

The Effect of Leverage, Liquidity, Firm Size, Activity, and ESG Score on The Financial Performance Of Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) for The 2022-2023 Period

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Abstract

This study aims to analyze the influence of leverage, liquidity, firm size, activity, and Environmental, Social, and Governance (ESG) scores on the financial performance of property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the 2022-2023 period. Financial performance is measured using Return on Assets (ROA) with a one-year lag ($t+1$) to capture the delayed impact of managerial decisions. Utilizing a quantitative approach with purposive sampling, the study analyzed 58 companies, totaling 116 observations. Data analysis was performed using panel data regression with the Fixed Effect Model (FEM). The results indicate that only liquidity (Current Ratio) has a significant negative effect on financial performance, suggesting that excessive current assets lead to idle funds that diminish efficiency. Conversely, leverage, firm size, activity, and ESG scores do not significantly impact financial performance individually. However, all variables simultaneously affect performance. These findings underscore the necessity for efficient liquid asset management to maintain profitability amidst macroeconomic volatility.

Keywords:

Financial Performance; Leverage; Liquidity; Firm Size; Activity; ESG Score

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INTRODUCTION

Figure 1

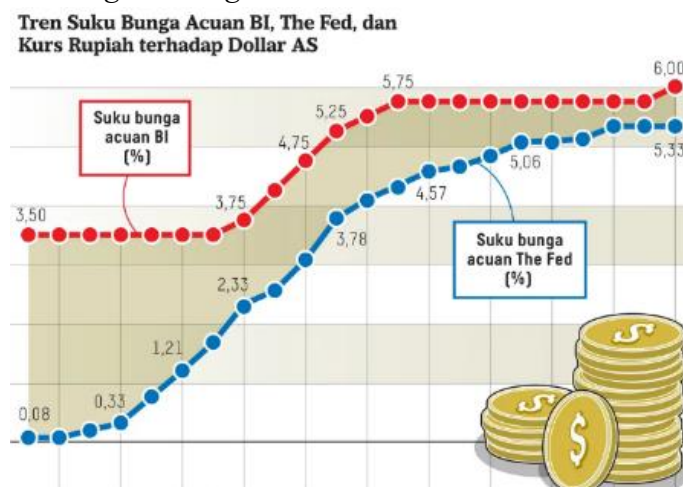
Macroeconomic Indicators

	2019	2020	2021	2022	2023	2024	2025	2026
	Aktual				Proyeksi WB			
Pertumbuhan PDB Riil dan Inflasi, persen perubahan year-on-year								
PDB Riil	5.0	-2.1	3.7	5.3	5.0	5.0	5.1	5.1
Inflasi Indeks Harga Konsumen (IHK) (rata-rata, %)	2.8	2.0	1.6	4.1	3.7	3.0	2.9	2.9
Neraca Keuangan Publik, Pemerintah Pusat, persen PDB								
Pendapatan	12.4	10.7	11.8	13.5	13.3	12.9	13.1	13.2
di antaranya Pendapatan Pajak	9.8	8.3	9.1	10.4	10.3	10.5	10.7	10.8
Belanja	14.6	16.8	16.4	15.8	14.9	15.4	15.6	15.6
Keseimbangan Primer	-0.5	-4.1	-2.5	-0.4	0.4	-0.2	-0.1	0.0
Keseimbangan Fiskal	-2.2	-6.1	-4.6	-2.4	-1.7	-2.5	-2.5	-2.4
Utang Pemerintah Pusat	30.2	39.3	40.7	39.5	39.0	39.0	39.1	38.9
Neraca Pembayaran, persen PDB kecuali dinyatakan sebaliknya								
Keseimbangan Transaksi Berjalan	-2.7	-0.4	0.3	1.0	-0.1	-0.9	-1.4	-1.6
Penanaman Modal Asing Netto	1.8	1.3	1.5	1.4	1.1	1.3	1.4	1.5
Cadangan Devisa Bruto (bulan, impor barang dan jasa)	7.6	10.2	8.0	6.0	6.5	6.8	6.6	6.4

The global economy has faced significant volatility over the last five years, driven by the COVID-19 pandemic, global inflationary pressures, and stringent monetary policies. In Indonesia, this transition was marked by a sharp increase in the benchmark interest rate (BI-Rate) from 3.50% at the start of 2022 to 6.00% by the end of 2023. The property and real estate sector, often considered a leading sector due to its linkages with approximately 180 industrial subsectors (Lembaga Manajemen Aset Negara, 2024), is particularly sensitive to these shifts due to its capital-intensive nature and long project cycles (Platitas & Ocampo, 2025). Consequently, national economic stability is heavily reliant on the financial resilience of firms within this sector during macroeconomic fluctuations.

Figure 2

Trend Graph of BI Benchmark Interest Rates, The Fed, and the Rupiah Exchange Rate against the US Dollar, 2022–2023



Despite operating under identical macroeconomic pressures, a distinct "performance gap" emerged among listed property firms during the 2022-2023 period. For instance, while PT Sentul City Tbk. (BKSL) recorded a significant net loss of Rp167 billion in 2022 (PT Sentul City Tbk, 2023), PT Metropolitan Kentjana Tbk (MKPI) achieved a net profit exceeding 30% (PT Metropolitan Kentjana Tbk, 2023). This discrepancy is often attributed to internal inefficiencies in resource management; for example, large firms holding extensive landbanks may face high maintenance costs and taxes without generating immediate revenue amidst rising interest rates. Such conditions necessitate more effective internal resource and risk management to maintain profitability.

Beyond traditional financial metrics, modern global investment flows are increasingly dominated by Environmental, Social, and Governance (ESG) mandated funds. Property firms are now pressured to transition from a profit-maximization model toward a sustainable business framework. The sector has a significant environmental footprint, particularly concerning land-use conversion, resource consumption, and construction waste. While sustainability commitment is crucial for mitigating non-financial risks and enhancing reputation (Farel et al., 2024), the relationship between ESG values and financial performance (ROA) remains inconsistent in prior empirical studies.

Based on this background, this study aims to analyze the influence of leverage, liquidity, firm size, activity, and ESG scores on financial performance, proxied by Return on Assets (ROA) for the 2022-2023 period. The research employs a lagged variable approach (ROA $t+1$), assuming that the impact of strategic managerial decisions such as asset expansion or ESG implementation is not immediately reflected in profitability within the same year. This study expects to provide new empirical evidence regarding the primary internal determinants of financial resilience in property firms amidst macroeconomic volatility.

LITERATURE REVIEW

Trade-Off Theory

Trade-Off Theory (Kraus & Litzenberger, 1973) suggests that firms seek an optimal capital structure by balancing the tax-shield benefits of debt against the potential costs of financial distress. It assumes that as long as the return on assets exceeds the cost of debt, leverage will positively contribute to financial performance (Duc et al., 2021).

Liquidity Preference Theory

Liquidity Preference Theory (Keynes, 1936) posits that managers hold liquid assets for transaction, precautionary, and speculative motives to ensure operational stability. However, there is a necessary balance to maintain, as

holding excessive cash can lead to unproductive "idle funds" that hinder potential returns (Magfiroh et al., 2024).

Firm Growth Theory

Firm Growth Theory (Trendowski & Judge, 1959) emphasizes that a company's expansion is driven by its internal resources and the efficiency of its managerial capabilities. Theoretically, larger firms should benefit from economies of scale and better access to funding, which ultimately enhances profitability (Ningsi et al., 2024).

Signaling Theory

Signaling Theory (Spence, 1973) explains the phenomenon of information asymmetry where management uses internal financial indicators to send positive signals to the market. For instance, high asset turnover is interpreted by investors as a sign of operational efficiency and strong future prospects (Banurea et al., 2024).

Sustainability Theory

Sustainability Theory (Elkington, 1998) argues that long-term corporate success requires a balance between generating profit and protecting the environmental and social ecosystem. Higher sustainability performance (ESG) is expected to mitigate non-financial risks and improve the firm's reputation among global investors (Wahdan & Rahmawati, 2023).

Financial Performance

Financial Performance is operationally defined as the management's effectiveness in generating net profit from the firm's total resources (Brigham & Houston, 2019). It is measured using Return on Assets (ROA) with a one-year lag ($t+1$) to capture the delayed impact of strategic decisions. The formula calculates the ratio of Earnings Before Interest and Taxes (EBIT) to the total assets of the firm (Fabiany et al., 2024).

Leverage

Leverage represents the proportion of a firm's assets that are financed through external debt or creditors rather than equity (Brigham & Houston, 2019). This study utilizes the Debt to Assets Ratio (DAR) as the primary tool for measurement. It is calculated by dividing the total liabilities by the total assets to assess the firm's level of financial dependency (Westerfield et al., 2022).

Liquidity

Liquidity reflects the firm's ability to settle its short-term obligations using its available current assets (Brigham & Houston, 2019). The Current Ratio (CR) is employed as the measurement indicator to evaluate the firm's cash flow buffer. It is determined by comparing total current assets to total current liabilities to identify if the firm has sufficient liquid resources (Westerfield et al., 2022).

Firm Size

Firm Size indicates the scale of a company's operations and its competitive position in the market based on accumulated resources (Brigham & Houston, 2019). This variable is measured using the Natural Logarithm (Ln) of total assets to normalize the data distribution. The logarithmic transformation helps reduce extreme variations caused by the diverse asset sizes among property firms (Westerfield et al., 2022).

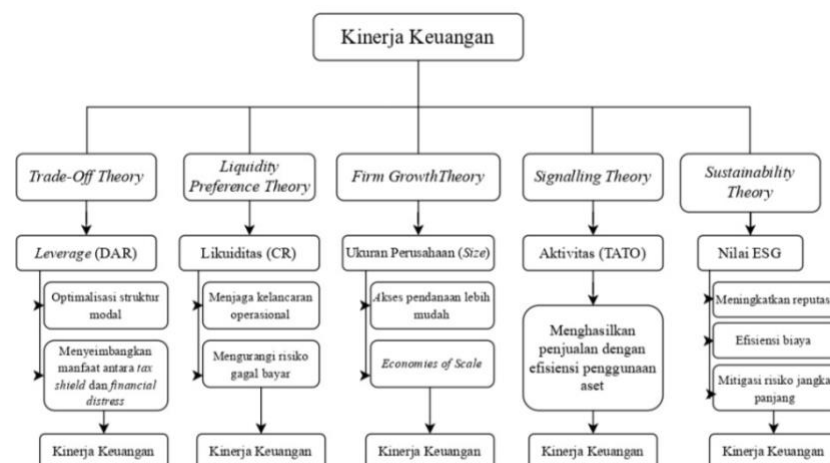
Activity

Activity refers to the efficiency of management in utilizing its internal resources to generate sales and cash flow. Total Asset Turnover (TATO) serves as the measurement tool to assess how productively the company converts its total assets into revenue. It is calculated by comparing net sales to the average total assets held during the period.

ESG Score

ESG Score represents a firm's performance in managing environmental, social, and governance risks to ensure long-term sustainability (Eccles et al., 2014). This study uses the standardized ESG Score published by ESG Intelligence as the main measurement tool. The score is derived by dividing the total disclosed sustainability items by the total indicators required under the Global Reporting Initiative (GRI) standards.

Figure 3
Research Framework



The Effect of Leverage on Financial Performance

In explaining the influence of leverage on financial performance, this study refers to trade-off theory. This theory suggests that firms determine an optimal capital structure by balancing the tax-shield benefits of debt against the potential costs of financial distress. Efficient leverage management supports profitability if the returns generated from debt-financed assets exceed the

interest costs. Previous findings indicate that an appropriate level of leverage can optimize the firm's financial performance (Nuraini et al., 2025).

H1: Leverage is expected to have an impact on financial performance in property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2023.

The Effect of Liquidity on Financial Performance

In explaining the influence of liquidity on financial performance, this study applies liquidity preference theory. Firms maintain liquid assets to meet transaction, precautionary, and speculative motives to ensure operational stability. Management must balance the need for cash buffers to avoid default risks against the risk of holding excessive "idle funds" that decrease asset efficiency. Previous theories suggest that optimal liquidity management is crucial for maintaining profitability and market confidence (Fitriyah & Syaiful, 2024).

H2: Liquidity is expected to have an impact on financial performance in property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2023.

The Effect of Firm Size on Financial Performance

In explaining the influence of firm size on financial performance, this study utilizes firm growth theory. A larger firm size indicates an accumulation of resources and managerial capabilities that can lead to competitive advantages through economies of scale. Theoretically, firms with larger asset scales have better access to financing and lower operational costs per unit, which enhances their profit potential. Previous research supports the idea that firm size reflects the firm's capacity to optimize internal resources for better performance (Lilia et al., 2020).

H3: Firm Size is expected to have an impact on financial performance in property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2023.

The Effect of Activity on Financial Performance

In explaining the influence of activity on financial performance, this study refers to signaling theory. Higher asset turnover serves as an operational signal to investors regarding the efficiency of management in utilizing total resources to generate sales. Efficient activity management indicates that the company can productively convert its assets, including landbanks, into revenue streams. Previous findings show that high activity ratios contribute positively to the firm's overall financial success (Rohendi & Sudradjat, 2021).

H4: Activity is expected to have an impact on financial performance in property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2023.

The Effect of ESG Score on Financial Performance

In explaining the influence of ESG scores on financial performance, this study applies sustainability theory. Integrating environmental, social, and governance factors into corporate strategy signals a commitment to long-term value creation beyond short-term profit maximization (Schoenmaker & Schramade, 2019). High ESG performance helps firms mitigate non-financial risks, improve corporate reputation, and attract capital from global sustainable-mandated funds. Previous studies suggest that strong sustainability practices support more stable and resilient financial outcomes (Husain et al., 2025).

H5: ESG Score is expected to have an impact on financial performance in property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2023

RESEARCH METHOD

This study employs an explanatory causal design with a quantitative approach. The population consists of 92 property and real estate firms on the IDX, with 58 firms selected through purposive sampling based on data completeness and ESG score availability. The independent variables are Debt to Asset Ratio (DAR), Current Ratio (CR), Ln of Total Assets, Total Asset Turnover (TATO), and ESG Score. The dependent variable is ROA (t+1). Panel data regression was conducted using EViews 14, where the Chow and Hausman tests confirmed the Fixed Effect Model (FEM) as the most appropriate estimation method.

FINDINGS AND DISCUSSION

Estimation Model Selection

The selection of the most appropriate panel data regression model was conducted through the Chow and Hausman tests. The Chow test resulted in a probability value of 0.0001, which is less than the 0.05 significance level, indicating that the Fixed Effect Model (FEM) was more appropriate than the Common Effect Model (CEM). Subsequently, the Hausman test yielded a probability of 0.0051, confirming that FEM provided a more accurate estimation than the Random Effect Model (REM). Therefore, FEM was established as the final model to analyze the causal relationships between the variables in this study.

The descriptive statistics show that leverage (DAR) has a mean of 0.349, indicating that firms maintain a moderate debt-to-asset proportion with relatively stable variability. Liquidity (CR) records an average of 10.360, but with a high standard deviation (40.318) and a wide dispersion, reflecting substantial differences in liquidity positions between firms. Firm size shows an average of 25.864 with low variation, suggesting that the majority of companies in the sample possess a large and stable asset scale. Activity

(TATO) has a mean of 0.171, which confirms the inherent slow conversion of assets into revenue in the property sector during the observation period. Meanwhile, ESG scores average 0.414 with moderate variation, indicating inconsistent levels of sustainability commitment and disclosure across the sampled firms. Finally, ROA records an average of 0.772, with negative minimum values indicating the presence of loss-making firms in the 2022-2023 period.

Table 1
Descriptive Statistic

	<i>X1</i>	<i>X2</i>	<i>X3</i>	<i>X4</i>	<i>X5</i>	<i>Y</i>
<i>Mean</i>	0,349288	10,36027	25,86453	0,171076	0,414747	0,772273
<i>Median</i>	0,323908	2,323908	27,26547	0,145296	0,388900	1,232054
<i>Maximum</i>	0,834090	308,7904	31,83314	0,723784	0,851850	3,803101
<i>Minimum</i>	0,002312	0,683125	13,93377	0,009322	0,012350	-4,405170
<i>Std. Deviation</i>	0,195026	40,31894	4,419381	0,139178	0,179273	1,617370

Source: Processed Data (2026)

Normality Test

The normality test was conducted to assess whether the regression residuals are normally distributed (Gujarati & Porter, 2009). The Jarque-Bera test results show a probability value of 0.2437, which is above the 0.05 significance level. This finding indicates that the residuals are normally distributed, ensuring that the research model meets the principle of normality.

Multicollinearity Test

The multicollinearity test was conducted to identify potential high correlations among independent variables. The results show that all independent variables have Variance Inflation Factor (VIF) values below 10, with a mean VIF of 1.108. This indicates that the regression model is in an ideal condition and does not suffer from multicollinearity issues.

Heteroscedasticity Test

The heteroscedasticity test was conducted to examine whether the residual variance is constant across observations using the White Test. The results show a probability Chi-Square value of 0.0751, which is greater than 0.05. This indicates that the model does not exhibit heteroscedasticity, and the null hypothesis of constant variance is accepted.

Autocorrelation Test

In a panel data framework, the autocorrelation test is intended to identify whether residuals are correlated over time within a specific entity. However, given the restricted temporal scale of this research ($T = 2$), performing an autocorrelation test is unfeasible because there are insufficient

degrees of freedom to provide a reliable estimate of serial correlation, This approach aligns with (Wooldridge, 2012) that for micro-panels with short time horizons, the analytical focus should prioritize addressing heteroscedasticity rather than serial correlation issues.

Hypothesis Test Results

Table 2

The Hypothesis Test Results

	<i>Coefficient</i>	<i>Std, Error</i>	<i>T-Statistic</i>	<i>P> T </i>
X1	2,202143	3,625939	0,607331	0,5482
X2	-0,029572	0.009136	-3,236882	0,0029
X3	-4,422638	2,318672	-1,907401	0,0661
X4	1,725811	6,053702	0,285084	0,7775
X5	-1,206197	1,554020	-0,776174	0,4437
C	114,9040	60,53410	1,898169	0,0673

The test results indicate that liquidity has a significance level below 0.05, suggesting a significant effect on financial performance. The regression equation obtained is:

$$Y = -0.02957 X2it \quad (1)$$

The regression coefficient for liquidity is -0.02957, indicating a negative relationship, This implies that a 1% increase in liquidity leads to a decrease in financial performance by 0.02957 units, assuming other variables remain constant.

The F-test results indicate a significance value of 0.000021 (< 0.05), suggesting that all independent variables jointly influence financial performance. In contrast, the t-test results reveal that only liquidity has a significant impact, whereas leverage, firm size, activity, and ESG scores do not exhibit significant effects, The Adjusted R² value of 0.6779 implies that 67.79% of the variation in financial performance is explained by the variables included in the model, while the remaining 32.21% is attributed to factors beyond the scope of this study

The Effect of Leverage on Financial Performance in Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) during the Period 2022-2023

The regression results show that leverage, proxied by the Debt to Asset Ratio (DAR), does not significantly affect financial performance measured by Return on Assets (ROA) in the subsequent period for property and real estate companies listed on the Indonesia Stock Exchange (IDX) during 2022–2023. This indicates that although interest rates (BI-Rate) increased significantly during the transition period, firms were able to anticipate the rising cost of debt

through operational efficiencies. Descriptive statistics support this finding, showing that the average DAR decreased from 0.374 in 2022 to 0.365 in 2023, while ROA remained relatively stable at 2.10%. Consequently, these findings suggest that firms manage their capital structure to minimize financial distress costs, yet leverage is not a primary driver of profitability in this specific economic climate.

The Effect of Liquidity on Financial Performance in Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) during the Period 2022-2023

The regression results show that liquidity, proxied by the Current Ratio (CR), has a significant negative effect on financial performance measured by Return on Assets (ROA) for property and real estate companies listed on the IDX during 2022–2023. Specifically, higher liquidity is associated with lower financial performance, as excessive liquid assets lead to unproductive idle funds and high opportunity costs. This supports the Liquidity Preference Theory, indicating that the mismanagement of current assets during a period of economic uncertainty hinders asset efficiency. Empirical data highlights this trend, where companies with extremely high liquidity, such as Bumi Citra Permai Tbk. (mean CR 4.48), achieved lower ROA compared to firms with more balanced liquidity levels like Summarecon Agung Tbk.

The Effect of Firm Size on Financial Performance in Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) during the Period 2022-2023

The empirical results show that firm size, proxied by the natural logarithm of total assets, does not have a significant effect on financial performance measured by Return on Assets (ROA) for property and real estate companies listed on the IDX during 2022–2023. This indicates that a large asset scale does not automatically guarantee increased profitability without efficient managerial capability and cost control. In the property sector, large landbanks often incur high maintenance costs and taxes without generating immediate revenue, which can negate the benefits of economies of scale. These findings do not support the Firm Growth Theory, as evidenced by large firms like PP Properti Tbk. which recorded negative financial performance (-5.76%) despite its substantial asset size.

The Effect of Activity on Financial Performance in Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) during the Period 2022-2023

The results show that activity, proxied by Total Asset Turnover (TATO), does not significantly affect financial performance measured by Return on Assets (ROA) for property and real estate companies listed on the IDX during 2022–2023. This may be attributed to the industry's long production and revenue recognition cycles (2–5 years), which prevent short-term asset turnover from reflecting an immediate impact on net profit.

Descriptive statistics confirm a low average TATO of 0.171, reflecting the inherent slow conversion of assets into sales in this capital-intensive sector. Consequently, these results suggest that while operational signals are important under Signaling Theory, turnover efficiency alone was not the primary determinant of ROA during this observation period.

The Effect of ESG on Financial Performance in Property and Real Estate Companies Listed on The Indonesia Stock Exchange (IDX) during the Period 2022-2023

The empirical results indicate that Environmental, Social, and Governance (ESG) scores do not have a significant effect on financial performance measured by Return on Assets (ROA) for property and real estate companies listed on the IDX during 2022–2023. This suggests that ESG implementation is still perceived as a short-term investment cost rather than a key driver of immediate profitability in the Indonesian market. Sustainability practices require substantial time and resources before translating into material financial benefits, which limits their short-term impact on market valuation and profit. Therefore, these findings do not support Sustainability Theory in the short run, as firms with higher ESG scores did not necessarily exhibit higher financial performance during this economic transition

CONCLUSIONS

This study concludes that in the volatile 2022-2023 period, the financial performance of Indonesian property firms was primarily driven by the efficiency of liquid asset management rather than debt levels or firm size. High liquidity levels proved detrimental due to the accumulation of unproductive idle funds. Management should focus on optimizing working capital and converting idle assets into more productive investments to safeguard profitability. Future research should extend the observation period to better capture the long-term impacts of ESG and asset turnover.

LIMITATION & FURTHER RESEARCH

This study acknowledges several methodological limitations, including the reliance on third-party ESG scores which may not fully distinguish between genuine sustainability commitments and potential greenwashing practices, and the primary focus on an accounting-based measure (ROA) rather than market-based indicators that reflect real investor expectations. Furthermore, the model assumes a one-way causal relationship that potentially overlooks endogeneity issues, while the use of secondary data limits the ability to verify internal qualitative factors or unpublished governance issues. To address these constraints, future research is encouraged to extend the observation period to capture long-term impacts and incorporate macroeconomic variables, such as inflation and exchange rates, to strengthen the model against external shocks.

Additionally, employing alternative performance proxies like Return on Equity (ROE) or Tobin's Q is recommended to provide a broader perspective on firm value and market-based valuation within the property and real estate sector.

AUTHOR CONTRIBUTION

Author: Conceptualisation and Research Design, Data Collection, Methodology, Supervision, Writing Entire Paper, Conceptualisation, Data Collection and Analysis, Editing and Layouting. All Authors have read the final version of the paper.

Declaration of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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