

The Ease of Data Sales Visualization Using The Interactive Tableau Dashboard to Support Decision Making in MSMEs

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Abstract

Micro, small, and medium enterprises (MSMEs) face the challenge of surviving and competing with other MSMEs and other higher forms of corporations, which need a very fast and rapid decision-making process. This study aims to implement digital transformation, especially in MSMEs, by using an interactive dashboard called Tableau. This research was conducted in Vifas Batik Yogyakarta and used interviews, observations, and documentation to gather the data. This research also goes through some process from designing and implementation itself. Due to the implementation process, it can be concluded that the use of an interactive dashboard can easily and quickly help business owners to know their business performance better. This research also provides practical contributions for other MSMEs with similar issues and adds to the accounting information system literature about the implementation of business intelligence towards MSMEs' decision-making processes.

Keywords: *business intelligence, digital transformation, MSMEs, Tableau*

1. INTRODUCTION

Increasingly tight market competition in the digital era requires MSMEs to be more responsive and adaptive to change. As the backbone of the Indonesian economy, MSMEs have a broad impact on people's welfare, because MSMEs are the main source of livelihood for many people [1]. However, the reality shows that many MSMEs in Indonesia have difficulty in utilizing technology to support business operations. Data from the Ministry of Cooperatives and MSMEs states that in 2024, only 30% of MSMEs in Indonesia will use technology, while the rest still rely on manual methods for recording transactions and managing business data. This causes delays in information, which ultimately hinders data-based decision making [2]. In addition, many MSMEs make business decisions based on intuition or experience without being supported by comprehensive data analysis, which often results in inaccurate and high-risk decisions [3]. This condition shows that data-based decision making is very much needed to help MSMEs understand market trends, customer preferences, and business opportunities, but the inability to access relevant data weakens their competitiveness in the industry [4].

Business Intelligence (BI) offers a solution to this problem by transforming raw data into information that can be used to support operational strategies and decision making [5]. BI implementation is still limited among MSMEs, even though companies that have implemented it, even on a small scale, have a greater opportunity to achieve competitive advantage [2]. One relevant BI implementation is the use of dashboards that are able to integrate data from various sources into real-time visualizations that are easy to understand [6]. With interactive dashboards, business owners can quickly analyze sales trends, customer preferences, and market opportunities, supporting more strategic decisions [7]. MSMEs can make decisions more quickly and effectively based on available information, thereby increasing the competitiveness of their

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business [8]. One of the ideal BI platforms for SMEs is Tableau Public. This platform allows the creation of interactive dashboards with various interesting visualizations, without requiring high technical skills [9][10]. Tableau Public helps SMEs with limited resources access BI technology, enabling faster and more efficient data-driven decision making [11]. Despite challenges such as the need for training, this tool is more affordable and accessible than other BI tools [12].

Vifas Batik is a kind of MSME that produces various batik crafts and has successfully exported its products abroad. This business is considered suitable to be the target for implementing the interactive tableau dashboard because: (1) it still records manually so the data is not yet real time online, (2) the basis for adding stock is based on intuition, so that there is a possibility of overstock in the storage warehouse, (3) not all of the human resources are familiar with technology.

Based on the various problems that exist, the question raised in this study is, How can the implementation of dashboard-based Business Intelligence using Tableau Public, especially for sales data visualization, help Vifas Batik's operations?.

2. METODE PENELITIAN

This research was conducted at Vifas Batik, located at Jl. Kebon Agung, Kb. Arung, Tridadi, Kec. Sleman, Kab. Sleman, Special Region of Yogyakarta 55511. This research was conducted in September - December 2024. The type of research used is qualitative research. Qualitative methods are methods that aim to analyze and describe in depth, to find, develop, and test the validity of knowledge, as well as find solutions to the problems faced. [13]. The data collection method uses interview techniques with sources, observation, and documentation. This research uses stages adapted to the Miles and Huberman Technique, which maps out that there are three components that interact with each other in the qualitative research analysis process, namely data reduction, data display, and drawing conclusions and verification (conclusion).

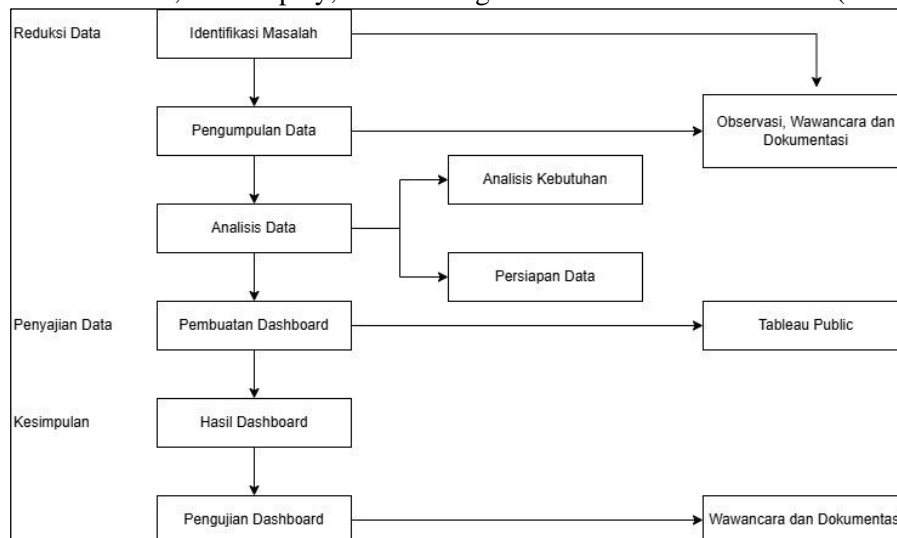


Figure 1. Research Stages

Research stages can be explained briefly as follows:

2.1. Data Reduction

Data reduction is the process of selecting important data from irrelevant data to support research objectives. In this study, sales, inventory, and financial data of Vifas Batik MSMEs will be collected, selected, and adjusted to the analysis needs.

2.2. Data Display

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These three main indicators provide a summary of Vifas Batik's overall performance. Total sales amounted to Rp1,938,294,500, total profit amounted to Rp490,354,838, and Total products sold amounted to 342,256 units. These three indicators are placed at the top of the dashboard to make it easier for users to get important information quickly.

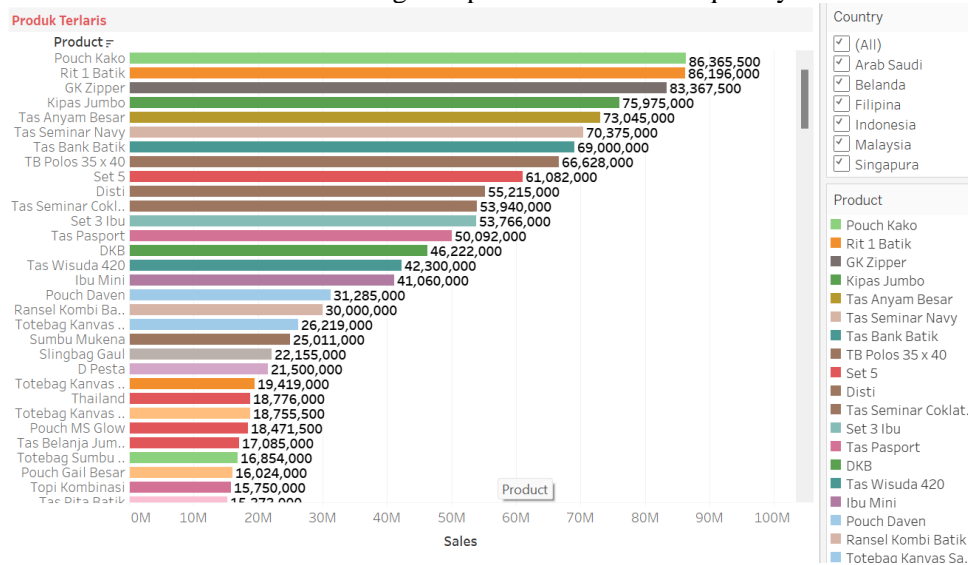


Figure 4. Best Seller Visualization

This bar chart displays a list of best-selling products based on their total sales. The best-selling product is the Koko Pouch with total sales of Rp86,156,500, followed by other products. This visualization helps MSMEs understand the products that are most in demand in the market.

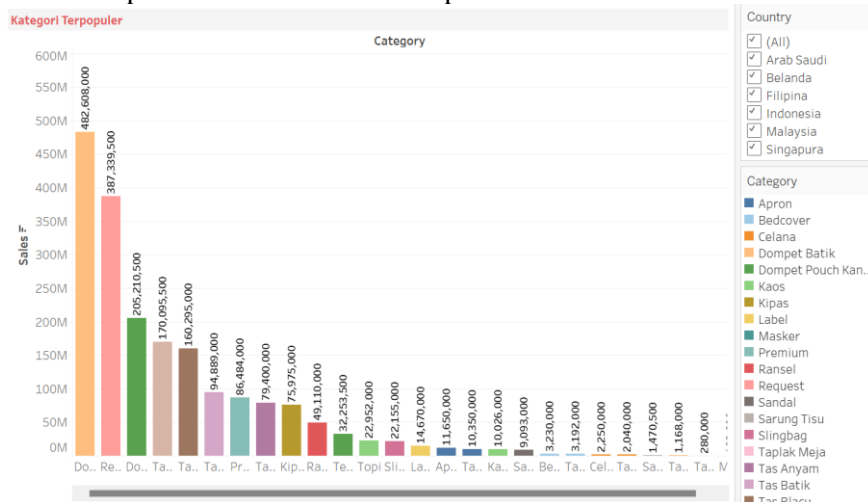


Figure 5. Popular product visualization by categories

This bar graph shows the most popular products by their categories. It can be seen that the most popular category is batik wallets. This helps MSMEs to identify the types of products that are most in demand by customers and becomes the basis for designing production and marketing strategies.

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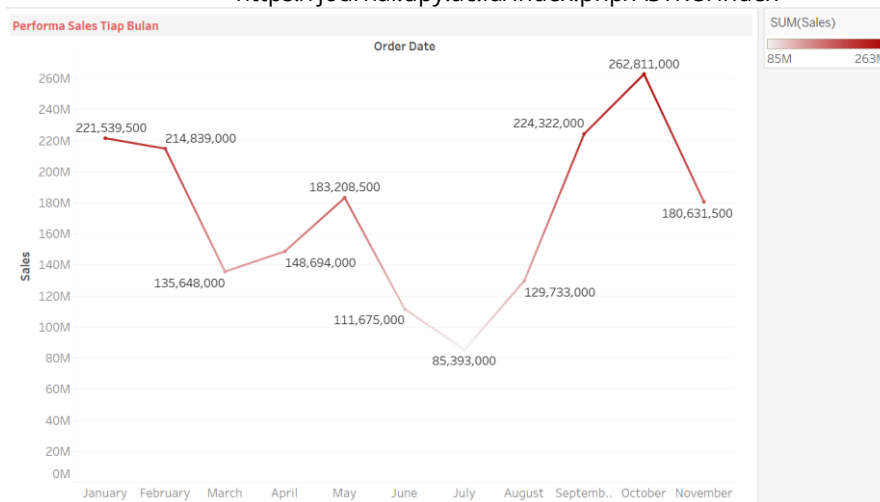


Figure 6. Visualization of monthly sales comparison

From figure 6, it can be seen that the line chart above shows that sales fluctuated throughout the months, with a highest peak in October of 262,811,000 and a significant drop in July of only 85,393,000. This chart provides a clear visual representation of the sales trend each month, which can help in performance analysis and strategic decision-making regarding sales.

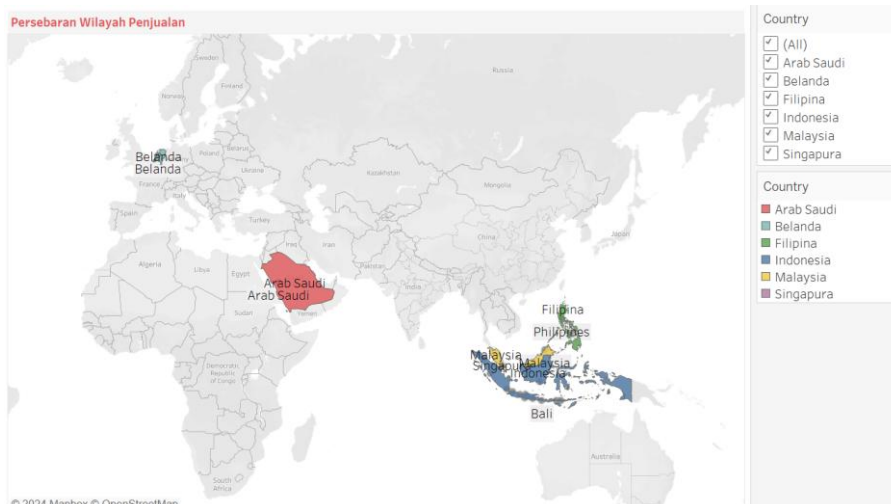


Figure 7. Visualization of sales area distribution

The map on the left shows the geographic sales area, including countries such as the Netherlands, Saudi Arabia, Indonesia, Malaysia, and Singapore. This facilitates analysis of market coverage and potential expansion into new territories.

3.3. Conclusion

The use of Tableau-based dashboards has brought significant changes in the decision-making process at Vifas Batik. Previously, decisions were based on intuition, causing problems such as stockpiling and wastage of resources. With the dashboard, Vifas Batik can now utilize data effectively and easily, such as :

- a) Allowing management to prioritize the most in-demand products, such as Pouch Kako and Rit 1 Batik.
- b) Helping to understand financial trends and evaluate marketing strategies.

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- c) Visualizing regional contributions to sales, focusing strategies on promising markets.
- d) Reducing overstock by determining production quantities based on actual sales data.
- e) Accelerating decision-making with easy-to-understand visualizations.
- f) Minimizing losses by producing stock according to market demand.

Overall, the dashboard helps Vifas Batik become more efficient, data-driven, and supports sustainable business growth.

4. CONCLUSION

Based on the results of the implementation and discussion that have been done, it can be concluded that the dashboard designed using Tableau Public can present sales data visually and interactively, which helps business decision-making. The implementation of BI-based dashboards has been proven to increase the accuracy and speed of decision-making by automating data processing, reducing the risk of recording errors, and supporting operational efficiency, including in stock management.

SUGGESTION

For further research, it is recommended to focus on the application of Business Intelligence (BI) in various MSME sectors with different types of products and services, compare various BI platforms, and expand the application of BI to operational aspects other than sales.

REFERENCE

- [1] Z. H. Fachrunnisa and A. Z. Putri, "Factors affecting the performance of MSMEs in Purworejo regency," *J. Multidisiplin Madani*, vol. 2, no. 1, pp. 383–398, 2022, doi: <https://journal.yp3a.org/index.php/mudima/index>.
- [2] V. English and M. Hoffman, "Business intelligence as a source of competitive advantage in SMEs: a systematic review," *DBS Bus. Rev.*, vol. 2, 2018, doi: <https://doi.org/10.22375/dbr.v2i0.23>.
- [3] V. K. Subroto and E. Endaryati, "Business intelligence dan kesuksesan bisnis di era digital," *J. Manaj. Sos. Ekon.*, vol. 1, no. 2, pp. 41–47, 2021, doi: <https://doi.org/https://doi.org/10.51903/dinamika.v1i2.45>.
- [4] E. Hariani, R. F. Widyawati, M. F. Firmansyah, D. A. Saputra, and I. N. Diana, "Pembuatan dashboard sederhana sebagai media representasi data penjualan UMKM," *J. Pengabd. Dan Pemberdaya. Masy.*, vol. 2, pp. 124–129, 2023, doi: <https://doi.org/doi.org/10.60004/komunita>.
- [5] S. F. H. A. D. W. Maulida, "Monitoring aplikasi menggunakan dashboard untuk sistem informasi akuntansi pembelian dan penjualan (studi kasus UD Apung)," *J. Tekno Kompak*, vol. 14, no. 1, 2020, doi: <https://doi.org/https://doi.org/10.33365/jtk.v14i1>.
- [6] A. Alexander and B. Noranita, "Penerapan business intelligence dashboard pada sekolah tinggi pertanahan nasional menggunakan metodologi scrum," *J. Masy. Inform.*, vol. 12, no. 2, pp. 66–77, 2021, doi: <https://doi.org/https://doi.org/10.14710/jmasif.12.2.41048>.
- [7] H. Sulistiani, "Perancangan dashboard interaktif penjualan (studi kasus PT Jaya Bakery)," vol. 12, no. 1, 2018, doi: <https://doi.org/https://doi.org/10.33365/jtk.v12i1.61>.
- [8] M. S. Umam, "Orientasi etika dan cyber security awareness (studi kasus pada umkm di

- <https://journal.upy.ac.id/index.php/ASTRO/index>
bantul),” *J. Akunt. Dan Manaj. AKMENIKA*, vol. 16, no. 2, 2019, doi:
<https://doi.org/10.31316/akmenika.v16i2>.
- [9] Siska and R. Mufidah, “Sosialisasi aplikasi business intelligence untuk operasional bisnis UMKM,” *Community Dev. J.*, vol. 4, no. 6, pp. 12643–12648, 2023, doi:
<https://doi.org/10.31004/cdj.v4i6.22191>.
- [10] I. Cahyati, “Penerapan business intelligence dengan artificial intelligence pada e-commerce,” *SENTRI J. Ris. Ilm.*, vol. 3, no. 6, pp. 2741–2756, 2024, doi:
<https://doi.org/10.55681/sentri.v3i6.2904>.
- [11] B. Lailatul Nafisa, Y. Novealita, W. Putri, and Q. Ayunin, “Dashboard visualisasi data UMK sebagai alat pengambilan keputusan menggunakan microsoft power BI,” *Akunt. dan Manaj.*, vol. 17, no. 2, pp. 86–105, 2022, doi: <https://doi.org/10.30630/jam.v17i2.199>.
- [12] E. A. Hermanto, S. Gemintang, R. Ariansyah, M. Ananda, and G. Ramadhan, “Analisis perbandingan penerapan business intelligence di Indonesia menggunakan metode systematic literature review,” *J. Teknol. Inf.*, vol. 4, no. 2, 2023, doi:
<https://doi.org/10.46576/djtechno>.
- [13] A. Lestari, A. Fitriasia, and Ofianto, “Metodologi ilmu pengetahuan : kuantitatif dan kualitatif dalam bentuk implementasi,” *J. Pendidik. dan Konseling*, vol. 4, no. 6, pp. 8558–8653, 2022, doi: <https://doi.org/10.31004/jpdk.v4i6.9710>