

## **COMPARISON OF THE FINANCIAL PERFORMANCE OF DIGITAL BANKS AND CONVENTIONAL BANKS USING THE CAMELS METHOD**

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### **ABSTRACT**

*This study aims to compare the financial performance of digital banks and conventional banks in Indonesia using the CAMELS method. A quantitative descriptive design with a pair-matching sample approach was employed. Ten banks (5 digital banks and 5 conventional banks) were selected based on asset equivalence in 2023. Secondary data from financial statements were analyzed using Mann-Whitney U and Wilcoxon statistical tests. The results reveal significant differences in financial performance between digital banks and conventional banks ( $p < 0.05$ ). Conventional banks recorded higher averages in Capital Adequacy Ratio (CAR) and Return on Assets (ROA), reflecting better operational efficiency and financial stability. In contrast, digital banks exhibited higher operational costs (BOPO) and negative profitability, indicating challenges in managing operational efficiency. CAMELS scores demonstrated fluctuations in digital banks, whereas conventional banks showed greater stability over the 2020–2023 period. In-depth analysis suggests that digital banks face higher operational risks due to intensive technological transformation, despite their significant potential for long-term service efficiency. Meanwhile, conventional banks with established business models excel in risk management and operational stability. This research contributes to banking literature by highlighting the importance of risk management strategies and operational efficiency tailored to the unique characteristics of each bank type.*

**Keywords :** *Bank Health, CAMELS, Digital Banking, Mann-Whitney U Test*

### **ABSTRAK**

Penelitian ini bertujuan untuk menganalisis perbandingan kinerja keuangan antara bank digital dan bank konvensional di Indonesia dengan menggunakan metode CAMELS. Studi ini menerapkan pendekatan deskriptif kuantitatif dengan teknik pair-matching sample. Sebanyak sepuluh bank, terdiri dari lima bank digital dan lima bank konvensional, dipilih berdasarkan kesetaraan aset pada tahun 2023. Data sekunder yang digunakan berupa laporan keuangan dianalisis melalui uji statistik Mann-Whitney U dan Wilcoxon. Hasil penelitian mengungkapkan adanya perbedaan signifikan dalam kinerja keuangan kedua jenis bank ( $p < 0,05$ ). Bank konvensional menunjukkan rata-rata Capital Adequacy Ratio (CAR) dan Return on Asset (ROA) yang lebih tinggi, mencerminkan tingkat efisiensi operasional dan stabilitas keuangan yang lebih baik. Sebaliknya, bank digital mengalami biaya operasional yang lebih tinggi (BOPO) serta profitabilitas negatif, yang mengindikasikan tantangan dalam efisiensi pengelolaan operasional. Skor CAMELS menunjukkan pola fluktuatif pada bank digital, sedangkan bank konvensional cenderung lebih stabil sepanjang periode 2020-2023. Analisis lebih lanjut mengungkapkan bahwa bank digital menghadapi risiko operasional yang lebih besar akibat transformasi teknologi yang masif, meskipun memiliki potensi dalam meningkatkan efisiensi layanan di masa depan. Sementara itu, bank konvensional yang mengandalkan model bisnis yang telah mapan lebih unggul dalam mengelola risiko dan mempertahankan stabilitas operasional. Penelitian ini berkontribusi pada literatur perbankan dengan menekankan pentingnya strategi manajemen risiko serta efisiensi operasional yang disesuaikan dengan karakteristik masing-masing jenis bank.

**Kata Kunci :** *Bank Digital, CAMELS, Kesehatan Bank, Uji Mann-Whitney U Test*

## INTRODUCTION

### Rationale

The rapid advancement of digital technology has significantly impacted various sectors, including banking. Digital banks have emerged as an innovative alternative to conventional banks by providing more efficient, flexible, and easily accessible services through digital platforms. However, despite the substantial transformation potential that digital banks offer, their financial performance—being relatively new compared to conventional banks—remains an area that requires further examination. Therefore, evaluating and comparing the financial performance of these two types of banks is essential.

The CAMELS method, which assesses Capital, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk, is widely used to evaluate the financial health of banks. This study aims to compare the financial performance of digital and conventional banks using the CAMELS method to provide a more comprehensive understanding of their financial stability and operational sustainability amid the dynamic changes in the banking industry.

The transformation of banking services from traditional to digital has the potential to reduce management and operational costs. As the number of customers visiting physical bank branches decreases, the demand for face-to-face customer service and teller interactions declines as well. Consequently, banks are planning to close some of their physical offices, from cash offices to branch offices, as part of cost-cutting measures. Nevertheless, both digital and conventional banks must maintain operational stability.

The development of information and communication technology, particularly in the digital realm, has brought about a paradigm shift across various sectors, including finance. The increasing adoption of digital banking solutions has propelled the banking sector into a new era—digital banking (Mbama, 2018). This transformation has become increasingly prevalent due to financial innovation and the evolution of banking practices. Since the COVID-19 pandemic, changes in consumer behavior have further accelerated the shift

toward digital banking services (Li, Zhang, Feng, & Wang, 2022). Digital services now facilitate customer interactions from the very beginning of their banking relationship, encompassing account opening, financial transactions, and account closure—all conducted digitally.

Financial reports generally serve to provide information regarding a company's total assets and liabilities (Pratikto, 2021). These reports act as a crucial communication tool between financial institutions and their stakeholders, reflecting the company's financial health and performance. In the banking sector, financial reports serve as a key instrument for assessing a bank's overall stability (Prihatin, 2020). Credit risk has a significantly negative impact on bank stability, indicating that an increase in credit risk can weaken a bank's financial health. Likewise, liquidity risk negatively affects banking stability (Ghenimi, 2017). Short- and medium-term investors often prioritize short-term financial conditions and a company's ability to distribute dividends (Listiawati, 2020).

The financial health of a bank can be evaluated using various indicators, one of which is its financial reports (Novriansyah, 2020). Assessing a bank's health aims to provide an accurate picture of its actual condition, whether it is categorized as healthy, less healthy, or unhealthy (Wiwik, 2018). One common approach to analyzing a bank's financial performance is the CAMELS method, which stands for Capital Adequacy, Asset Quality, Management Quality, Earnings, Liquidity, and Sensitivity to Market Risk. This method is widely applied in the banking industry to measure the financial stability of financial institutions. This research seeks to offer a more in-depth understanding of the financial performance of both digital and conventional banks through the CAMELS methodology. By incorporating both quantitative and qualitative data, this analysis aims to identify key differences and provide valuable insights for stakeholders in making well-informed decisions regarding investments and the future development of the banking sector.

## LITERATURE REVIEW

The rapid advancement of digital technology has significantly influenced the banking sector, leading to the emergence of digital banks as an alternative to conventional banking. Digital banks offer greater efficiency, flexibility, and accessibility through digital platforms (Mbama, 2018). However, despite their innovative approach, the financial performance of digital banks, which are relatively new compared to conventional banks, remains a subject that requires further study (Li, Zhang, Feng, & Wang, 2022). As a result, evaluating and comparing the financial performance of these two banking models is crucial.

One widely accepted approach for assessing bank financial health is the CAMELS method, which evaluates Capital Adequacy, Asset Quality, Management Quality, Earnings, Liquidity, and Sensitivity to Market Risk. This methodology is extensively utilized in the banking industry to determine the financial stability of financial institutions (Novriansyah, 2020). Through the CAMELS framework, researchers can gain a more comprehensive understanding of the financial sustainability and operational efficiency of both digital and conventional banks in an era of rapid transformation.

The shift from traditional to digital banking services has the potential to reduce management and operational costs. With fewer customers visiting physical branches, the demand for face-to-face customer service and teller interactions has declined. Consequently, banks have begun closing physical offices, including cash offices and branch offices, as part of their cost-cutting strategies. However, both digital and conventional banks must maintain operational stability to ensure sustainable growth (Pratikto, 2021).

The increasing reliance on digital banking services has been further accelerated by changes in consumer behavior, especially during the COVID-19 pandemic. As digital banking adoption continues to rise, financial institutions are expected to optimize their services, from account opening to transaction processing and account closure, through digital means (Li et al., 2022). This trend signifies a broader shift in the financial sector driven by technological advancements and financial innovation.

Financial reports serve as a crucial tool for evaluating a bank's financial condition. These reports provide insights into a company's total assets and liabilities, acting as a key communication medium between financial institutions and stakeholders (Prihatin, 2020). Furthermore, financial stability is influenced by various risk factors, including credit risk and liquidity risk. Studies indicate that an increase in credit risk negatively impacts bank stability, while liquidity risk similarly poses significant challenges to financial sustainability (Ghenimi, 2017). Investors, particularly those with short- and medium-term investment goals, tend to focus on a bank's short-term financial health and its ability to distribute dividends (Listiwati, 2020).

Given these considerations, analyzing and comparing the financial performance of digital and conventional banks is essential. By utilizing both quantitative and qualitative data, research on this topic can highlight significant differences between the two banking models and provide valuable insights for stakeholders in making informed investment and policy decisions regarding the banking sector's future development.

## RESEARCH METHODOLOGY

### Research Design

This study applies the CAMELS method—comprising Capital Adequacy, Asset Quality, Management Quality, Earnings, Liquidity, and Sensitivity to Market Risk—to evaluate the financial health of banks. The analysis involves comparing key financial ratios from the five CAMELS components between digital and conventional banks over the research period. To determine significant differences in financial performance between the two types of banks, statistical tests such as the Mann-Whitney U and Wilcoxon W are employed.

### Sample and Population

The study population includes all banks in Indonesia, both digital and conventional, that are listed on the Indonesia Stock Exchange (IDX). As of the research period, five digital banks are listed on the IDX. The sampling technique used follows a pair-matching approach, where samples are grouped into two categories: digital banks and conventional banks. Each digital bank in the sample is matched with a conventional bank that has

similar characteristics, with total assets as the primary matching criterion. This ensures comparability between the two groups, isolating the impact of banking model differences. The final sample consists of 10 banking institutions—5 digital banks and 5

conventional banks—selected based on their total assets as recorded in 2023.

**Table 1. Asset Comparison (in millions of rupiah)**

Digital Banks		Conventional Banks	
Bank Name	Assets	Bank Name	Assets
Allo Bank	Rp. 11.058,-	Bank Jasa Jakarta	Rp. 11.212,-
Bank Amar	Rp. 4.379,-	Krom Bank	Rp. 3.638,-
Bank Jago	Rp. 21.295,-	Bank Nobu	Rp. 26.622,-
Bank Neo Commerce	Rp. 18.169,-	Bank IBK	Rp. 19.377,-
Oke Bank Indonesia	Rp. 11.075,-	Bank Bumi Arta	Rp. 7.991,-

The analysis results displayed in Table 2 suggest that there is no statistically significant difference in performance between digital banks and conventional banks based on the CAMELS evaluation. The statistical tests conducted using the Mann-Whitney U and

Wilcoxon W methods yield high p-values of 0.917 and 1.000, respectively. These values indicate that any observed variations in CAMELS scores between the two banking groups are likely attributable to random chance and are not statistically significant.

**Table 2. Results of the Pair-Matching Test**

Test Statistics <sup>a</sup>	
Mann-Whitney U	12,000
Wilcoxon W	27,000
Z	-0,104
Asymp. Sig. (2-tailed)	0,917
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>

Source: Data obtained from IBM SPSS Statistics 27

#### Data Collection Techniques

The data collection technique in this journal is documentation study. The researcher collects secondary data in the form of financial reports (balance sheets and income statements) from the ten banks that are the research samples. This data is obtained from public reports issued by each bank.

#### Research Variables

Research variables refer to the aspects that are measured and compared to analyze the financial performance of digital and conventional banks. The variables in this

research are the elements that make up the CAMELS score. In other words, the research variables are the five main components of the CAMELS analysis, each measured through various financial ratios.

##### 1. Capital

To assess the strength of a bank's capitalization, the Capital Adequacy Ratio (CAR) can be used. The formula for calculating CAR is specified in the applicable regulations, in accordance with Bank Indonesia Circular Letter Number 6-10-PBI-2004:

$$CAR = \frac{\text{bank capital}}{ATMR} \times 100\%$$

##### 2. Asset Quality

The quality of a bank's assets is assessed based on the types of assets it holds, in accordance with Bank Indonesia regulations.

The comparison of productive assets classified alongside other productive assets, as stated in the periodic balance sheet reported to Bank Indonesia, can be used to evaluate asset quality.

The Non-Performing Financing (NPF) ratio helps measure the ability of productive assets to cover problematic loans.

$$NPF = \frac{\text{Financing (kl, d, m)}}{\text{Total Financing}} \times 100\%$$

1) *Management*

The management aspect is reflected in the ratio that measures the overall profitability (profit) of the bank relative

to its operating income (Sunardi, 2016). This ratio can be formulated based on Bank Indonesia Circular Letter No. 12/11/DPNP:

$$NPM = \frac{\text{net income}}{\text{operating income}} \times 100\%$$

According to Setiyanti (2019), Net Profit Margin is the comparison between net income and the sales generated by the company. This measurement will show how much net profit can be generated from the company's sales levels.

2) *Earning*

The bank's ability to enhance its profits and operational efficiency is reflected in the increase in profitability and cost efficiency. The health of a bank is characterized by continuously increasing profitability and operational costs that are kept to a minimum. This

can be measured through the return on assets (ROA) ratio and the comparison of operating costs to operating income (BOPO).

a) *Return On Asset (ROA)*

ROA provides an overview of the company's efficiency in generating profit from the financial resources invested. This metric allows management to assess financial and operational performance (Vinayagamoorthi Vasanth, 2015)

$$ROA = \frac{\text{Profit before tax}}{\text{Total assets}}$$

b) *Operating Expenses to Operating Income Ratio (BOPO)*

The Operating Expenses to Operating Income Ratio (BOPO) is calculated to

determine the proportion of operating expenses to operating income, thereby providing an indication of operational efficiency.

$$BOPO = \frac{\text{operating expenses}}{\text{operating income}}$$

3) *Liquidity:*

A bank is considered liquid if it is able to settle all of its financial obligations, particularly savings, demand deposits, and time deposits when requested. In addition, the bank must also be able to fulfill all qualified credit applications

for financing. One indicator used to assess the liquidity of a bank is the Loan to Deposit Ratio (LDR). The formula for LDR, according to Bank Indonesia Circular Letter No. 6/23/DPNP of 2004, is as follows:

$$LDR = \frac{\text{Total Financing}}{\text{Total Deposits} + \text{Equity}} \times 100\%$$

4) *Sensitivity to market risk*

The measure of how much the value of an asset or portfolio can change in response to market price fluctuations encompasses the risks associated with changes in the financial markets, such as changes in interest rates, currency exchange rates, and commodity prices. In the context of financial and investment institutions, sensitivity to market risk is often evaluated using various tools and indicators, such as :

- a) Duration: Used to measure the extent to which the price of a bond will change due to changes in interest rates
- b) Beta: Measures the sensitivity of a stock or portfolio to the overall movements of the stock market.
- c) Value at Risk (VaR): An estimate of the potential maximum loss in a portfolio over a certain period for a specified confidence level.

Market risk management aims to identify, analyze, and minimize potential losses caused by volatility in the market.

*Data Analysis Techniques*

1. Comparative Descriptive Analysis: The collected data is analyzed descriptively to describe the characteristics of the financial performance of digital and conventional banks. Then, a comparison is made between the two types of banks to identify differences and similarities.

**A. Descriptive Statistics**

2. CAMELS Analysis: Financial report data is used to calculate various financial ratios that represent the five main aspects of the CAMELS framework (Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity). The CAMELS scores are then used as key indicators to measure the performance and financial health of each bank.
3. Mann-Whitney U and Wilcoxon Tests: Since the data may not be normally distributed, the researcher uses the non-parametric Mann-Whitney U and Wilcoxon tests to examine significant differences between the financial performance of digital and conventional banks. These tests compare the aggregate CAMELS scores of the two groups of banks.

**DISCUSSION**

This study aims to examine and compare the financial performance of digital and conventional banks in Indonesia, with a focus on evaluating their financial health and overall stability. The assessment is carried out using the CAMELS method over the 2020–2023 period, applying standardized calculation formulas. Through this approach, the analysis offers a more comprehensive understanding of the financial condition of both banking models within a wider context.

**Table 3. Descriptive Data of the Sample**

<b>Digital Banks</b>					
	N	Min.	Max	Mean	Std. Dev
CAR	20	19,61	169,92	63,43	35,46
NPF	20	0,00	9,17	2,98	2,55
NPM	20	-210,46	59,55	-11,38	61,81
ROA	20	-8,74	5,20	-0,34	3,85
BOPO	20	52,35	261,23	107,97	50,03
FDR	20	38,68	89,59	61,39	13,36
<b>Conventional Banks</b>					
	N	Min.	Max	Mean	Std. Dev
CAR	20	18,54	283,88	81,83	74,35
NPF	20	0,16	5,15	2,05	1,54
NPM	20	-39,86	53,55	13,01	19,46

ROA	20	-1,75	4,73	1,10	1,45
BOPO	20	34,13	136,18	83,53	22,69
FDR	20	23,02	74,82	52,11	15,54
Valid N (Listwise)	20				

*Source: Data obtained from IBM SPSS Statistics 27*

The descriptive analysis highlights notable differences in the financial characteristics of conventional and digital banks in Indonesia. On average, conventional banks demonstrate a higher Capital Adequacy Ratio (CAR) of 81.83 compared to 63.43 for digital banks, indicating stronger capital adequacy. However, digital banks report a lower Non-Performing Financing (NPF) ratio of 2.98 compared to 2.06 for conventional banks, suggesting relatively better asset quality.

The most significant disparity is observed in Net Profit Margin (NPM) and Return on Assets (ROA). Conventional banks achieve a positive average NPM of 13.01, whereas digital banks record a negative NPM of -11.38, reflecting superior profitability for

conventional banks. A similar pattern is evident in ROA, where conventional banks report a positive average of 1.10, while digital banks have a negative ROA of -0.34, indicating that conventional banks have been more effective in generating profits during the study period.

In terms of operational efficiency, the Operating Expenses to Operating Income (BOPO) ratio is notably higher for digital banks at 107.97 compared to 83.53 for conventional banks, suggesting that digital banks incur higher operational costs. Lastly, the Financing to Deposit Ratio (FDR) reveals that digital banks have a higher average FDR of 61.39 compared to 52.10 for conventional banks, which may indicate differences in their funding strategies.

## B. CAMELS Assessment

**Table 4. CAMELS Scores of the Research Sample**

Digital Banks				
Bank Name	2020	2021	2022	2023
PT Allo Bank Indonesia Tbk	76	88	83	82
PT Bank Amar Indonesia Tbk	60	59	59	61
PT Bank Jago Tbk	70	74	68	73
PT Bank Neo Commerce Tbk	66	68	66	64
PT Bank Oke Indonesia Tbk	67	69	69	67
Average	68	72	69	69
Conventional Banks				
Bank Name	2020	2021	2022	2023
PT Bank Jasa Jakarta	76	77	77	74
PT Krom Bank Indonesia Tbk	83	88	83	75
PT Bank National Nobu Tbk	77	77	77	77
PT Bank IBK Indonesia Tbk	61	69	76	77
PT Bank Bumi Arta Tbk	72	72	69	69
Average	74	77	76	74

### Financial Performance Analysis Based on CAMELS Scores (2020–2023)

Table 4 highlights the differences in financial performance trends between digital and conventional banks based on CAMELS scores over the 2020–2023 period. Digital

banks exhibited fluctuating CAMELS scores, with the highest average recorded in 2021 at 72, which then gradually declined to 69 by 2023. Among digital banks, **PT Allo Bank Indonesia Tbk** consistently outperformed the average each year, while **PT Bank Amar Indonesia**

**Tbk** had the lowest scores, despite showing slight improvement in 2023. **PT Bank Jago Tbk** displayed a fluctuating trend, experiencing a score increase in 2023, whereas **PT Bank Neo Commerce Tbk** and **PT Bank Oke Indonesia Tbk** maintained relatively stable scores with minor declines in recent years.

Conversely, conventional banks demonstrated greater stability in their average CAMELS scores compared to digital banks, despite a slight decrease in 2023. **PT Krom Bank Indonesia Tbk** achieved the highest scores among all samples, maintaining consistently strong performance above the average. **PT Bank Jasa Jakarta** and **PT Bank National Nobu Tbk** also showed steady performance with minimal fluctuations. Meanwhile, **PT Bank IBK Indonesia Tbk** recorded the lowest CAMELS score among

conventional banks but experienced a significant improvement in 2023. Overall, conventional banks exhibited more stable financial performance compared to digital banks in terms of CAMELS scores. This suggests that conventional banks may have more well-established risk management systems, whereas digital banks continue to face challenges in maintaining financial stability amid rapid digital transformation.

### C. Test Statistics

The analysis utilized the Mann-Whitney U and Wilcoxon tests to examine statistically significant differences in the average CAMELS performance evaluations between digital and conventional banks. The application of these statistical methods produced the following results:

**Table 5. Results of the Difference Test**

<i>Test Statistics<sup>a</sup></i>	
	<b>Nilai</b>
Mann-Whitney U	0,000
Wilcoxon W	10,000
Z	-2,309
Asymp. Sig. (2-tailed)	0,021
Exact Sig. [2*(1-tailed Sig.)]	.029 <sup>b</sup>

The results of the CAMELS score difference test using the Mann-Whitney test reveal a statistically significant disparity in financial performance between digital and conventional banks. This is demonstrated by an Asymp. Sig. (2-tailed) value of 0.021, which is lower than the 0.05 significance threshold. Consequently, it can be inferred that the financial performance of these two banking types differs significantly. Additionally, the Z value of -2.309 further reinforces the notion that the distribution of CAMELS scores between digital and conventional banks is not identical, highlighting variations in the factors affecting their financial health.

These differences can be attributed to the distinct characteristics of each bank type. Digital banks, which heavily depend on technology and innovation, often

encounter challenges in maintaining financial stability due to high technology development costs, fluctuations in customer acquisition, and increased operational risks. In contrast, conventional banks, with their well-established operational structures and risk management frameworks, tend to demonstrate greater financial stability. These findings hold critical implications for regulators and bank executives in formulating policies and risk mitigation strategies that align with the unique operational nature of each banking model.

Furthermore, the significant variance in CAMELS scores suggests that digital and conventional banks adopt different approaches in managing capital, asset quality, management, earnings, liquidity, and sensitivity to market risk. Digital banks



prioritize technological advancements to enhance customer experience; however, this often results in heightened operational risks and substantial investment requirements, affecting key financial metrics such as capital adequacy and profitability. On the other hand, conventional banks benefit from a stable customer base and a well-established business model, offering advantages in managing asset quality and liquidity. These findings emphasize the need for financial management strategies tailored to the specific characteristics of each banking type to ensure long-term financial health and competitiveness.

## CONCLUSION

The research findings reveal a significant difference between digital and conventional banks. On average, the financial performance of both types falls within the 'fairly healthy' category, indicating relative stability. However, this classification also suggests that both banking models have areas for improvement in certain performance aspects. While both demonstrate stability, conventional banks outperform digital banks, particularly in terms of operational efficiency and risk management.

This study also emphasizes the growing importance of digital transformation, which has become a key focus for many banks. Digitalization requires substantial investments in technology and infrastructure, which may temporarily impact financial ratios such as the Operating Expenses to Operating Income ratio (BOPO). However, digital banks have considerable potential to expand their customer base if they can provide more efficient and innovative services. To remain competitive against conventional banks with well-established business models, digital banks must continuously innovate and strengthen their risk management strategies.

A key limitation of this study is its reliance on the CAMELS method as the sole measure of bank health. This approach may not fully capture all aspects of bank performance, such as service quality and customer satisfaction. A more comprehensive evaluation would require incorporating additional factors to provide a more holistic view of bank performance. Digital banks should prioritize

cost management and operational efficiency to ensure sustainable growth. Regular monitoring of CAMELS indicators can serve as an effective tool for assessing their market position and shaping appropriate strategic decisions. The findings of this research offer valuable insights for the banking industry, particularly in navigating the rapid evolution of the digital banking sector.

## REFERENCES

- Asmara, Y. (2021). Perlindungan hukum atas hilangnya dana nasabah di rekening bank menurut hukum positif di Indonesia. *Glosains: Jurnal Sains Global Indonesia*, 2(1), 41-48.  
<https://doi.org/10.59784/glosains.v2i1.14>
- Bank Indonesia. (2004, May 31). Sistem penilaian tingkat kesehatan bank umum. Retrieved from <https://www.bi.go.id/id/archive/arsip-peraturan/Pages/ketentuan%20perbankan.aspx>
- Bank Indonesia. (2021, February 26). *Bank Indonesia*. Retrieved from [https://www.bi.go.id/id/publikasi/peraturan/Pages/PBI\\_230221.aspx](https://www.bi.go.id/id/publikasi/peraturan/Pages/PBI_230221.aspx)
- Ghenimi, A. C. (2017). The effect of liquidity risk and credit risk on bank stability: Evidence from MENA region. *Borsa Istanbul Review*, 17(4), 238-248.
- Li, G., Zhang, R., Feng, S., & Wang, Y. (2022). Digital finance and sustainable development: Evidence from environmental inequality in China. *Business Strategy and the Environment*, 31, 3574-3594.
- Listiawati, D. K. (2020). Analisis kinerja keuangan dengan menggunakan metode CAMEL pada bank buku 4. *Jurnal Ekonomi Manajemen Akuntansi*, 5. Retrieved from <https://ema-jurnal.unmerpas.ac.id/>
- Marlina, A., & [Co-author]. (2018). Digitalisasi bank terhadap peningkatan pelayanan dan kepuasan nasabah bank. *Jurnal Ilmiah Inovator*, Maret, 14-34.
- Mbama, C. (2018). Digital banking, customer experience, and bank financial performance: UK customer perceptions. *International Journal of Bank Marketing*, 36(2), 230-255.
- Novriansyah, O. S. (2020). Analisis laporan keuangan dengan menggunakan metode

- CAMEL untuk menilai kesehatan bank konvensional BUMN (BRI, Mandiri, dan BNI46) pada Bursa Efek Indonesia (BEI) tahun 2015. *Jurnal Ekonomi*, 10(1). Retrieved from <https://www.ejournal.lembahdempo.ac.id/index.php/STIE-JE>
- Pratikto, M. I. (2021). Analisis tingkat kesehatan laporan keuangan pada PT Bank Syariah Mandiri Tbk dengan metode CAMEL periode 2016-2020. *Journal of Economics*, 6(1). Retrieved from <http://jurnalfebi.uninsby.ac.id/index.php/oje>
- Pratiwi, D., & [Co-author]. (2018). Pengaruh penerapan manajemen risiko terhadap kinerja keuangan industri perbankan. *Jurnal Akuntansi Bisnis*, 10(1), 73-93. <https://doi.org/10.30813/jab.v10i1.988>
- Prihatin, K. S. (2020). Analisis pengukuran tingkat kesehatan perbankan syariah dengan menggunakan metode CAMEL pada PT Bank Mandiri Syariah Tbk. *Jurnal Pendidikan, Akuntansi, dan Keuangan Universitas Banten Jaya*, 4(1). Retrieved from <https://ejournal.lppm.unbaja.ac.id/>
- Setiyanti, S. W. (2019). Pengaruh probabilitas, ukuran perusahaan, struktur aktiva, dan pertumbuhan terhadap struktur modal pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2012-2016. *Jurnal STIE Semarang*, 11(2), Edisi Juni, ISSN: 2085-5656, E-ISSN: 2232-7826.
- Sunardi, N., & [Co-author]. (2016). Analisis CAMEL dalam menilai tingkat kesehatan bank (Studi kasus pada subsektor perbankan yang terdaftar di BEI periode 2011-2015). *Jurnal Ilmiah Ilmu Manajemen*, 44-58.
- Vasanth, V., & [Co-author]. (2015). Nexus between profitability and environmental performance of Indian firms: An analysis with Granger causality. *International Journal of Energy Economics and Policy*, 5(2), 433-439.
- Wiwik, W., & [Co-author]. (2018). Analisis komparatif tingkat kesehatan bank dengan metode CAMELS di ASEAN (Studi pada bank umum Indonesia, Malaysia, Singapura, Thailand, dan Filipina tahun 2012-2016). *Jurnal Ilmu Manajemen*, 6(4). Retrieved from <https://jurnalmahasiswa.unesa.ac.id/>