JHSS (Journal of Humanities and Social Studies)
https://journal.unpak.ac.id/index.php/jhss
Volume 09, Number 01, Page 331-335
e-ISSN: 2598-120X; p-ISSN: 2598-117X

DIGITAL TRANSFORMATION, CAPITAL STRUCTURE, AND LIQUIDITY: IMPLICATIONS FOR RETURN ON ASSETS (ROA)

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Article history: *received 05 May 2025; revised 22 May 2025; accepted 12 June 2025* *DOI: https://doi.org/10.33751/jhss.v9i1.12220*

Abstract. This study aims to empirically analyze the implications of digital transformation, capital structure, and liquidity on corporate financial performance. Digitalization in this study is measured through the proportion of intangible assets in the form of software, capital structure is measured through Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER), liquidity is represented by current ratio and quick ratio, while financial performance is represented by Return on Assets (ROA) ratio. The research method used is quantitative research with the help of SPSS 25 statistical software. The population is technology sector companies listed on the IDX with a total of 47 companies. The sample amounted to 17 companies, with the sampling method being purposive sampling. Data is taken from the company's financial statements for 2020-2024. The results showed that simultaneously, the variables digital transformation, DAR, DER, current ratio, and quick ratio had a significant effect on ROA**.** Partially**,** digital transformation and quick ratio have a significant positive effect on ROA, while DAR, DER, and current ratio show a significant negative effect on ROA.

Keywords: digital transformation; capital structure; liquidity; profitability

I. INTRODUCTION

In a modern business landscape characterized by globalization and high competitive intensity, digital transformation has become one of the main pillars in improving operational efficiency and corporate competitiveness. One concrete form of the digitalization process is investment in intangible assets, especially software that supports information systems, process automation, and the development of technology-based products and services. This investment reflects the company's commitment to adopting digital technology to strengthen internal capabilities and create added value.

The application of digital technologies such as the Internet of Things, Big Data, Cloud Computing, Blockchain, and Robotic Operations will facilitate business processes and affect the company's business dynamics [1]. Companies that adopt digital technology tend to have a better ability to innovate and improve operational efficiency. Therefore, digital competitiveness needs to be a priority, especially in terms of organizational readiness and external support, in order to achieve long-term resilience and success amid the dynamics of the evolving digital landscape [2].

However, digitization in business processes does not always give positive results [1]. Digitalization is not necessarily able to create a sustainable competitive advantage for the company. The costs arising from the digitization process can exceed the expected potential benefits [3], especially in industries where digitization does not play an important role in increasing the customer base [4]. This condition can actually burden the company with high capital expenditures without providing commensurate added value.

Financial performance is a key indicator in assessing the company's operational and managerial success. Profitability ratios such as Return on Assets (ROA) are widely used to reflect the company's efficiency in generating profits from assets owned by shareholders. Company management needs to be accountable for the results of asset and capital management to company owners, so that the achievement of financial performance becomes the main parameter in assessing the effectiveness of strategic policies, including digitalization.

The adoption of digital technology in the business world demands careful financial readiness, considering that this transformation often requires a large amount of investment. The high cost of digital implementation encourages companies to adjust their funding structure, especially through increased leverage as reflected in the Debt to Asset (DAR) and Debt to Equity (DER) ratios. The decision to choose funding sources either through debt or equity will have an impact on the level of risk and return of the company.

In the context of digitalization, external financing through debt is a common choice to fund technology investments, which in turn increases DAR and DER values. This reliance on debt can reduce financial flexibility and increase exposure to financial risk in the long run. The use of financial leverage can have a variety of impacts on a company's profitability, both positive and negative [5]. Therefore, companies need to

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carefully consider the level of leverage used so as not to cause excessive financial risk.

In addition, the liquidity aspect is also an important variable that deserves further analysis. Current ratio and quick ratio are the main indicators to measure the company's liquidity level. The current ratio reflects the company's ability to meet its short-term obligations using its current assets. According to [6], a high current ratio indicates that the company has enough current assets to cover its current liabilities, which in turn can increase investor and creditor confidence. Meanwhile, the quick ratio, also known as the acid-test ratio, measures a company's liquidity by excluding inventory from current assets, thus providing a more conservative picture of liquidity capability [7].

II. RESEARCH METHODS

This research uses a quantitative approach. The object of research is focused on companies engaged in the technology sector and have been officially listed on the Indonesia Stock Exchange (IDX). The selection of this sector is based on its characteristics that have a high level of digital technology adoption and a significant proportion of investment in intangible assets, especially software. These characteristics are considered to substantially affect the quality of financial statements.

The population of this study were 47 technology sector companies listed on the IDX. The research sample was selected using purposive sampling technique, which is based on the criteria that companies consistently record intangible assets in the form of software in the statement of financial position during the period 2020 to 2024, and have complete data for all variables studied. From the results of data screening, 17 companies were obtained as samples that met the criteria. The data used is secondary data obtained from the annual reports of each company, which can be accessed publicly through the official IDX website (www.idx.co.id). This data includes information related to the value of intangible assets, capital structure, liquidity ratios, and financial performance indicators.

III. RESULTS AND DISCUSSION

Table 1 Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		13
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.05381437
Most Extreme Differences	Absolute	.163
	Positive	.163
	Negative	-.142
Test Statistic		.163
Asymp. Sig. (2-tailed)		.200[c,d]

Source: SPSS 25 Data Processing

Asymp. Sig. (2-tailed) of 0.200> 0.05**,** meaning that the residual data can be considered normally distributed**.**

Table 2 Autocorrelation Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993[a]	.985	.975	.07046	2.077

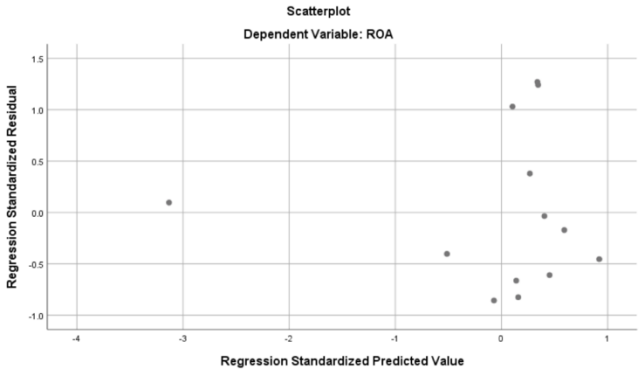
a. Predictors: (Constant), CR, TD, DER, DAR, QR

b. Dependent Variable: ROA

Source: SPSS 25 Data Processing

The result of the autocorrelation test based on the Durbin-Watson value is 2.077, because the Durbin-Watson value is in the range of 1.5 to 2.5, it can be concluded that there is no autocorrelation in this regression model.

Figure 1 Heteroscedasticity Test Results



Source: SPSS 25 Data Processing

The results of the heteroscedasticity test based on the scatterplot show that the residual points are randomly scattered around the zero horizontal line without forming a certain pattern such as conical or widened. This indicates that the residual variance is constant (homoscedastic). Thus, it can be concluded that the regression model does not experience heteroscedasticity problems and the classical assumptions regarding the distribution of residuals have been met.

Table 3 Coefficient of Determination Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993[a]	.985	.975	.07046	2.077

a. Predictors: (Constant), CR, TD, DER, DAR, QR

b. Dependent Variable: ROA

Source: SPSS 25 Data Processing

The R value (Correlation Coefficient) is 0.993, this indicates a very strong relationship between the independent variables (CR, TD, DER, DAR, QR) and the dependent variable ROA. The R Square value (Coefficient of Determination) is 0.985. This means that 98.5% of the variation in ROA can be explained by the five independent variables in this model. The rest (1.5%) is explained by other factors outside the model.

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Table 4 F Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.325	5	.465	93.682	.000[b]
	Residual	.035	7	.005		
	Total	2.360	12			

a. Dependent Variable: ROA

b. Predictors: (Constant), CR, TD, DER, DAR, QR

Source: SPSS 25 Data Processing

The significance value of 0.000 <0.05 indicates that the regression model is statistically significant**.** This means that together the independent variables (CR, TD, DER, DAR, QR) **have a** significant **effect** on the dependent variable (ROA)**.**

Table 5 T-test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.494	.090		-5.495	.001
	TD	.519	.038	.879	13.807	.000
	DAR	-2.711	.336	-1.109	-8.068	.000
	QR	4.181	.374	3.386	11.180	.000
	DER	-1.895	.202	-1.208	-9.370	.000
	CR	-1.791	.501	-1.103	-3.577	.009

a. Dependent Variable: ROA

Source: SPSS 25 Data Processing

1. Digital Transformation (TD) has a significant positive effect on ROA with a coefficient of 0.519 and a significance value of 0.000, meaning that every increase in TD will increase ROA by 0.519. These results are in line with research conducted by [8], [9], [10] which found that digital transformation has a positive and significant effect on Return on Assets (ROA). This shows that digitalization not only has implications for operational aspects, but also has a direct impact on the company's financial performance. Therefore, companies need to pay attention and manage intangible assets well in order to make a positive contribution to financial performance. Research by [11] also shows that there is a significant influence between intangible assets on ROA. This shows that intangible assets have an important value for companies in achieving optimal financial performance.
2. Debt to Asset Ratio (DAR) has a significant negative effect on ROA with a coefficient of -2.711 and a significance value of 0.000, indicating that an increase in DAR will significantly reduce ROA. In other words, the greater the proportion of assets financed by debt, the lower the company's ability to generate profits from all assets owned. These results are in line with research conducted by [12] and [13] which state that DAR has a negative and significant effect on ROA.
   A high DAR reflects the company's high level of leverage. In technology companies, this can be a signal that the company uses more debt to finance investments and operations. However, not all technology investments generate revenue immediately. Many technology-based projects take a long time before providing significant returns.
   When debt-financed assets do not immediately generate profits or productivity, this will actually reduce the overall efficiency of asset use. As a result, the ROA value decreases. In addition, high DAR also increases liquidity and solvency risks, especially in volatile industries such as technology, where cash flows are not always stable.
3. Quick Ratio (QR) has a significant positive effect on ROA, with a coefficient value of 4.181 and a significance of 0.000, which means that an increase in QR will greatly increase ROA. This means that the higher the company's ability to meet its short-term obligations with the most liquid current assets, the higher the company's ROA level. This result is in line with research conducted by [14] which shows that the quick ratio has a significant effect on ROA. However, this result contradicts research [12] which found that the quick ratio has no significant effect on ROA. Companies with a healthy Quick Ratio level will be sufficiently prepared to face short-term liabilities without having to rely on inventory sales. This condition shows that the company is able to manage its cash and current assets wisely. Such healthy management not only makes operations run more smoothly, but also builds trust from investors and other stakeholders. Ultimately, smooth cash flow and the ability to meet obligations will have a positive impact on improving profits and overall financial performance.
4. Debt to Equity Ratio (DER) shows a significant negative effect on ROA with a coefficient of -1.895 and a significance of 0.000, indicating that the higher the DER, the ROA tends to decrease. This means that the higher the DER of a company, the lower the company's efficiency level in generating profits from its total assets. This result is in line with research conducted by [15], [16], [17] which states that DER has a negative and significant effect on ROA. However, contrary to the results of research [12], [18], [19] which shows that DER has a positive effect on Return on Assets (ROA) and research conducted by [20] which shows that DER has no significant effect on ROA. This difference in results indicates that the effect of leverage on financial performance may vary depending on the context and characteristics of each company.
   Technology companies tend to have a high fixed cost structure, especially for product development, research and development, and investment in software and hardware. If the company finances these activities with a high proportion of debt compared to equity, it will incur a large interest expense and increased financial risk.
   Dependence on debt can also lead to financial rigidity, as the company must fulfill its interest and principal payment obligations regardless of profit conditions. This depresses the net income available to equity holders, thereby lowering ROA. In the long run, high DER can worsen the financial health of technology companies, whose

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e-ISSN: 2598-120X; p-ISSN: 2598-117X

operations are highly dependent on flexibility and the ability to innovate.

5. Current Ratio (CR) also has a significant negative effect on ROA with a coefficient value of -1.791 and a significance of 0.009, which means that an increase in CR significantly reduces ROA. This means that an increase in the short-term liquidity ratio shown by CR actually correlates with a decrease in the company's efficiency in generating profits from its total assets. This result is in line with research conducted by [21] which states that current ratio has a negative and significant influence on ROA. However, it contradicts the research results of [19], [18], and [22] which show that the current ratio has a positive and significant effect on ROA.

IV. CONCLUSIONS

This study shows that digital transformation through the management of intangible assets, such as software, has an important role in driving improvements in corporate financial performance, particularly profitability. Efficiently managed liquidity, especially through the quick ratio, contributes positively to ROA, while too high a current ratio decreases the efficiency of current assets. In addition, excessive reliance on debt, reflected in the DAR and DER ratios, negatively impacts profitability. Therefore, a balanced funding strategy and a focus on asset utilization efficiency are required to maintain competitiveness and long-term financial performance.

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