

DSA (Datara SmartBiz Analyzer): Data Analytics Solution for Adaptive Business Strategies and Sustainable Business Growth

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Abstract

Purpose: This study aims to develop the Datara SmartBiz Analyzer (DSA), a digital platform that integrates business analytics, Break-Even Point (BEP) analysis, profitability simulation, and automated business reporting to support data-driven decision-making.

Design/methodology/approach: A descriptive research approach was employed using secondary financial data from an Indonesian MSME, including sales, fixed costs, variable costs, selling prices, and sales volume. Descriptive statistical analysis and Break-Even Point (BEP) analysis were conducted to evaluate the platform's potential in supporting business management.

Findings: The findings indicate that the MSME reaches its break-even point at approximately 276 units of sales per month. DSA integrates financial data, operational costs, and BEP analysis into a real-time dashboard, enabling business owners to monitor business performance, evaluate profitability, determine sales targets, and make more accurate and timely decisions. The platform also provides interactive data visualization that enhances business planning and operational efficiency. Furthermore, the analysis reveals substantial variations in turnover, profitability, and operational costs among MSMEs, emphasizing the importance of integrated digital financial management.

Practical implications: The proposed platform offers a practical solution for empowering MSMEs and promoting sustainable business growth in the digital era. Overall, the findings demonstrate that DSA has the potential to improve operational efficiency, strengthen data-driven decision-making, enhance MSME competitiveness, and support the development of a digital, inclusive, sustainable, and Islamic economic ecosystem.

Originality/value: This study contributes a novel digital analytics platform specifically tailored for MSME financial management, uniquely integrating BEP analysis, profitability simulation, and automated reporting into a single, user-friendly dashboard designed to address the practical decision-making needs of small business owners.

Paper type: Empirical research.

Keywords: Digital transformation, MSMEs, Business analytics, Decision Support System, Break-Even Point, Datara SmartBiz Analyzer.

1. Introduction

In line with the theme From Values to Impact: Advancing Digital, Inclusive, Sustainable, and Islamic Economies, digital economic transformation has emerged as one of the primary drivers of global economic growth through the utilization of information technology, big data, cloud computing, artificial intelligence (AI), and business analytics. These developments have fundamentally transformed the way businesses operate, ranging from operational management to decision-making processes that increasingly rely on data analysis. Data-driven decision-making has been shown to improve operational efficiency, accelerate responses to market changes, and create sustainable competitive advantages (Brynjolfsson & McAfee, 2014; Bharadwaj et al., 2013).

In the context of Micro, Small, and Medium Enterprises (MSMEs), digital transformation serves as a critical foundation for fostering a more inclusive economy by expanding access to technology, information, and digital markets. Muharir (2024) explained that digital transformation contributes to

improving MSME productivity, operational efficiency, and competitiveness through the adoption of digital technologies in business activities. Furthermore, the systematic review conducted by Angraini et al. (2025) revealed that digitalization promotes innovation, market expansion, and business sustainability, although its implementation continues to face challenges, including low levels of digital literacy, limited infrastructure, and insufficient human resource readiness. Similarly, Pradana et al. (2024) found that the adoption of e-commerce, digital marketing, and information systems positively influences MSME performance, particularly by increasing sales, improving operational efficiency, and strengthening business competitiveness. These findings are supported by the OECD (2021), which emphasizes that digitalization is a key driver of productivity, innovation, and resilience among MSMEs in responding to changes in the business environment. Moreover, from the perspective of Islamic economics, the application of digital technology should not only aim to generate economic value but should also uphold the principles of amanah (trustworthiness), transparency, justice, and maslahah (public benefit) in order to create sustainable benefits for both business actors and society (Amalia et al., 2024; Widyakto et al., 2024).

This study aims to develop the Datar SmartBiz Analyzer (DSA), a digital-based platform designed to assist Micro, Small, and Medium Enterprises (MSMEs) in managing business data, conducting Break-Even Point (BEP) analysis, performing profitability simulations, and generating business reports more effectively and efficiently. Furthermore, this study seeks to support the digital transformation of MSMEs through the implementation of business analytics and data-driven decision-making to enhance productivity, competitiveness, and business sustainability (Brynjolfsson & McAfee, 2014; Bharadwaj et al., 2013; OECD, 2021). In addition, this research aims to promote the development of a digital, inclusive, sustainable, and Islamic economic ecosystem by providing technological solutions that foster transparency, efficiency, accountability, and business decision-making that benefits both entrepreneurs and society (Muharir, 2024; Amalia et al., 2024).

This study is expected to make a theoretical contribution by enriching the literature on digital transformation, business analytics, Decision Support Systems (DSS), and Break-Even Point (BEP) analysis for Micro, Small, and Medium Enterprises (MSMEs). Brynjolfsson and McAfee (2014) argued that the utilization of digital technologies and data analytics has fundamentally transformed how organizations create value and strengthen competitiveness. This argument is further supported by Bharadwaj et al. (2013), who emphasized that digital business strategy represents the integration of information technology and organizational strategy to achieve sustainable competitive advantage. Furthermore, Verhoef et al. (2021) and Nambisan et al. (2019) explained that digital transformation extends beyond technology adoption to encompass business model innovation, value creation, and organizational sustainability. Within the MSME context, the OECD (2021) stated that digitalization enhances productivity, innovation, operational efficiency, and business resilience. In addition, Muharir (2024) highlighted that digital transformation also contributes to improving transparency, accountability, and the efficiency of MSME management. Therefore, this study is expected to enrich the existing literature on the development of digital platforms based on business analytics that support the realization of a digital, inclusive, sustainable, and Islamic economy.

From a practical perspective, this study is expected to provide a valuable solution for Micro, Small, and Medium Enterprises (MSMEs) through the development of the Datar SmartBiz Analyzer (DSA), a platform designed to facilitate business data management, Break-Even Point (BEP) analysis, profitability simulations, and business report generation in a more effective and efficient manner. The OECD (2021) emphasized that the adoption of digital technologies is one of the key factors in enhancing MSME competitiveness in the digital economy. This finding is supported by Westerman et al. (2014), who argued that organizations that successfully implement digital transformation achieve superior business performance compared with those that have not fully embraced digital transformation. Furthermore, Quinton et al. (2018) explained that the application of business analytics enhances decision-making quality, operational efficiency, and business innovation. In the Indonesian context, Pratama and Ridlo (2025) demonstrated that the implementation of Business Intelligence in MSMEs enables business owners to better understand market trends, manage business data systematically, and support more accurate decision-making. Therefore, the development of the DSA is expected not only

to improve the efficiency of business management but also to strengthen a digital, inclusive, sustainable, and Islamic economic ecosystem.

This study is also expected to provide significant implications for advancing the digital transformation of MSMEs through the utilization of the Data SmartBiz Analyzer (DSA) as a data-driven decision support platform. Brynjolfsson and McAfee (2014) argued that organizations capable of optimizing digital technologies and data analytics achieve higher levels of productivity and competitiveness than those that continue to rely on conventional decision-making approaches. This argument is reinforced by Bharadwaj et al. (2013), who emphasized that digital business strategy is no longer an option but a necessity for achieving sustainable competitive advantage. Moreover, Verhoef et al. (2021), Warner and Wäger (2019), and Vial (2019) explained that the success of digital transformation depends on an organization's ability to integrate technology, business strategy, and innovation to create value.

For MSMEs, the findings of this study are expected to offer an alternative solution for improving business management by providing more accurate, efficient, and data-driven business information. Kraus et al. (2021) and Matarazzo et al. (2021) explained that digital transformation enhances MSMEs' ability to adapt to changes in the business environment, expand market access, and foster sustainable innovation. In addition, Aydiner et al. (2019) and Delen and Ram (2018) demonstrated that the application of business analytics contributes to improving decision-making quality and organizational performance through more comprehensive data analysis. Therefore, the development of the DSA is expected not only to help MSMEs improve operational efficiency and business profitability but also to support the realization of a digital, inclusive, sustainable, and Islamic economic ecosystem, as reflected in the theme From Values to Impact: Advancing Digital, Inclusive, Sustainable, and Islamic Economies.

The rapid advancement of information technology has accelerated digital transformation across various sectors, including Micro, Small, and Medium Enterprises (MSMEs). Digital transformation is no longer perceived merely as the adoption of technology but rather as a comprehensive organizational change encompassing business strategy, operational models, organizational culture, and value creation. Bharadwaj et al. (2013) argued that digital business strategy integrates information technology with organizational strategy to achieve sustainable competitive advantage. Furthermore, Vial (2019) defined digital transformation as a technology-driven process of organizational change aimed at enhancing organizational capabilities, creating new opportunities, and generating value for stakeholders. This perspective is reinforced by Verhoef et al. (2021), who emphasized that digital transformation extends beyond the digitalization of business processes to include business model innovation, customer experience enhancement, and organizational capability development.

2. Literature Review and Hypotheses Development

In an increasingly dynamic competitive environment, digital transformation has become essential for MSMEs to improve productivity and competitiveness. Warner and Wäger (2019) explained that the success of digital transformation depends on an organization's ability to develop dynamic capabilities, enabling it to adapt effectively to changes in the business environment. Similarly, Nadkarni and Prügl (2021) argued that successful digital transformation requires changes in organizational strategy, leadership, and culture to ensure that adopted technologies deliver optimal benefits. In addition, Kraus et al. (2022) demonstrated that digitalization provides MSMEs with opportunities to enhance operational efficiency, expand market access, and strengthen product and service innovation. These findings are supported by Matarazzo et al. (2021), who stated that digital transformation enables MSMEs to build stronger customer relationships through the effective utilization of digital technologies.

Digital transformation also encourages organizations to utilize data as the foundation for decision-making. In this context, business analytics has become one of the most widely adopted approaches for converting data into valuable business information. Aydiner et al. (2019) explained that the implementation of business analytics enhances decision-making quality, operational effectiveness, and organizational performance. Likewise, Delen and Ram (2018) argued that business analytics assists organizations in identifying patterns, predicting business conditions, and reducing uncertainty in the decision-making process. This view is further supported by Power et al. (2018), who identified business

analytics as a fundamental enabler of data-driven decision-making, particularly for organizations operating in the digital era.

The application of business analytics in MSMEs can be realized through the development of a Decision Support System (DSS) that enables business owners to analyze business conditions more quickly and accurately. One of the most important analytical tools for MSMEs is Break-Even Point (BEP) analysis, which determines the sales threshold at which a business neither incurs a profit nor a loss, thereby allowing entrepreneurs to identify the minimum sales volume required to avoid financial losses. The integration of business analytics, DSS, and BEP analysis is expected to improve decision-making quality while assisting MSMEs in formulating more effective business strategies. Therefore, the development of the Datar SmartBiz Analyzer (DSA) is highly relevant as a digital innovation that integrates these capabilities into a single platform to support more efficient, adaptive, and data-driven business management.

Previous studies have extensively examined digital transformation, business analytics, and decision support systems in the context of MSMEs. Bharadwaj et al. (2013) and Verhoef et al. (2021) primarily focused on digital transformation strategies and their implementation within organizations. Meanwhile, Kraus et al. (2022) and Matarazzo et al. (2021) emphasized the role of digitalization in enhancing MSME competitiveness and innovation. On the other hand, Aydiner et al. (2019), Delen and Ram (2018), and Power et al. (2018) demonstrated that business analytics significantly contributes to improving organizational decision-making quality. Nevertheless, studies integrating digital transformation, business analytics, Decision Support Systems (DSS), and Break-Even Point (BEP) analysis into a single digital platform specifically designed to support MSME management remain limited. This research gap provides the foundation for developing the Datar SmartBiz Analyzer (DSA) as an innovative solution that supports data-driven decision-making while contributing to the realization of a digital, inclusive, sustainable, and Islamic economy, in line with the conference theme From Values to Impact: Advancing Digital, Inclusive, Sustainable, and Islamic Economies.

Hypothesis Development

Based on the literature review and previous studies, digital transformation has become one of the key drivers of MSME competitiveness through the adoption of digital technologies. Bharadwaj et al. (2013) argued that digital business strategy enhances organizational competitive advantage by integrating information technology with business strategy. Furthermore, Verhoef et al. (2021) and Vial (2019) emphasized that digital transformation contributes to improving operational efficiency, fostering innovation, and creating organizational value. Therefore, the development of a digital platform such as the Datar SmartBiz Analyzer (DSA) is expected to support the digital transformation process of MSMEs.

In addition to digital transformation, business analytics plays a crucial role in improving decision-making quality. Aydiner et al. (2019) explained that the implementation of business analytics positively affects organizational performance by providing accurate and relevant information. This argument is supported by Delen and Ram (2018), who stated that business analytics enables organizations to identify opportunities, forecast business conditions, and minimize risks in the decision-making process. Likewise, Power et al. (2018) emphasized that data-driven decision-making has become a critical factor in improving organizational management effectiveness.

The Datar SmartBiz Analyzer (DSA) integrates the concepts of digital transformation, business analytics, Decision Support Systems (DSS), and Break-Even Point (BEP) analysis into a single platform designed to assist MSMEs in managing business information more effectively. Based on the theoretical framework and previous empirical findings, this study proposes the following hypotheses:

H₁: The development of the Datar SmartBiz Analyzer (DSA) supports the implementation of digital transformation in MSMEs.

H₂: The development of the Datar SmartBiz Analyzer (DSA) enhances the effectiveness of decision-making through the utilization of business analytics.

H₃: The development of the Datar SmartBiz Analyzer (DSA) assists MSMEs in conducting Break-Even Point (BEP) analysis more quickly, accurately, and efficiently.

H₄: The development of the Datar SmartBiz Analyzer (DSA) contributes to improving MSME competitiveness through data-driven business management.

H₅: The development of the Datar SmartBiz Analyzer (DSA) supports the realization of a digital, inclusive, sustainable, and Islamic economy in line with the theme From Values to Impact: Advancing Digital, Inclusive, Sustainable, and Islamic Economies.

3. Research Method

This study utilizes secondary data—specifically MSME financial reports—as a case study to evaluate the potential implementation of the Datar SmartBiz Analyzer (DSA) in supporting business decision-making. The data analyzed includes sales, fixed costs, variable costs, product selling prices, and the quantity of products sold. A summary of the financial data is presented in Figure 4.

4. Result and Discussion

The analysis results indicate that the MSME must sell approximately 276 units of the product per month to reach the break-even point (BEP). Sales exceeding this figure will generate a profit, whereas sales falling below this level could result in a loss.

Based on the analysis, the Datar SmartBiz Analyzer (DSA) integrates sales data, operational costs, and BEP analysis into a single platform, enabling MSME owners to monitor their business status in real-time. The platform also provides information on operating profit, contribution margin, and the sales targets required to maintain profitability. Furthermore, DSA offers easily understandable data visualizations, allowing MSME owners to make faster business decisions—such as determining sales strategies, improving operational cost efficiency, and planning profit targets for the upcoming period.

The secondary data analysis reveals that the financial condition of the MSME case study presents opportunities to enhance operational efficiency through the use of digital technology. Financial data shows monthly sales of IDR 25,000,000 and a net profit of IDR 6,500,000 after deducting total operational costs. This situation demonstrates that structured financial data management can assist business owners in evaluating business performance and formulating more effective strategies. These findings align with research by Vial (2019), which explains that digital transformation can improve organizational efficiency through the use of technology and integrated information management.

The Break-Even Point (BEP) analysis indicates that the MSME must achieve a minimum sales volume of 276 units to cover all operational costs. Information regarding the break-even point serves as a crucial basis for determining sales targets and business strategies. These findings support the research of Horngren et al. (2021), which states that break-even point (BEP) analysis is a vital tool for profit planning, cost control, and managerial decision-making. Furthermore, Garrison et al. (2021) explain that cost-volume-profit analysis helps companies evaluate the relationships between costs, sales volume, and profit.



Figure 1. Datar SmartBiz Analyzer (DSA) Main Dashboard Integrating Sales, Costs, and BEP Analysis

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The implementation of the Datar SmartBiz Analyzer (DSA) enables the consolidation of sales data, fixed and variable costs, and Break-Even Point (BEP) analysis results onto a single dashboard, thereby facilitating real-time business monitoring for MSME owners. This capability aligns with research by Delen and Ram (2018), which states that business analytics enhances decision-making quality by transforming data into valuable information. Research by Aydiner et al. (2019) further demonstrates that organizations effectively utilizing business analytics tend to achieve superior business performance compared to those that have not optimized data analysis. Moreover, DSA's function as a Decision Support System (DSS) allows MSME owners to obtain faster and more accurate recommendations based on their business's financial status. These findings support research by Power (2002) and Power et al. (2018), which explains that DSS improves decision quality by providing information that is relevant, timely, and easily understood by decision-makers. Overall, the research results indicate that integrating digital transformation, business analytics, Decision Support Systems, and Break-Even Point analysis within the Datar SmartBiz Analyzer (DSA) has the potential to enhance the effectiveness of MSME management. These findings also support research by Verhoef et al. (2021), which states that digital transformation not only boosts operational efficiency but also creates added value through data-driven innovation.

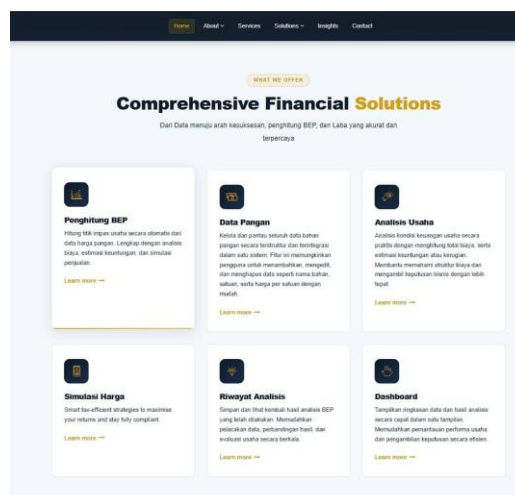


Figure 2. DSA Platform Key Features and Business Analysis Modules



Figure 3. DSA Value Proposition and Branding Overview

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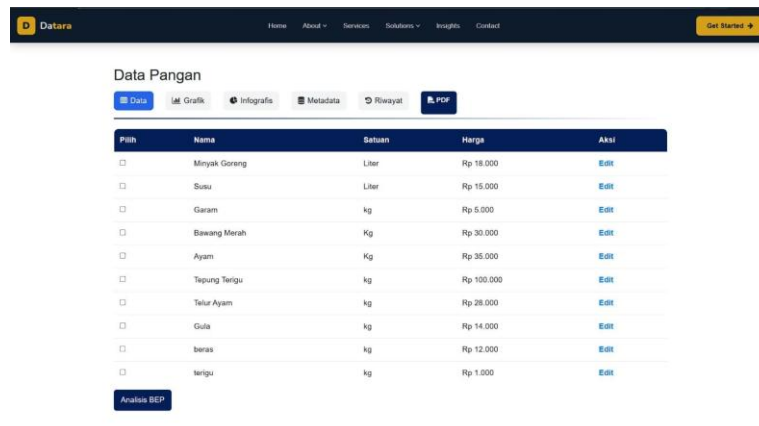


Figure 4. Food Price Data Table and BEP Analysis Interface

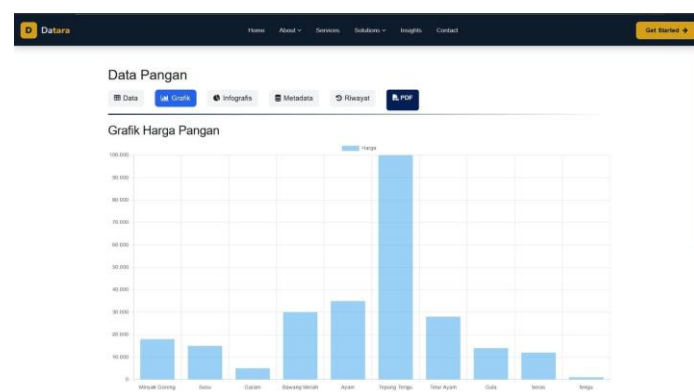


Figure 5. Food Price Trend Chart

Thus, DSA holds the potential to support MSME development toward an economy that is more digital, inclusive, and sustainable—and aligned with Islamic economic values—in accordance with the theme "From Values to Impact: Advancing Digital, Inclusive, Sustainable, and Islamic Economies."

Descriptive Statistical Analysis Results Descriptive statistics are used to provide an overview of the characteristics of the analyzed MSME data. This study utilizes secondary data obtained from an Indonesian MSME dataset, which is then analyzed using descriptive statistics, including the mean, standard deviation, minimum value, and maximum value.

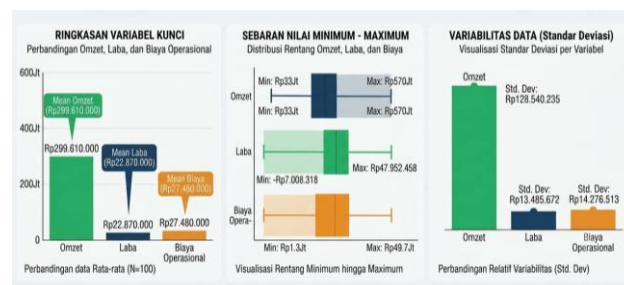


Figure 6. Statistic Descriptive (N = 100)

Based on the descriptive statistical analysis, the average turnover of MSMEs indicates that each business owner possesses a different sales capacity. The wide range of turnover figures suggests variations in business scale, spanning from micro-enterprises to more developed small businesses. This situation aligns with research indicating that digital transformation can enhance competitiveness and expand market access for MSMEs, thereby improving business performance. STIE Krakatau Journal + 1 Data on profitability reveals that the majority of MSMEs are profitable, although some businesses

still incur losses. These disparities are influenced by factors such as operational cost efficiency, marketing strategies, and the business owners' ability to leverage digital technology. Recent studies also demonstrate that digitalization positively impacts MSME productivity and profitability, provided it is supported by effective data management. UNM Journal + 1 The wide dispersion observed in operational costs indicates that operational requirements vary across MSMEs depending on the type of business, workforce size, and production capacity. Consequently, there is a need for a system that assists business owners in recording and analyzing financial data more effectively. This need drives the development of the Datar SmartBiz Analyzer (DSA), a platform featuring financial record-keeping, Break-Even Point (BEP) analysis, profitability simulations, and automated business report generation, enabling business decisions to be made based on more accurate data. Lenvari Journal + 1 Overall, the descriptive statistical analysis indicates significant variation in MSME characteristics. Therefore, the implementation of DSA is expected to assist MSME owners in utilizing business data for decision-making, improving operational efficiency, and supporting business sustainability in the era of digital transformation.

5. Conclusion

This study successfully developed the Datar SmartBiz Analyzer (DSA), a digital platform that integrates BEP analysis, profitability simulation, and automated reporting to support data-driven MSME management. The case study findings reveal a break-even point of 276 units per month, providing a clear benchmark for sales targets and cost efficiency, while addressing significant variations in turnover and operational costs across MSMEs. Theoretically, this research enriches the literature on digital transformation and business analytics for the MSME sector. Practically, DSA enhances real-time performance monitoring, operational efficiency, and business competitiveness, while also promoting transparency and fairness aligned with Islamic economic principles. However, the study is limited by its reliance on secondary data from a single case. Future research should validate DSA across diverse sectors and integrate AI-driven predictive analytics to further expand its capabilities.

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