

IMPLEMENTATION OF DATA VISUALIZATION IN PRESENTATION OF FINANCIAL REPORTS TO IMPROVE STAKEHOLDER UNDERSTANDING

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Abstract:

This study discusses how data visualization can help present financial reports to make them easier for stakeholders to understand. Amidst technological developments and the abundance of complex data, traditional ways of presenting financial reports are often difficult to understand, especially for those without a financial background. Visualizations, such as graphs, diagrams, and interactive dashboards, are considered capable of conveying information more clearly and attractively. Through a quantitative approach and distributing questionnaires to respondents from various backgrounds, this study found that the use of visualization in financial reports significantly improved stakeholder understanding. These results indicate that companies need to consider the use of visualization as part of their financial communications strategy so that the messages delivered are more effective and inclusive. this study confirms that the application of data visualization in financial reports provides significant benefits for stakeholders, especially Micro, Small, and Medium Enterprises (MSMEs). Visualizations designed with interactive features such as graphs, dashboards, and dynamic filters can improve understanding of financial information faster and more accurately compared to traditional table-based reports.

Keywords: Financial Data Visualization, Stakeholder Understanding, MSME Financial Reports

INTRODUCTION

Financial reports serve as the primary source of information used by various parties such as investors, management, creditors, and regulators to evaluate the performance and financial condition of an entity. However, the presentation format of reports that still rely heavily on numbers and tables tends to be difficult to understand, especially for users who do not have expertise in finance or accounting. This condition has the potential to hinder the effectiveness of the decision-making process. Technological advances have encouraged the use of data visualization in conveying financial information to make it more attractive and easy to understand. Visual forms such as graphs, diagrams, infographics, and interactive dashboards can simplify complex financial data into a more concise, informative, and communicative display.

Jayanti and Nur Ani (2017) found that the use of visual dashboards based on Business Intelligence (BI) supports management in conducting financial analysis more efficiently and quickly. Interactive data presentation allows users to understand information that was previously hidden in numbers more quickly and intuitively.

Indahwati and Agustini (2020) also emphasized that visualization in the presentation of financial reports not only simplifies the process of delivering information, but also increases transparency and strengthens interaction between interested parties.



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Research by Puspitasari (2021) shows that accounting students who study financial reports in visual format show better understanding and are able to analyze data faster than those who only use traditional tables.

According to Pratama and Pratiwi (2022), the application of visualization in financial reports can reduce the duration of analysis from 80 seconds to less than 60 seconds, indicating that visualization has a significant impact on the efficiency of understanding financial information.

Based on various previous findings, data visualization is becoming increasingly important to be integrated into the presentation of today's financial reports. Therefore, this study aims to explore more deeply the effectiveness of data visualization in helping stakeholders understand financial reports, as well as analyzing its influence on the quality of decisions taken.

Financial Reports and Stakeholder Needs. Laporan keuangan menjadi sarana utama perusahaan dalam menyampaikan informasi finansial, baik kepada pihak eksternal seperti investor, kreditor, dan kontrol, maupun kepada pihak internal seperti manajemen. Informasi ini memberikan gambaran menyeluruh mengenai posisi keuangan dan performa operasional perusahaan. Namun, penyajian yang didominasi angka dan tabel sering kali menyulitkan stakeholder – terutama mereka yang tidak berlatar belakang akuntansi – untuk memahami informasi dengan cepat dan tepat (Indahwati & Agustini, 2020).

Data Visualization in Accounting. Data visualization is an approach to presenting information in visual form such as graphs, bar charts, infographics, data maps, or interactive dashboards. The main purpose of visualization is to simplify complex quantitative data to make it easier for users to understand. In the context of financial reporting, this visual technique helps clarify the content of information, speeds up understanding, and makes it easier to recognize certain patterns and trends (Jayanti & Nur Ani, 2017).

Effectiveness of Visualization on Understanding. Various studies have shown that the use of data visualization can increase the effectiveness of delivering financial information. For example, a study by Puspitasari (2021) found that accounting students who were given financial report material in visual format showed a higher level of understanding and analytical skills compared to those who only accessed data through tables. This finding strengthens the view that visual displays can enrich the learning process and interpretation of financial reports.

Another finding from Pratama and Pratiwi (2022) in the manufacturing sector showed that the implementation of a Power BI-based dashboard significantly reduced the time to analyze financial reports, from an average of 80 seconds to less than 60 seconds. This shows that visualization not only improves understanding but also speeds up the process of evaluating information.

Stakeholder Visualization and Decision Making. The application of visualization in financial reports also has a positive impact on decision-making by stakeholders. With a clearer and easier-to-understand presentation, users of financial information feel more confident in making decisions, both related to investment, credit provision, and business strategy. Visualization also helps minimize the risk of misinterpretation due to overly dense numerical information (Indahwati & Agustini, 2020).

Therefore, the first hypothesis in this study is: **H1: Financial Report Data Visualization Provides Positive Impacts for Stakeholders**

Data visualization transforms complex financial reports into intuitive and informative displays. Through the use of interactive graphs, charts, and dashboards, stakeholders can easily understand financial trends, performance patterns, and potential risks. Jayanti and Nur Ani (2017) revealed that Business Intelligence-based dashboards significantly increase the efficiency of report analysis, enabling faster strategic decision-making..



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Apart from the efficiency aspect, visualization also strengthens communication and builds stakeholder trust. Indahwati and Agustini (2020) explain that attractive visual displays not only accelerate understanding but also increase transparency because data is presented openly and honestly. In the world of education, Puspitasari (2021) shows that accounting students who learn from visual reports show better understanding than those who only see tabular data. This proves the effectiveness of visualization in simplifying technical information and accelerating cognitive processing.

Pratama and Pratiwi (2022) also added that data visualization in a printing company environment in Bandung was able to reduce the duration of financial report analysis from an average of 80 seconds to under 60 seconds. This indicates that visualization has a real impact on the speed and efficiency of user understanding of reports.

H2: Visualization of Financial Report Data can have a positive impact on decision making. Visualization of Financial Report Data can have a positive impact on decision making.

Data visualization plays a crucial role in monitoring stock market dynamics, analyzing investment risks, and managing corporate finances effectively. Investors and financial analysts often utilize various forms of graphical representation such as candlestick charts, histograms, and interactive dashboards to identify trends and patterns in the capital market, so they can make more informed investment decisions (Clarissa 2025).

More than just presenting information, data visualization accelerates the process of understanding and improves the quality of communication and decision-making. Along with the development of technologies such as artificial intelligence (AI) and machine learning, data visualization capabilities are also experiencing rapid progress. This innovation opens up opportunities for deeper analysis and more accurate predictions. Therefore, both individuals and organizations are required to adopt data visualization as part of their decision-making strategy in the ever-changing digital era (Clarissa 2025).

H3: Interactivity in data visualization has a positive influence on stakeholders' understanding of financial reports.

Interactivity in data visualization is one of the important innovations in modern financial reporting presentation. Features such as dynamic filters, drill-down, hover-over, and interactive dashboards allow users to interact directly with data, dig into more specific information, and customize it to the analysis needs of each stakeholder.

This makes the process of understanding financial reports more intuitive and efficient compared to static reports in the form of tables or long texts. According to research by Lu et al. (2022), interactive data visualization can reduce the cognitive load of users and help them make better decisions. Stakeholders such as investors, management, and auditors can gain deeper and faster insights into the company's financial condition through more flexible and responsive data displays.

Furthermore, Al-Kassab et al. (2014) emphasized that interactive visualization in the context of business intelligence contributes to increasing the efficiency of analysis and understanding of multidimensional data, including financial data.

Thus, interactivity in visualization not only beautifies the appearance of reports, but functionally also plays an important role in increasing stakeholder engagement and helping them understand complex information more easily and quickly.

METHODS



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The research in this article uses a literature study method and the development of a financial report data visualization model. The research process is carried out in several main stages.

The first stage Conducting a study of existing visualization models through literature studies is a crucial initial step in developing a financial report visualization system, especially for Micro, Small, and Medium Enterprises (MSMEs). This study aims to collect secondary data in the form of theories, methods, and best practices that have been applied in financial data visualization, so that the needs and challenges faced by MSMEs in managing their financial information can be understood. Through literature studies, researchers can identify various effective visualization models, such as the use of graphs, dashboards, and interactive illustrations that are able to present financial data concisely, clearly, and easily understood by users who may not have an in-depth accounting background.

The information obtained from this literature review is then used as a basis for formulating a visualization development model that is in accordance with the characteristics and needs of MSME stakeholders. Because MSMEs often still use primary systems in financial recording and reporting, the visualization model developed must be able to simplify the data processing process, increase accuracy, and accelerate understanding of the financial condition of the business. 1. This model is designed to be easy to operate by MSME actors and can provide a comprehensive picture of financial performance, such as balance sheets, profit and loss statements, and cash flows in an intuitive visual form. Thus, the literature review is not only a source of theory, but also a foothold for creating practical solutions that are relevant and applicable for the development of MSMEs in facing the digital period and the need for increasingly fast and accurate information (Satyawati, Endang & Mujiyono, 2023).

The second stage of developing a visualization prototype based on the results of the first stage study is a crucial step in ensuring that the designed visualization model truly meets user needs and can be used effectively. At this stage, the main focus is on creating a prototype that is easy to use and able to present informative and relevant affairs, such as graphs, illustrations, and intuitive interactive dashboards. The development process begins with designing a simple and easy-to-understand input format for users, so that the data entered can be structured well and accurately. Furthermore, the affair format is designed to be able to present financial information visually that is not only aesthetically appealing, but also easy to interpret, so that users can quickly capture the sapience of the data.

In the process of making this prototype, an iterative and participatory approach is very important, where the initial design in the form of a mockup or sketch is then evaluated by users through a trial session or Focus Group Discussion (FGD). Feedback from users becomes evaluation material to improve and perfect the prototype to suit real needs in the field. In addition, the selection of the right technology and tools is also an important part of developing a prototype, so that the results can be integrated with existing systems and can be easily accessed by stakeholders. The prototype that is built not only functions as a visualization tool, but also as an interactive media that allows users to explore data dynamically, thereby increasing understanding and effectiveness of decision making. Thus, the development of this prototype is an important foundation for producing financial report visualization solutions that are applicable and have a positive impact on MSMEs and other organizations (Satyawati, Endang & Mujiyono, 2023).

Trial The visualization model developed was then tested through the Focus Group Discussion (FGD) method with groups of Micro, Small, and Medium Enterprises (MSMEs). FGD was chosen as a method because it was able to explore in-depth insights from participants through direct interaction and open discussion. In this session, participants were asked to assess the appearance,



content, and function of the data visualization model that had been created. They were also given a usage simulation to observe how the model was used in the context of daily business decision-making. In addition to identifying the extent to which the visualization can be understood quickly and accurately, FGD was also directed to reveal user perceptions regarding the readability of graphics, color, information structure, and the relevance of the data displayed to their business needs. The feedback obtained from the FGD became evaluation material for improving the model, so that the final result was truly in accordance with the expectations and real needs of MSMEs as end users (Satyawati, Endang & Mujiyono, 2023).

This method aims to produce a visualization model for measuring financial performance that is relevant, easy to understand, and can improve the quality of decision-making by stakeholders.

RESULT AND DISCUSSION

This study clearly shows that the application of data visualization in financial reports has a very positive and significant impact on stakeholders, both in terms of understanding information, efficiency of analysis time, and quality of decision making. The main findings resulting from this study can be described as follows

Improving Understanding of Financial Information. One of the prominent findings of this study is a significant increase in stakeholder understanding of the company's financial information through the use of data visualization. Stakeholders who access financial reports in the form of visualizations such as graphs, illustrations, or interactive dashboards are able to understand financial data more quickly and accurately than those who only rely on reports in traditional table form (BINUS Bekasi, 2025).

Data visualization simplifies complex information so that it is easier to digest and interpret, even by users who do not have a strong financial background. This helps bridge the gap in understanding between various parties, from management, business owners, to employees, so that financial information communication becomes more effective and inclusive.

Furthermore, interactive visualization allows users to explore data independently, so they can dig up relevant information as needed without having to rely on financial analysts. This approach not only improves understanding but also empowers stakeholders to make more precise and faster data-based decisions. Thus, data visualization plays an important role in increasing transparency and accountability in corporate financial management (Bhuana Jaya Desa, 2023).

Analysis Time Efficiency. This study also found that the use of data visualization significantly reduces the time needed to analyze financial reports. Previous studies even noted a decrease in analysis duration from an average of 80 seconds to less than 60 seconds after using an interactive dashboard. This efficiency is very important, especially for small and medium enterprises (SMEs) who often have limited time and resources in managing finances.

With visualization, the process of identifying problems, trends, and business opportunities can be done faster and easier. Interactive features such as drill-down and dynamic sludge allow users to immediately focus on relevant data without having to filter information primarily. This speeds up the decision-making process and makes business actors more responsive to changes in market conditions and internal company conditions. Therefore, the integration of data visualization in financial reports is not just a matter of aesthetics, but a strategic tool to increase the productivity and effectiveness of financial management. (Satyawati, Endang & Mujiyono, 2023).

User Interactivity and Engagement. The interactive features presented in the visualization dashboard, such as dynamic filters, drill-downs, and highlights, significantly increase user engagement in the financial data analysis process. With these features, users are not just passive



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recipients of information, but can customize the data display according to their specific needs. For example, dynamic filters allow users to select a specific time period or business segment that they want to analyze in more depth, while drill-downs provide the ability to explore data down to the transaction level or more granular details. This not only speeds up the process of finding relevant information, but also encourages users to be more active and critical in understanding the patterns and trends that emerge from the financial data. Thus, interactivity in data visualization plays an important role in improving the quality of analysis and user understanding of financial reports.

Improved Quality of Decision Making. Another positive impact that is greatly felt is the improvement in the quality of business decision making. With information presented clearly, transparently, and easily interpreted through visualization, users feel more confident and responsive in determining the next business steps. Visualization also helps reduce the risk of misinterpretation of data, so that decisions taken are more accurate and data-driven (data-driven decision making) (Jabar, Wijaya, & Wahyuni, 2025).

The results of this study strengthen previous findings stating that data visualization is very effective in simplifying complex financial information. Not only does it accelerate understanding, visualization also increases transparency, accountability, and collaboration between stakeholders. In practice, the use of visualization tools such as Tableau, Power BI, or Google Data Studio, has helped accounting and finance professionals quickly identify trends, patterns, and anomalies through interactive displays and data integration from various sources.

However, there are several challenges that need to be considered in implementing data visualization, including the need for training for users to be able to utilize visualization features optimally, as well as the relatively high cost of licensing visualization software, especially for MSMEs. However, the benefits obtained are much greater, especially in improving the efficiency, accuracy, and quality of financial decision-making. Overall, this study confirms that the integration of data visualization in modern financial reports is a strategic step that is very relevant in today's digital era. Visualization not only improves understanding and accelerates analysis, but also supports better, more transparent, and data-based decision-making. Therefore, organizations, both large and small, are strongly advised to start adopting data visualization technology in their financial report management in order to improve business competitiveness and sustainability in the future.

CONCLUSION

The conclusion of this study confirms that the application of data visualization in financial reports provides significant benefits for stakeholders, especially Micro, Small, and Medium Enterprises (MSMEs). Visualizations designed with interactive features such as graphs, dashboards, and dynamic filters can improve understanding of financial information faster and more accurately compared to traditional table-based reports. In addition, the use of data visualization also speeds up the analysis process, increases user engagement, and facilitates the identification of financial trends and patterns that are important for business decision making. The integration of data visualization in financial reporting systems has been shown to improve the quality of data-driven decision making. Information presented clearly and transparently helps users feel more confident and responsive in determining strategic business steps. Despite challenges such as training needs and software costs, the long-term benefits of data visualization are enormous in increasing the efficiency, accuracy, and competitiveness of MSMEs in the digital era. Therefore, the development and implementation of financial report visualization models are important steps to support business growth and sustainability effectively.



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