill-down capabilities, and the ability to ask questions using natural language queries. Power BI also provides AI-powered features, such as automated insights and quick data summarization, to help you discover patterns and trends in your data more easily.
7) *Integration with other tools:* Power BI integrates seamlessly with other Microsoft products and services, such as Excel, Azure, and SQL Server. It also offers connectors and APIs to connect with third-party tools and services, allowing you to leverage existing data infrastructure and extend Power BI's capabilities.

In summary, Power BI is a comprehensive data analysis tool that empowers users to connect, transform, visualize, and share data insights effectively. Its intuitive interface, powerful features, and integration capabilities make it a popular choice for individuals and organizations looking to derive valuable insights from their data. Power BI provides decision-makers with a comprehensive and intuitive platform to access, analyze, and visualize data, enabling them to make informed decisions based on real-time insights. By leveraging its powerful features, organizations can enhance their decision-making processes and drive better business outcomes.

III. AIM OF THE STUDY

To help in solving the day-to-day business problem with the help of a powerful business intelligence tool. To manage and deal with data in an effective way. To analyze the performance of the firm in the line with Power BI Tool. To analyze the efficiency of Power BI over Excel for managing and visualizing data to help in taking informed decisions.

IV. REVIEW OF LITERATURE

Zhang, Y., Zuo, Y., Han, L., & Qiao, Y. (2019). Integration of Power BI into business intelligence teaching in higher education. Journal of Educational Technology Development and Exchange (JETDE), 12(1), 1-15. This study examines the integration of Power BI into business intelligence teaching in higher education. The researchers conducted a survey among students to evaluate the effectiveness of Power BI in teaching business intelligence concepts. Results showed that Power BI can help students better understand data visualization and analysis, as well as improve their business intelligence skills. Chen, C., Fan, L., & Li, Y. (2020). A real-time monitoring and evaluation system based on Power BI in construction project management. Automation in Construction, 112, 103121. This research presents a real-time monitoring and evaluation system based on Power BI in construction project management. The system can collect data from various sources, such as sensors and mobile devices, and present real-time data analysis results through Power BI dashboards. The system has been tested in a real construction project and showed good performance in monitoring and evaluating project progress. Gao, M., Lu, Y., Xiong, Y., & Yuan, Y. (2020). Data-driven decision-making for supply chain management: An application of Power BI. Journal of Industrial and Management Optimization, 16(4), 1569-1584. This research presents an application of Power BI in data-driven decision-making for supply chain management.

The researchers developed a supply chain dashboard using Power BI, which can provide real-time information about inventory, orders, and delivery status. The dashboard has been tested in a real company and showed significant improvements in supply chain management efficiency. **Sabherwal, R., & Jeyaraj, A. (2020).** Exploring the value of Power BI in big data analytics. Journal of Big Data, 7(1), 1-20. This study explores the value of Power BI in big data analytics. The researchers conducted a survey among big data analytics professionals to evaluate the effectiveness of Power BI in big data analytics. Results showed that Power BI can help organizations analyze big data more efficiently and effectively, as well as improve decision-making.

V. METHODOLOGY

1) *Research Design*: The study uses Analytical Research Design.
2) *Sampling Design*:The Sampling technique used in Convenient Sampling.
3) *Measurement Scales And Tools*: Various Analytical techniques were employed to examine the data such as Power BI tool, Correlation and Regression, Swot Analysis and Percentage analysis.
4) *Excel And Power Bi*: Microsoft Excel is a spreadsheet editor developed by Microsoft for Windows, macOS, Android and iOS. It features calculation or computation capabilities, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. Microsoft Power BI is an interactive data visualization software product developed by Microsoft with a primary focus on business intelligence. It is part of the Microsoft Power Platform.

VI. ANALYSIS

S.No	D.V	H.F	Percentage
	Age	20-29	69.4%
	Gender	Male	61.4%
	Exp	2-5 yrs	52.8%
	Data dashboard	Yes	97%
	Visualizing data	Yes	95.4%
	Excel toughness	Yes	51.7%
	Interested to learn power BI	Yes	96%
	Interested to create live dashboard	yes	97%

Source: Primary Data

It appears that the majority of individuals fall within the age category of 20 to 29, accounting for 69.4% of the total. that the majority of individuals in the dataset identify as male, accounting for 61.1% of the total. the majority of individuals fall within the age category of 2 to 5 years, accounting for 52.8% of the total. that the majority of individuals said “yes” with accounting for 97.2% of the total. the majority of participants (95.4%) believe that visualizing data in charts helps to solve organizational problems faster. participants have mixed experiences in managing Excel data sheets. The responses are evenly distributed between "Yes" and "Maybe," each accounting for 53.7% and 41.7 respectively. the majority of respondents (94.4%) are interested in learning about Power BI. majority of respondents (96.3%) are interested in creating live dashboards for data visualization.

VII. INTERFERENCE

S.NO	Gender and the variable	Df	Sig
1.	Gender & overall Exp using Excel.	4	.047
2.	Gender & Familiarity with Power BI	4	.742
3.	Gender & Automotive BI	2	.020

Source: Primary data.

The p value is more than 0.05, therefore, the null hypothesis is accepted so there is no significant association between Gender and Overall Experience Using Excel.) the p value is more than 0.05, therefore, the null hypothesis is accepted so there is no significant association between Gender and Familiarity with Power BI. the p value is more than 0.05, therefore, the null hypothesis is accepted so there is no significant association between Gender and Interested to Learn Power BI.

VIII. SUGGESTIONS AND CONCLUSION

Enhance User Experience: Despite the generally positive rating for Excel, it is essential to continuously improve the user experience. PWIP Food Tech Pvt Ltd should gather feedback from users and identify areas for improvement in terms of functionality, ease of use, and performance.

Promote Live Dashboards: The high interest shown by respondents in creating live dashboards for data visualization presents an opportunity for PWIP Food Tech Pvt Ltd to leverage Power BI's capabilities. The company should invest in training and resources to enable employees to create dynamic and interactive dashboards that provide real-time insights.

In conclusion, the findings of the study indicate a positive outlook for the implementation of Power BI. The majority of respondents show interest in creating live dashboards, learning about Power BI, and believe in the importance of data analysis for the organization. While there is room for improvement in user experience and familiarity with Power BI, the study suggests that Investing in training and resources can address these areas. Furthermore, the correlation analysis Highlights the relationship between age and work experience, emphasizing the importance of Experienced employees in utilizing data-driven decision-making

REFERENCES

[1] Anwar, M., & Fatima, A. (2017). Power BI: A data visualization tool for business intelligence. Journal of Information Systems and Technology Management, 14(2), 269-doi: 10.4301/S1807-17752017000200006.

[2] Biswas, D., & Ganguly, D. (2018). Exploring data visualization tools for business intelligence. International Journal of Business Intelligence Research, 9(2), 1-18. doi: 10.4018/IJBIR.2018040101.

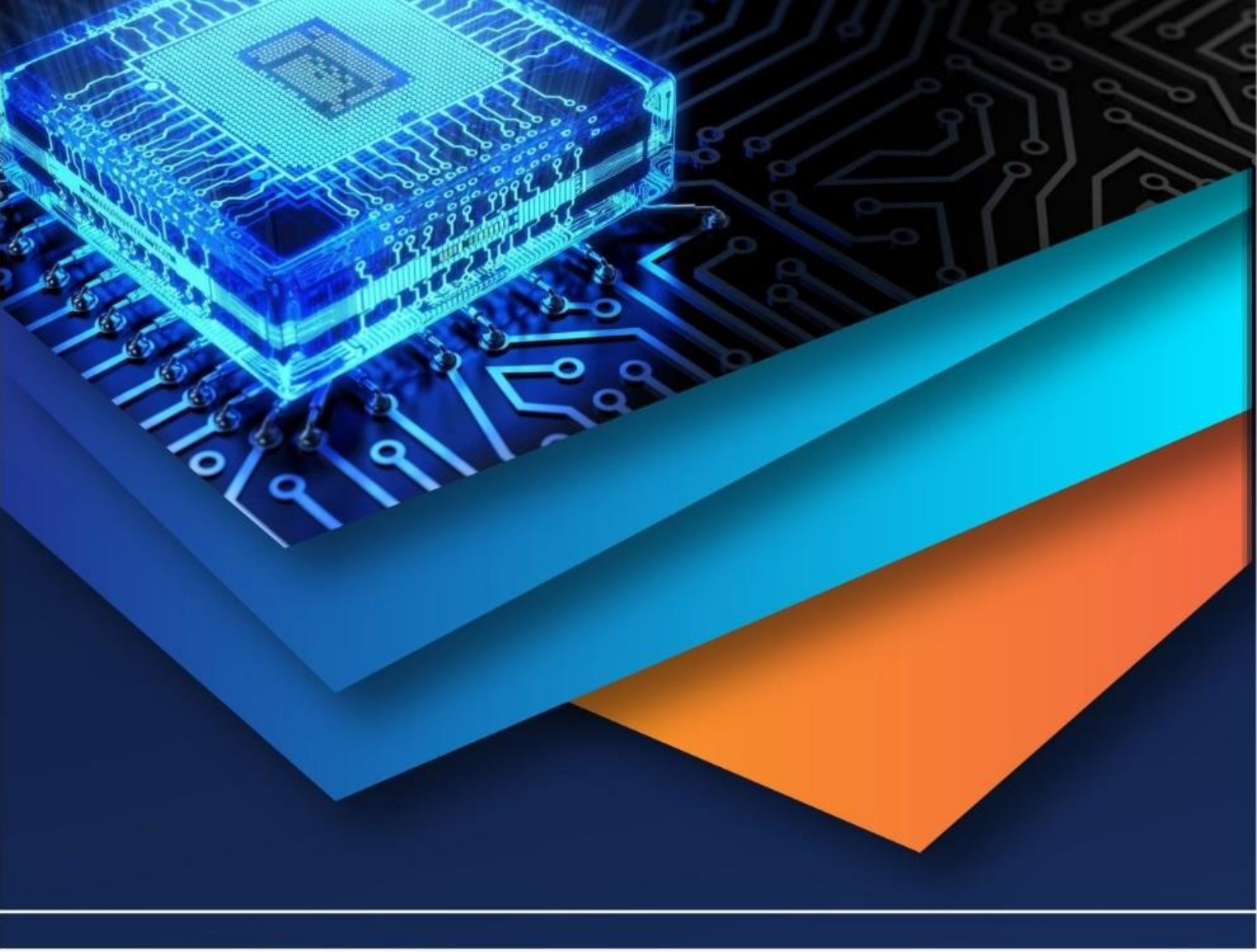
[3] Bhatia, V., & Sharma, S. (2018). Empirical analysis of data visualization tools for business intelligence. International Journal of Emerging Trends in Engineering Research, 6(10), 195-202.

[4] Chen, C. J., & Chang, C. C. (2019). Using data visualization tools for decision-making in higher education. Journal of Applied Research in Higher Education, 11(2), 269-287. doi: 10.1108/JARHE-10-2018-0183

[5] Patel, K. & Patel, A. (2018). An Evaluation of Power BI and Other Data Visualization Tools for Business Intelligence. Journal of Big Data, 5(1), 1-12. https://doi.org/10.1186/s40537-018-0114-x.

[6] Tiwari, R. K. & Singh, S. K. (2019). Improving Operational Efficiency through Power BI Dashboards: A Case Study. Journal of Enterprise Information Management, 32(6), 956-972. https://doi.org/10.1108/JEIM-12-2018-0239

[7] Mohamad, M., & Balaji, R. (2019). The impact of data visualization on decision-making: A case study of Power BI. Journal of Business and Management, 21(1), 32- doi: 10.1108/JBM-11-2018-0192.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)