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Sekolah Tinggi Manajemen PPM
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E-mail: jmbr@ppm-manajemen.ac.id
<https://jmbr.ppm-school.ac.id>

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The Critical Factors that Influence Dividend Payout Ratio on Pro-Cyclical and Non-Cyclical Sector Companies

David Santoso, Helen Adriana Wijaya, Jason Ferdianto Dihadjo, Sugiarto, Agus Salim*

School of Business and Economics, Universitas Prasetiya Mulya
BSD City Kavling Edutown I.1, Jl. BSD Raya Utama, BSD City, Tangerang 15339, Indonesia
agus.salim@pmbs.ac.id

(*) Corresponding Author

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ABSTRACT

Pro-cyclical and non-cyclical sectors generate markedly different revenue patterns, a distinction that may influence firms' willingness to share profits with investors. This study examines whether ownership structure and key financial variables influence dividend policy in Indonesia's pro-cyclical manufacturing and non-cyclical consumer goods industries. Using a balanced panel of 435 firm-year observations (2015–2019) and fixed-effects panel regression, we examine the impact of family ownership, managerial compensation, leverage, and profitability on the dividend payout ratio. Sector-specific results emerge. In consumer-goods companies, higher managerial compensation significantly increases the dividend payout ratio, whereas greater leverage dampens it; family ownership and profitability are insignificant. In manufacturing firms, family ownership increases the dividend payout ratio, while leverage and profitability decrease it; managerial compensation has no significant impact. The findings help income-oriented investors select suitable sectors, guide regulators in tailoring governance codes, and extend agency and signaling research to contrasting industry characteristics.

Keywords:

Dividend payout ratio, family ownership, leverage, managerial compensation, non-cyclical sector, pro-cyclical sector, profitability.

ABSTRAK

Sektor pro-cyclical and non-cyclical memiliki pola pendapatan yang sangat berbeda, perbedaan yang dapat memengaruhi kesediaan perusahaan untuk berbagi keuntungan dengan investor. Studi ini mengkaji apakah struktur kepemilikan dan variabel keuangan utama memengaruhi kebijakan dividen di industri manufaktur yang pro-cyclical dan barang konsumsi yang non-cyclical di Indonesia. Dengan menggunakan panel balance dari 435 observasi perusahaan-tahun (2015-2019) dan regresi panel efek tetap, kami mengkaji dampak kepemilikan keluarga, kompensasi manajerial, leverage, dan profitabilitas terhadap rasio pembayaran dividen. Hasil sektor-sektor spesifik muncul. Pada perusahaan barang konsumsi, kompensasi manajerial yang lebih tinggi secara signifikan meningkatkan rasio pembayaran dividen, sedangkan leverage yang lebih besar melemahkannya; kepemilikan keluarga dan profitabilitas tidak signifikan. Pada perusahaan manufaktur, kepemilikan keluarga meningkatkan rasio pembayaran dividen, sementara leverage dan profitabilitas menurunkannya; kompensasi manajerial tidak memiliki dampak yang signifikan. Temuan ini membantu investor yang berorientasi pendapatan memilih sektor yang sesuai, memandu regulator dalam menyesuaikan aturan tata kelola, dan memperluas riset agensi dan sinyal ke industri yang berbeda karakteristiknya.

Kata Kunci:

Kepemilikan keluarga, kompensasi manajerial, leverage, non-cyclical sector, pro-cyclical sector, profitabilitas, rasio pembayaran dividen.

INTRODUCTION

Dividends offer investors reliable, periodic cash flows and serve as a favourable signal of firm strength (Ross, 1977). The bird in hand theory argues that shareholders prefer this assured income to uncertain capital gains (Lintner, 1956). In Indonesia, the appeal is growing: only 133 issuers paid dividends in 2010 (average ratio 39.15 %), but 234 did so in 2019 with an average ratio of 48.94 %. Identifying the forces shaping these rising payouts—across pro-cyclical and non-cyclical sectors—is therefore critical for both income-seeking investors and policymakers. Industries can be classified as pro-cyclical or counter-cyclical (Kaminsky *et al.*, 2004). Pro-cyclical sectors closely track economic swings, experiencing revenue and dividend losses during recessions (Zhu *et al.*, 2020). In contrast, non-cyclical industries—such as consumer staples—benefit from demand that persists regardless of the cycle, sustaining cash flows and buttressing the economy when broader activity contracts (Asyik, 2011).

The OECD (2017) classifies manufacturing as pro-cyclical, consistent with Herman (2016) and Eurostat (2019), who highlight its large output, employment capacity, and GDP share. According to the Central Bureau of Statistics Indonesia, the proportion of the manufacturing industry's added value in Indonesia's GDP from 2015 to 2019 contributed to a GDP of 20.5% to 21.54%. By contrast, the consumer-goods sector—our proxy for non-cyclical activity—weathered the 2008 global crisis better than trade and transport because it supplies basic domestic needs (Nugroho & Sinabutar, 2015) and accounted for around 44 % of manufacturing value added in 2013.

There are at least four firm-level drivers that influence dividend policy. First, family ownership, which means the family acts as the controlling shareholder (Santos *et al.*, 2020). Family ownership can depress payouts through the expropriation of minority shareholders (Atmaja, 2016) or raise them to build a reputation (Gomes, 2000). Second, managerial compensation if not properly structured, it may lead to inefficiencies or excessive agency costs, potentially affecting the firm's profitability and its ability to distribute dividends as one implication of the Agency theory pioneered by Jensen and Meckling (1976). Third, leverage usually constrains dividends as cash services debt (Asif *et al.*, 2011; Sari & Sudjarni, 2015), although firms with high debt sometimes boost payouts to placate investors (Parsian & Koloukhi, 2014). Profitability enlarges the pool available for dividends funds (Kristianti & Foeh, 2020), yet pecking-order logic predicts retention of internal (Kaźmierska-Jóźwiak, 2015). On the other hand, a study by (Adityo & Heykal, 2020) concludes that profitability does not affect the dividend payout ratio.

Based on the phenomenon of dividend distribution in companies listed on the Indonesia Stock Exchange, researchers have found that research related to the factors affecting the level of dividend distribution in companies with varying ownership structures has already been conducted. Despite extensive research on dividend policies, several gaps remain in the literature. First, limited studies have specifically compared cyclical versus non-cyclical industries within the same market context, particularly in emerging economies like Indonesia. Second, most existing research treats industries

homogeneously without considering their cyclical characteristics. Third, the role of agency theory in explaining differential dividend behaviors across industry types requires further investigation. In addition, previous studies have also had mixed results due to differences in the research period, country characteristics, data types, and research methods. Therefore, researchers are interested in conducting a study titled *The Critical Factors Influencing Dividend Payout Ratio on Pro-cyclical and Non-cyclical Sector Companies*

This study aims to analyze the factors that influence dividend payout ratios across pro-cyclical and non-cyclical sectors in Indonesia, such as family ownership, managerial compensation, leverage, and profitability. Specifically, we examine how agency theory mechanisms operate differently across these sectoral contexts and provide insights for corporate finance theory and practice. This study contributes to the literature by providing a comprehensive comparison of dividend determinants between pro-cyclical (manufacturing) and non-cyclical (consumer goods) sectors in Indonesia. The research novelty lies in demonstrating how industry characteristics moderate traditional dividend determinants, particularly through the lens of agency theory. By examining these sectors separately, we reveal distinct patterns that would be obscured in cross-industry analyses.

Consumer Goods and Manufacturing Industry

The role of the consumer goods industry in the Indonesian economy is notable, with an average contribution to GDP from 2014 to 2016 of 5.63% (Saraswati & Khusaini, 2018). Business processes in this industry encompass all activities related to selling consumer products used by end-users. The Indonesia Stock Exchange classifies the consumer goods sector into several sub-sectors (Kayo, 2021), including: Food and Beverages, Cigarettes, Pharmaceuticals, Cosmetics, Household Goods, and Household Appliances. The manufacturing industry is one of the industries that drive a country's economic growth (Chakravarty & Mitra, 2009; Dasgupta & Singh, 2006; Jeon, 2006). The manufacturing industry can be a driver of the country's economy because the manufacturing industry has a high output and can provide large jobs (Herman, 2016). According to the Central Bureau of Statistics Indonesia, the manufacturing industry contributed 20-21% of Indonesia's GDP from 2015-2019.

Dividend Payout Ratio

The dividend-payout ratio helps investors match portfolios to their goals. Growth-oriented buyers prefer firms with low ratios, trusting retained earnings to boost future share prices, while income seekers favour high ratios for steady cash flows. A high ratio signals profits are paid out instead of reinvested; a low ratio implies earnings are being ploughed back into the business.

The dividend payout ratio is calculated by: $\frac{\text{Dividends}}{\text{Net Income}}$ Or $\frac{\text{Dividend per Share}}{\text{Earnings per Share}}$

The Agency Theory and the Bird-in-hand Theory

Agency theory (Jensen & Meckling 1976) frames the conflicts that emerge when shareholders (principals) delegate control to managers (agents), creating information asymmetry and differing risk appetites (Eisenhardt, 1989). Panda & Leepsa (2017) identify three dividend-relevant tensions:

1. Principal–agent – In stable sectors (e.g., consumer goods), managers may smooth or divert cash through compensation instead of maximising shareholder wealth.
2. Principal–principal – Controlling families in volatile, capital-intensive industries (e.g., manufacturing) can expropriate minorities; dividends serve as a signalling device to counter this risk.
3. Principal–creditor – Shareholders may back risky projects or excessive payouts that weaken debt-service capacity, a conflict that intensifies with leverage.

Bird-in-hand theory (Lintner, 1956; Gordon, 1963) complements this view, positing that investors prefer certain dividends to uncertain capital gains, though an exclusive focus on payouts can forgo long-run appreciation. Combined, the two theories cast dividends as dual signals: disciplining insiders by limiting free cash flow and reassuring outside investors of corporate health under high information asymmetry.

The extant Indonesian literature reports divergent associations between firm attributes and dividend policy. Studies on family ownership which are grounded in agency theory yield conflicting results. Atmaja (2016), Mulyani *et al.* (2016), and Santos *et al.* (2020) document a negative relationship between family control and the dividend-payout ratio, suggesting that entrenched owners conserve cash and heighten expropriation risk. By contrast, Ayu & Viverita (2020) and Setianto & Sari (2017) find a positive association, positing that higher dividends function as a reputation-building signal to minority investors.

Empirical evidence on managerial compensation is also mixed. Bhattacharyya *et al.* (2008) and Anderson *et al.* (2018) report that generous pay packages absorb free cash flow and depress the DPR. Conversely, Subramaniam *et al.* (2020), analysing Malaysian data, observe a positive link, arguing that well-designed compensation aligns managerial and shareholder interests while preserving political goodwill. Debt are found to either constrain or facilitate dividend payments. Puspita (2017) confirms the disciplinary view, showing that servicing obligations crowd out dividends. In contrast, Nurcaqiqi & Suryarini (2018) find that creditor monitoring mitigates agency costs, enabling higher payouts.

Findings also differ for profitability. Kristianti & Foeh (2020) report a positive profitability–DPR relationship, consistent with a free-cash-flow perspective. Tamrin *et al.* (2018), however, present evidence of a negative relationship, supporting pecking-order reasoning whereby profitable firms retain earnings to finance growth. These incongruent results highlight the necessity of incorporating sectoral

characteristics and agency mechanisms to obtain a more nuanced understanding of dividend determinants in emerging markets.

Hypothesis Development

Family ownership is assumed to influence the dividend payout ratio, with both positive and negative implications (Atmaja, 2016). According to the expropriation hypothesis in agency theory, controlling family owners may divert company resources by managing cash flow to their advantage, leading to lower dividends for minority shareholders (Jensen, 1986). This issue is worsened by weak transparency and suboptimal business practices in family-controlled firms (Tran & Le, 2019), as well as limited managerial expertise. Indonesia’s weak legal protection for minority shareholders further reinforces this concern (Atmaja, 2016), providing the basis for the proposed framework can be seen in Figure 1.

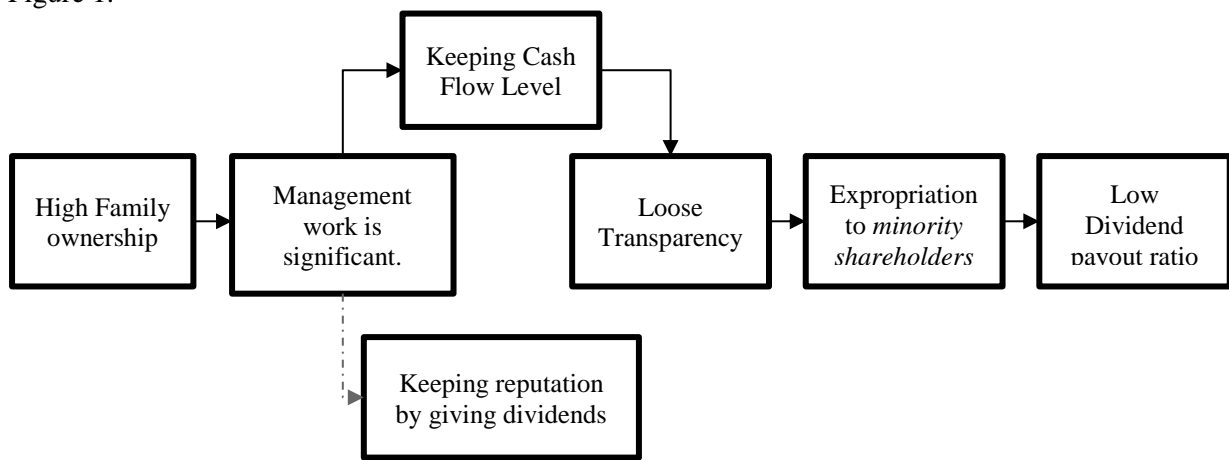


Figure 1. Hypothesis 1 Research Framework

Source: Authors’ work (2025)

Hypothesis 1 : Family ownership has a negative effect on the dividend payout ratio of public companies in the non-cyclical (consumer goods) and pro-cyclical (manufacturing) sectors.

Management compensation reflects managerial performance and is positively related to the dividend payout ratio (Haugen & Senbet, 1978; Beck & Zorn, 1982). According to Lewellen *et al.* (1978), compensation packages help reduce first-level agency costs between shareholders and management. Thus, higher compensation should align with increased shareholder wealth (Larcker, 1983). Pan *et al.* (2018) also find that greater management incentives lead to higher dividend payouts.

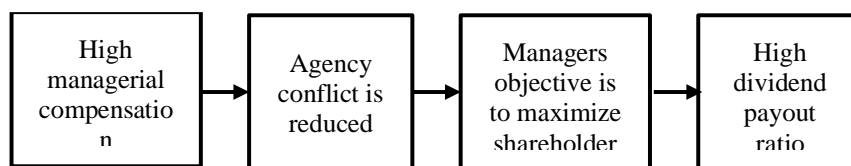


Figure 2. Hypothesis 2 Research Framework

Source: Authors’ work (2025)

Hypothesis 2 : Management compensation has a positive effect on the dividend payout ratio of public companies in the non-cyclical (consumer goods) and pro-cyclical (manufacturing) sectors

Researchers suspect a negative relationship between leverage and dividend payout, as firms typically use retained earnings—closely tied to capital structure—to fund dividends (Asif *et al.*, 2011). When capital is insufficient, companies rely on debt, increasing default risk and reducing firm valuation due to debt obligations. Therefore, higher dividends reduce retained earnings available for debt repayment.

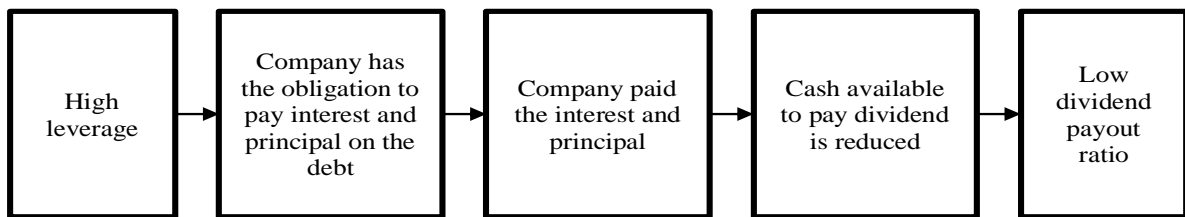


Figure 3. Hypothesis 3 Research Framework
Source: Authors' work (2025)

Hypothesis 3 : Leverage level has a negative effect on the dividend payout ratio of public companies in the Consumer goods and Manufacturing industry in Indonesia

Researchers suspects a positive relationship between profitability and the dividend payout ratio, as supported by Abrar *et al.* (2017). Higher profitability provides more funds for dividends, leading to an increased payout ratio, and vice versa.

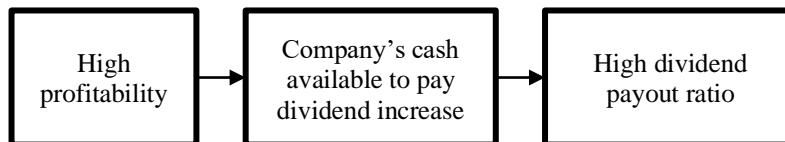


Figure 4 Hypothesis 4 Research Framework
Source: Authors' work (2025)

Hypothesis 4 : Profitability level has a positive effect on the dividend payout ratio of public companies in the consumer goods and manufacturing industry in Indonesia

RESEARCH METHODS

This study employs a quantitative approach using panel data regression analysis to examine dividend determinants across time and sectoral contexts. This panel data regression analysis method following Dewasiri *et al.* (2019), and Tahir *et al.* (2020) . The panel data regression is selected for several advantages: it provides greater sample variability, reduces multicollinearity, offers more degrees of freedom, and enables control for unobserved heterogeneity across firms and time periods.

The study targets all Indonesian firms listed on the Indonesia Stock Exchange in the consumer-goods and manufacturing sectors between 2015 and 2019. These industries were selected because they differ sharply in business-cycle sensitivity: consumer goods is a defensive, demand-stable sector, whereas manufacturing is capital-intensive and highly pro-cyclical. Comparing them enables an investigation of whether macroeconomic cyclicalities moderates the link between internal financial factors and dividend policy, consistent with classifications in Kaminsky *et al.* (2004), OECD (2017) and Asyik (2011).

A purposive sampling strategy required firms to publish complete annual reports, disclose dividend and executive-compensation data in compliance with POJK No. 34/2014, and remain listed throughout the 2015–2019 window. The resulting balanced panel comprises 160 firm-year observations in consumer goods and 275 in manufacturing. Panel estimation—with firm fixed effects—exploits both cross-sectional and temporal variation while controlling for unobserved, time-invariant heterogeneity that could otherwise bias the estimated impact of family ownership, CEO pay, leverage and profitability on dividend payouts.

Operationalization of Variables

The control variable is not the focus of the study. However, it can affect the results of the study. The control variables include the benchmark interest rate (BI Rate) and FCFE (Free Cash Flow to Equity).

Table 1. Variable Operationalization

Variable	Definition	Indicator	Formula	Unit
<i>Dividend Payout Ratio</i> (Dependent Variable)	Percentage of net profit distributed to shareholders	DPR	$\frac{\text{Dividend}}{\text{Net income}} \times 100\%$	%
Family Ownership (Independent Variable)	Companies with a high concentration of family ownership	FAM	Family companies have a share ownership portion, or there are family members who are directors or commissioners	unit
Logarithm of CEO Salary (Independent Variable)	Salaries and benefits received by the President Director	LOG_COMP	$\text{Log}(\text{Cash wage} + \text{Bonus})$	IDR
Leverage (Independent Variable)	Company's Debt to Equity	LVG	$\frac{\text{Debt}}{\text{Equity}} \times 100\%$	%
Profitability (Independent Variable)	The company's ability to earn profits from assets	ROA	$\frac{\text{Net Income}}{\text{Total Asset}} \times 100\%$	%
Control Variable				
<i>BI Rate</i>	Bank Indonesia's interest rate	BI_RATE	Mean BI 7-Days Repo Rate 1 year	%
<i>FCFE (Free Cash Flow to Equity)</i>	The cash flow belongs to shareholders after paying fees, investments, and debt.	FCFE	$\text{EBIT} \times (1 - \text{Tax Rate}) - \text{Interest Exp} \times (1 - \text{Tax Rate}) - (\text{Capital Expenditure} + \text{Depreciation}) - \text{Non-Cash Working Capital} + (\text{Debt Repayment} - \text{New Debt Issued})$	IDR

Source: (Abrar et al., 2017), processed by Authors'

Research Model

This study utilizes a panel data approach to analyze the relationship between family ownership, management compensation, leverage, profitability, and the dividend payout ratio in Indonesian consumer goods and manufacturing companies. The dataset consists of annual observations from 2015 to 2019 across multiple firms, resulting in a balanced panel structure. The use of panel data offers several advantages over cross-sectional or time-series data alone. First, panel data allows for greater degrees of freedom and efficiency in estimation by combining variation across time and entities. Second, it enables the researcher to control for unobservable firm-specific characteristics that are constant over time but may influence the dependent variable, such as corporate culture, ownership legacy, or industry sub-sector effects.

To address potential omitted variable bias due to time-invariant firm-level heterogeneity, this study employs the fixed effects (FE) model. The fixed effects specification assumes that individual-specific effects (e.g., governance practices or dividend culture) may correlate with the independent variables and thus must be accounted for within the model. By de-meaning the variables within each firm over time, the FE model eliminates the influence of all time-invariant factors, allowing for a cleaner estimation of the impact of time-varying variables—such as changes in profitability or leverage—on dividend decisions. The figure below shows the following model:

$$DPR_{it} = \beta_0 + \beta_1 FAM_{it} + \beta_2 LOG_COMP_{it} + \beta_3 LVG_{it} + \beta_4 ROA_{it} \\ + \beta_5 BI_RATE_{it} + \beta_6 FCFE_{it} + \varepsilon$$

By applying the fixed effects model, this research ensures that any unobserved characteristics that do not change over time—such as the firm’s ownership legacy or business model—do not bias the estimated coefficients. This is particularly relevant in studies involving family-owned firms, where unobserved traits related to culture or long-standing governance practices may be persistent but difficult to measure. All estimations are conducted separately for the consumer goods and manufacturing industry subsamples, allowing the model to account for structural differences between pro-cyclical and non-cyclical sectors.

RESULT AND DISCUSSION

Consumer Goods Industry

Table 2 presents the descriptive statistics of all variables used in this study. The dependent variable, dividend payout ratio (DPR), has an average value of 32.30%, with a standard deviation of 33.92%, indicating a high degree of variation across firms. The maximum value reaches 145.33%, significantly above the mean, suggesting the presence of outliers. This is confirmed by the positive skewness (0.89) and kurtosis (2.95), implying a right-skewed distribution with heavier tails than the normal distribution. Notably, one firm in 2015 (MERK) recorded an unusually high dividend payout of 145%, which has been retained in the dataset to preserve data integrity.

Table 2. Descriptive Statistics of the Consumer Goods Industry

	DPR	FAM	COMP	LVG	ROA	BI_RATE	FCFE
<i>Mean</i>	32.3007	2.0063	3.3811	37.9939	9.6214	5.5000	1024359
<i>Median</i>	25.0000	1.0000	3.3600	27.2894	6.4744	5.0000	76129.37
<i>Maximum</i>	145.3289	9.0000	4.2400	156.4906	110.2614	7.5000	19315404
<i>Minimum</i>	0.0000	0.0000	2.4100	0.0000	-15.9771	4.2500	-2631864
<i>Std. Dev</i>	33.9207	2.6858	0.4383	39.3403	14.5523	1.1547	2847104
<i>Skewness</i>	0.8939	1.3766	0.0965	1.1440	2.7068	0.7376	4.0888
<i>Kurtosis</i>	2.9481	3.6847	2.1544	3.7096	16.8548	2.1511	21.6172
<i>Observation</i>	160	160	160	160	160	160	160

Source: Authors' work (2025)

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Family ownership (FAM) has a mean of 2.01 and a median of 1.00, with a maximum of 9.00 and a skewness of 1.38. This indicates that most firms are still dominated by minority family ownership, but a small number have concentrated control. The kurtosis of 3.68 shows a leptokurtic distribution—few firms have disproportionately high family control, which may affect dividend policy. Return on assets (ROA) and leverage (LVG) both show large standard deviations (14.55 and 39.34, respectively), reflecting considerable variation in profitability and capital structure across the sample. ROA also shows a relatively high skewness (2.71), indicating a long tail of firms with exceptionally high profitability.

Manufacturing Industry

Table 3 reveals pronounced heterogeneity within the manufacturing sample. The dividend-payout ratio (DPR) averages 22.5 percent with a standard deviation of 29.4 percent; skewness of 2.62 and kurtosis of 13.87 point to a heavy right tail. The most extreme observation—AMFG in 2018—recorded a DPR of 197.4 percent, financed partly by retained earnings from the previous year, and anchors much of the distribution's leptokurtosis. Family ownership (FAM) is generally moderate (mean = 3.08, median = 2.00) but ranges up to 15.00, producing mild positive skew and moderate kurtosis (0.92 and 3.13, respectively), which indicates a small subset of firms with highly concentrated control. Leverage (LVG) exhibits even starker dispersion: while the mean stands at 217.7, a maximum of 42 237.4 and kurtosis of 272.4 signal a handful of extremely indebted firms. Retaining these outliers preserves the sector's empirical reality and aligns with the study's agency- and signalling-based expectation that dividend behaviour in family-dominated manufacturers simultaneously reflects reputational motives and financial constraints.

Table 3. Descriptive Statistics of the Manufacturing Industry

	DPR	FAM	COMP	LVG	ROA	BI_RATE	FCFE
<i>Mean</i>	22.5036	3.0836	3.2433	217.7210	4.2730	5.5000	592716.8
<i>Median</i>	14.9800	2.0000	3.3400	37.8000	3.3000	5.0000	4094.796
<i>Maximum</i>	197.3900	15.0000	4.5300	42287.37	37.0000	7.5000	28250000
<i>Minimum</i>	0.0000	0.0000	1.0700	0.0000	-16.5800	4.2500	-4892439
<i>Std. Dev</i>	29.4232	3.1467	0.5284	2547.499	6.0856	1.1532	2991944
<i>Skewness</i>	2.6236	0.9163	-0.6666	16.4664	0.8386	0.7376	6.6822
<i>Kurtosis</i>	13.8699	3.1293	4.1758	272.4277	6.6223	2.1511	50.3881
<i>Observation</i>	275	275	275	275	275	275	275

Source: Authors' work (2025)

In testing the hypothesis, the researcher has improved the problem on the classical assumption and obtained the following results.

Manufacturing Sector

The regression analysis for the manufacturing industry yields an adjusted R-squared of 98.08%, indicating that the variation in the dividend payout ratio (DPR) is almost entirely explained by the variation in the independent and control variables included in the model. This strong explanatory power reinforces the robustness of the regression specification and the relevance of the included predictors for dividend policy within capital-intensive sectors.

Table 4. The Manufacturing Industry Regression Result

Dependent Variable: DPR				
Method: Panel Least Squares (Cross-section weights)				
Total panel (balanced) observations: 275				
Variable	Coefficient	Std. Error	t-statistics	Prob.
FAM	2.6254	1.1245	2.3346	0.0233**
LOG_COMP	-0.5516	0.6617	-0.8335	0.4082
LVG	-5.83E-05	1.69E-05	-3.4587	0.0011***
ROA	-0.0938	0.0526	-1.7830	0.0802*
BI_RATE	-0.0801	0.0825	-0.9716	0.3356
FCFE	-2.24E-06	4.00E-07	-5.5990	0.0000***
C	18.3797	3.6273	5.0670	0.0000***
R-Squared	0.9850			
Adjusted R-Squared	0.9808			
F-Statistic	233.7950			
Prob(F-Statistic)	0.0000			

Source: Authors' work (2025)

Family ownership exerts a positive and statistically significant influence on the dividend-payout ratio (DPR) in manufacturing firms ($\beta = 2.63$, $p = 0.023$). This outcome supports the view that controlling families deploy dividends both as a visible means of extracting cash and as a reputational signal that mitigates minority-shareholder expropriation risk—an agency mechanism especially pertinent in pro-cyclical, capital-intensive settings.

Leverage shows the expected negative association with payouts ($\beta = -0.039$, $p = 0.001$), consistent with pecking-order predictions that heavily indebted firms conserve cash to meet fixed obligations rather than distribute it. Profitability (ROA) is weakly negative ($\beta = -0.094$, $p = 0.080$), implying that, in this sector, earnings are more likely channelled into reinvestment or deleveraging than

dividends. Managerial compensation does not significantly affect DPR ($p = 0.408$), suggesting that, compared with capital-structure concerns, executive pay is a secondary consideration in payout decisions.

Regarding controls, the policy rate (BI_RATE) remains insignificant ($p = 0.336$), indicating limited sensitivity of dividend policy to short-term monetary conditions. Free cash flow to equity (FCFE), by contrast, is strongly and negatively related to DPR ($\beta = -2.24 \times 10^{-6}$, $p < 0.001$), reinforcing Jensen's (1986) free-cash-flow argument that excess liquidity, if not paid out, heightens agency costs in family-dominated firms.

Consumer Goods Sector

The regression model for the consumer goods industry shows an adjusted R-squared of 99.64%, indicating that nearly all the variation in the Dividend Payout Ratio can be explained by the included independent and control variables. The high explanatory power of the model confirms the relevance of the selected determinants in influencing dividend policy within this sector.

Table 4. Consumer Goods in Industry Regression Result

Dependent Variable: DPR				
Method: Panel Least Squares (Cross-section weights)				
Total panel (balanced) observations: 160				
Variable	Coefficient	Std. Error	t-statistics	Prob.
FAM	0.5230	1.1370	0.4599	0.6464
LOG_COMP	6.5259	2.6460	2.4664	0.0150**
LVG	-0.0386	0.0160	-2.4142	0.0173**
ROA	-0.1091	0.0671	-1.6255	0.1066
BI_RATE	-0.4498	0.1876	-2.3975	0.0180**
FCFE	-6.10E-07	1.89E-07	-3.2201	0.0016***
C	14.8015	9.1165	-1.6236	0.1070
R-Squared	0.9972			
Adjusted R-Squared	0.9964			
F-Statistic	1190.872			
Prob(F-Statistic)	0.0000			

Source: Authors' work (2025)

In the consumer-goods sector, family ownership is not a significant determinant of the dividend-payout ratio (DPR; $p = 0.646$), implying that enhanced regulatory scrutiny and public attention to consumption-oriented firms (Wolff 2021) may constrain expropriation and render controlling families' influence on dividends negligible. By contrast, CEO compensation exerts a positive and statistically significant effect ($\beta = 6.53$, $p = 0.015$), supporting agency-theory arguments that well-paid managers align more closely with shareholder interests and echoing the findings of Subramaniam et al. (2020). Given the sector's largely income-oriented investor base, executives appear incentivised to maintain higher payouts as a credible signal of commitment.

Leverage bears the expected negative association with DPR ($\beta = -0.039$, $p = 0.017$), consistent with pecking-order logic; high debt obligations constrain liquidity, prompting firms to conserve cash rather than distribute it (Asif et al. 2011). Profitability, proxied by ROA, is negative but insignificant

($p = 0.107$), a result that can be explained by dividend-stickiness practices whereby firms sustain stable payouts despite earnings variability (Guttman *et al.*, 2010).

Among the control variables, the Bank Indonesia policy rate shows a significant inverse relationship with DPR ($\beta = -0.450$, $p = 0.018$), suggesting that rising borrowing costs elevate the value of internal funds and suppress dividends. Free cash flow to equity (FCFE) is likewise negatively and significantly related to DPR ($\beta = -6.1 \times 10^{-7}$, $p = 0.002$), indicating that excess liquidity is retained for working-capital or expansion needs unless external governance pressures dictate otherwise, in line with Jensen's (1986) free-cash-flow hypothesis.

Discussion

Analysis of the manufacturing sector

The results of the regression analysis for the manufacturing industry indicate that family ownership has a significant positive effect on the dividend payout ratio, confirm the first hypothesis. This finding suggests that as family ownership increases, firms are more likely to distribute dividends. Interestingly, this result contradicts Atmaja's (2016) study, which found a negative relationship between family ownership and dividend payout policies in Indonesia. The divergence in findings may stem from differences in sample period, measurement of family ownership, or industry-specific dynamics. Unlike Atmaja's broader approach, this study focuses specifically on the manufacturing sector, which is often capital-intensive and reliant on external financing—conditions that may encourage higher dividend payouts to signal good governance and build investor confidence. In line with this reasoning, the present finding is consistent with Ayu & Viverita (2020) and Setianto & Sari (2017), who also reported a positive association between family ownership and dividend payout ratio in Indonesian. Their findings support the notion that family-controlled firms may use dividends as a mechanism to mitigate agency conflicts, preserve reputational capital, and assure minority shareholders of fair treatment.

The results of this study indicate a positive relationship between family ownership and dividend payout in the manufacturing sector. This finding directly contributes to the ongoing debate in corporate finance by challenging the predictions of agency theory, particularly the Type II agency problem which posits that controlling shareholders—especially families—may expropriate minority shareholders by withholding dividends and diverting resources for private benefit. Contrary to this, our findings suggest that family-owned manufacturing firms may instead use dividends to mitigate agency concerns and maintain credibility in the eyes of outside investors.

This aligns more closely with the reputation-building theory (Gomes, 2000), which argues that dominant shareholders may choose to pay high dividends as a commitment to good governance in order to maintain access to capital markets. Given the capital-intensive nature of the manufacturing sector, firms in this industry often require substantial external financing. High dividend payouts may thus serve as a signaling mechanism (Bhattacharya, 1979) to convey financial health and reduce perceived risk for

lenders and shareholders. This interpretation is further reinforced by the observed economic context—namely, the capital flight triggered by global uncertainties such as Brexit and the US-China trade war, which intensified competition for capital in emerging markets like Indonesia.

Our results also lend support to Jensen's (1986) Free Cash Flow Hypothesis, which asserts that distributing excess cash through dividends can reduce managerial discretion and the risk of inefficient or self-serving investments. In family firms where agency risks may be particularly acute, dividends act as a discipline-enhancing tool by reducing internal funds available for expropriation.

Second, the management compensation variable is found to have no significant effect on the dividend payout ratio. This finding contrasts with the study by Subramaniam *et al.* (2020), which documented a positive relationship between management compensation and dividend payments. The finding also contrast with the study by Anderson *et al.* (2018) and Bhattacharyya *et al.* (2008) that show the negative influence of management compensation on dividend payments. The discrepancy may be attributed to differences in industry characteristics and the study period. Specifically, the manufacturing industry—which forms the basis of this study—is highly pro-cyclical and closely tied to macroeconomic fluctuations. As such, investors in this sector typically exhibit lower risk aversion, seeking capital gains rather than stable dividend returns. This investment behavior may reduce the relevance of compensation incentives as a mechanism for aligning managerial and shareholder interests in dividend policy decisions.

Third, the leverage variable exhibits a significant negative effect on the dividend payout ratio, confirming the third hypothesis, which hypothesizes a negative influence. This result supports the findings of Puspita (2017), but contradicts Nurchaqiqi & Suryarini (2018), who reported a significant positive relationship. The negative impact of leverage is particularly relevant in the manufacturing industry, which is capital-intensive and relies heavily on external financing to support production expansion and machinery acquisition. Consistent with the Pecking Order Theory (Myers, 1984), firms prefer to finance operations using retained earnings, and turn to debt only when internal resources are insufficient. Since interest payments on debt reduce pre-tax income, highly leveraged firms face a greater financial burden, reducing their capacity to distribute dividends. Furthermore, many Indonesian manufacturers focus on semi-finished goods with relatively low technological complexity, implying a need for further investment in technology and innovation, which may also prompt firms to retain earnings rather than distribute them.

Fourth, profitability, as measured by Return on Assets (ROA), shows a significant negative relationship with the dividend payout ratio, hence confirmed the fourth hypothesis. This finding aligns with Tamrin *et al.* (2018), who also observed a negative relationship between ROA and dividends in the manufacturing sector. However, it stands in contrast to Kristianti & Foeh (2020), who reported a positive effect of profitability on dividend payments. The negative effect observed in this study may be

explained by the strategic behavior of firms: when profitability declines, firms may choose to signal financial strength and maintain reputation by continuing to pay dividends. Conversely, when firms experience higher profitability, they may prefer to retain earnings for future expansion or reinvestment. This behavior is especially plausible in capital-intensive industries such as manufacturing, where long-term growth and competitiveness depend on reinvestment in production capacity, innovation, and technology upgrades.

Analysis of the consumer goods sector

The regression results for the consumer goods industry reveal that family ownership does not have a significant effect on the dividend payout ratio. This finding contradicts previous studies by Bernstein (2001), Atmaja (2016), Ayu & Viverita (2020), and Madyan *et al.* (2019), which found a positive relationship between family ownership and dividend payout ratio. A possible explanation for this inconsistency lies in the strategic policy environment during the research period. The consumption sector was under special government oversight, as it was a key component of national economic resilience (Wolff, 2021). With such oversight, corporate actions in family-owned firms within the consumer goods sector were likely subject to stricter scrutiny, reducing the possibility of expropriation. This may have led to stronger compliance with corporate governance standards, such as those regulated in OJK Regulation No. 50/POJK.04/2016, thereby neutralizing the role of ownership structure in determining dividend policy.

In contrast, management compensation shows a positive and significant influence on dividend payout ratio, confirm the second hypothesis. This result aligns with findings by White (1996) and Subramaniam *et al.* (2020) on Bursa Malaysia, which suggest that managerial incentives can align with shareholder interests. Although these results contrast with other studies (e.g., Bhattacharya, 1979; Anderson *et al.*, 2018), they can be understood through the lens of agency theory and the bird-in-hand theory. In sectors like consumer goods, where investors tend to be risk-averse and prefer steady returns, high management compensation may increase managerial motivation to meet investor expectations by maintaining or increasing dividend payouts. As noted by Larcker (1983), compensation structures that align managerial behavior with shareholder interests may reduce agency conflicts and promote consistent dividend policies.

Furthermore, the study finds a negative and significant relationship between leverage and dividend payout ratio, supporting the third hypothesis. This result is consistent with the pecking order theory and previous findings (Asif *et al.*, 2011), which suggest that higher debt burdens reduce the capacity for dividend distribution due to increased interest obligations. This phenomenon is particularly relevant in the consumer goods sector, which typically requires stable and timely funding due to high inventory turnover and the need to maintain operational liquidity Pradiana & Yadnya (2019). In line with this, Sidabutar & Widyarti (2017) reported an average debt-to-equity ratio of approximately 80%

in the sector during 2012–2015, underscoring its reliance on debt financing. As a result, firms with higher leverage tend to prioritize debt servicing over dividend payouts.

The regression also indicates that return on assets (ROA) has no significant effect on dividend payout ratio. This outcome diverges from Kristianti and Foeh (2020), who found a positive relationship, and from Tamrin *et al.* (2018), who reported a negative one. The absence of a significant relationship may be explained by investor behavior in the consumer goods industry, where dividend consistency is valued more than profitability fluctuations. This behavior is in line with the dividend stickiness theory (Guttman *et al.*, 2010), which posits that firms are reluctant to change dividend levels regardless of short-term earnings performance. Furthermore, under the bird-in-hand theory, firms in stable industries like consumer goods are incentivized to deliver consistent dividends to satisfy investors who prioritize predictable returns over uncertain capital gains.

CONCLUSION AND RECCOMENDATION

This study investigated how internal factors shape dividend-payout policy in Indonesia's non-cyclical consumer-goods and cyclical manufacturing sectors during 2015–2019. Panel regressions assessed family ownership, CEO compensation, leverage and profitability, controlling for free cash flow to equity and the BI 7-day reverse repo rate.

In manufacturing, family ownership is positively associated with dividend payouts, implying that reputational considerations or income needs induce controlling families to distribute cash. Leverage exerts the expected negative influence, while profitability is likewise negative, evidence that profitable, capital-intensive firms prefer internal retention. Managerial compensation is insignificant. In consumer-goods firms, by contrast, CEO pay increases payouts, supporting agency-theory predictions of incentive alignment; leverage remains negatively related to dividends, whereas family ownership and profitability are not significant.

These results enrich dividend-policy scholarship by demonstrating that ownership structure and financial policy interact differently across sectoral cycles: compensation matters more in stable, non-cyclical industries, while leverage and family control dominate in pro-cyclical, capital-intensive ones. Practically, managers should align pay schemes and capital structures with sector characteristics, and regulators should strengthen governance where family control is pronounced.

Limitations include the focus on two Indonesian industries, reliance on public compensation data, and the absence of moderating variables. Future work could examine additional sectors or countries, incorporate governance or liquidity moderators, employ finer ownership and pay metrics, and apply dynamic-panel estimators to test robustness.

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Impact of A Political Event on Stock Market: The 2024 Presidential Election Quick Count Version (Study on Indonesia Composite Index and LQ45 Stocks)

Jessica Anna Mulia Jaya*, Widuri Kurniasari

Management Department, Faculty of Economics and Business, Soegijapranata Catholic University
Jl. Pawiyatan Luhur Sel. IV No.1, Semarang City, Central Java 50234, Indonesia
Jessicanna840@gmail.com

(*) Corresponding Author

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ABSTRACT

This study examines the capital market reaction to the announcement of the 2024 Election quick count results. Specifically, it analyzes the differences in Abnormal Returns of LQ45 stocks and the Market Cumulative Abnormal Returns before and after the announcement. This research employs a quantitative study approach using secondary data from companies listed in the LQ45 index on the Indonesia Stock Exchange (IDX). The observation period covers five days before and five days after the quick count announcement of the 2024 Presidential Election. The sample consists of 45 companies included in the LQ45 index. The findings indicate that the market showed a positive response to the quick count announcement, reflected in the difference in the Market Cumulative Abnormal Returns. However, there was no significant difference in the Abnormal Returns of individual LQ45 stocks. These results suggest that political events may influence overall market sentiment without necessarily affecting individual stock returns. Future research is recommended to extend the observation period, include other stock indices, and examine additional political or macroeconomic events to provide broader insights into market reactions.

Keywords:

Abnormal return, cumulative abnormal return, LQ45, quick count presidential election, financial market.

ABSTRAK

Penelitian ini bertujuan untuk menganalisis reaksi pasar modal terhadap pengumuman hasil quick count Pemilihan 2024 dengan menguji perbedaan Abnormal Return saham LQ45 dan Cumulative Abnormal Return pasar sebelum dan sesudah pengumuman tersebut. Penelitian ini merupakan penelitian kuantitatif dengan pendekatan study yang menggunakan data sekunder berupa harga saham perusahaan yang tergabung dalam indeks LQ45 di Bursa Efek Indonesia (BEI). Sampel penelitian terdiri dari 45 perusahaan yang termasuk dalam indeks LQ45. Periode observasi dilakukan selama lima hari sebelum dan lima hari sesudah pengumuman hasil quick count Pilpres 2024. Hasil penelitian menunjukkan bahwa pasar modal memberikan respon positif terhadap pengumuman hasil quick count Pilpres 2024 yang tercermin dari adanya perbedaan pada Cumulative Abnormal Return pasar. Namun demikian, tidak terdapat perbedaan pada Abnormal Return saham LQ45 secara individual. Penelitian selanjutnya disarankan untuk memperluas periode pengamatan, menggunakan indeks saham lain, serta mempertimbangkan peristiwa politik atau faktor makroekonomi lainnya.

Kata Kunci:

Abnormal return, cumulative abnormal return, LQ45, quick count pilpres, pasar keuangan

INTRODUCTION

Investment is an activity undertaken with the aim of gaining future profits through the allocation of funds to assets expected to yield returns. These assets can include stocks, bonds, real estate, and various other financial instruments. Investment stands as one of the primary pillars in building wealth and achieving long-term financial goals (Hartono, 2022). Investment not only involves storing funds but also enables those funds to grow and develop over time. The significance of investment is reflected in various aspects of life, both on an individual level and on a broader economic scale. By planning and engaging in wise investments, individuals can achieve their financial goals such as comfortable retirement, children's education, or preparing emergency funds to deal with unforeseen situations. On the economic front, investment plays a crucial role in driving economic growth and creating job opportunities, enhancing productivity, and fostering innovation. Thus, investment serves as a key to creating a more stable and prosperous future for both individuals and the economy as a whole.

The decision to invest is influenced by various factors that can affect investors' perceptions and decisions. One of the factors that influences this is the investment goals held by individuals. These goals can vary, ranging from achieving financial security to preparing for retirement. These differences in goals will affect the investment strategies chosen and the level of risk that investors are willing to take. In addition to goals, risk profile is also a crucial factor influencing investment decisions. Each investor has a different risk tolerance depending on their preferences, financial situation, and investment experience. Conservative investors tend to choose more stable and secure investments, while more aggressive investors may be more interested in investments with higher potential returns despite greater risks.

The capital market an economic instrument is inseparable from the influence of the environment, both the economic environment and the non-economic environment. Political events are of the non-economic risks that can influence investors' decisions to invest in the capital market. The 2019 Indonesian presidential election on stock returns when a prospective presidential candidate will be determined before the presidential election, during the implementation, and also after the implementation of listed on JII70, and the results showed that there was an investors' where 7 days before and 7 days after 17 April 2019 elections were held simultaneously. This research shows that the presidential election events in 2019 significant on returns and stock prices in several companies incorporated in the JII70 (Fendiyani *et al.*, 2020).

Several studies have examined the impact of political events on stock market reactions. Fendiyani *et al.* (2020) analyzed the effect of the 2019 Indonesian presidential election on stock returns in the JII70 index and found that the election significantly influenced stock returns during the event period. Adityaningrat (2021) investigated the market reaction to the announcement of the national vote recapitulation of the 2019 election using the LQ45 index and reported that the market responded to the announcement, although no significant difference was found in abnormal returns before and after the

event. Setiawan & Nisa (2020) also examined the market reaction to the quick count results of the 2019 presidential election on LQ45 stocks and found that the market reacted negatively to the announcement.

Other studies have also analyzed the broader impact of political events on the capital market. Paputungan *et al.* (2021) examined abnormal returns and trading volume activity before and after the 2019 Indonesian presidential election and found significant differences in trading volume activity but not in abnormal returns. Meanwhile, Puspita and Damayanti (2020) analyzed the capital market reaction to the simultaneous elections on April 17, 2019, focusing on property and real estate companies listed on the Indonesia Stock Exchange. Their findings showed differences in abnormal returns before and after the election event. Furthermore, Fitriaty & Saputra (2021) studied the Indonesian capital market reaction to political announcements related to the 2024 election participants, revealing that certain sectors experienced positive cumulative abnormal returns, while others experienced negative impacts.

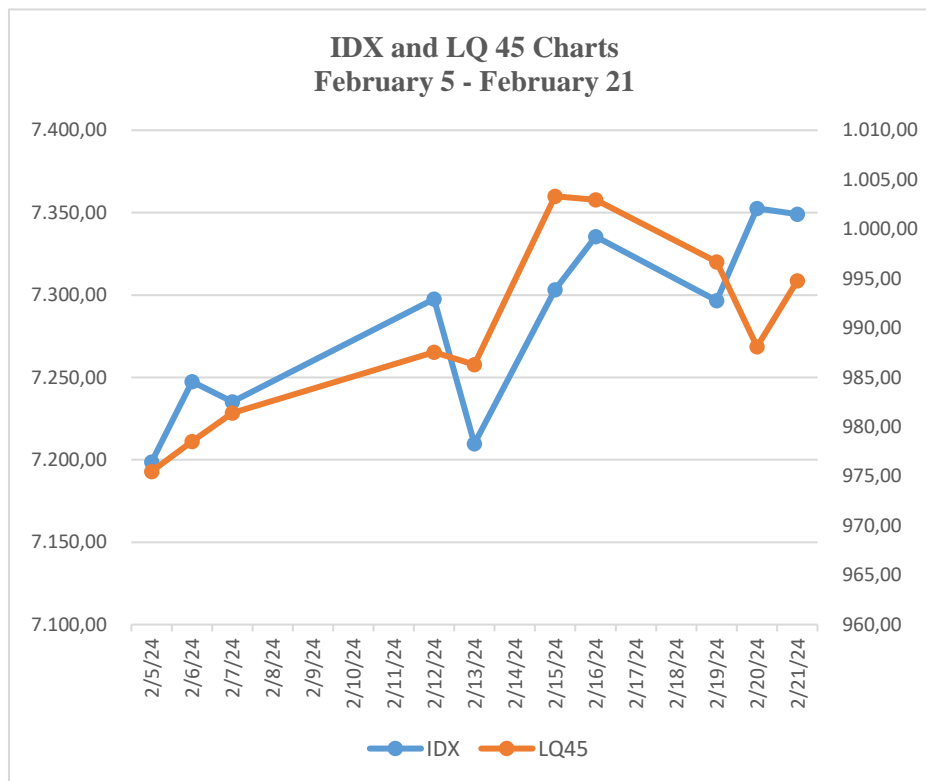


Figure 1. IDX and LQ 45 Charts
Source: IDX, 2024

The Indonesia Stock Exchange (IDX) Composite (IHSG) increased 1.3 percent on Thursday to close at 7,303.28, because of market players' optimism following the general election on Wednesday. In line with the IHSG, the LQ45 index, which tracks the top 45 stocks by market capitalization, rose by 1.53 percent to 1,003.32 by the closing. Researching the IDX and LQ45 index around the Indonesia Presidential election of 2024 can provide valuable insights into market reactions, investor sentiment, potential policy changes, and sectoral impacts, all of which are crucial for understanding the intersection of politics and the stock market. Based on the description above, this research aims to determine the difference between abnormal market returns and abnormal returns of shares listed on the LQ45.

The study conducted by Adityaningrat (2021) examined the market reaction to the announcement of the national recapitulation of the 2019 election vote count (studied on the LQ-45 index), measured through abnormal returns and trading volume activity. The research findings indicated a market reaction during and after the announcement of the national recapitulation of the 2019 election vote count. However, there were no significant differences in the average abnormal returns and trading volume activity before and after the announcement of the national recapitulation of the 2019 election vote count.

Previous research on the impact of political events on stock market movements has been extensively conducted, such as the study by Fitriaty & Saputra (2021), which examined the Indonesian stock market's reaction to the announcement of political parties qualifying as participants in the 2024 elections, the study found that the stock market reacted to the announcement of political parties qualifying as participants in the 2024 elections (Fitriaty & Saputra, 2021). It was revealed that the sectors with positive impacts were Infrastructure and Information Technology (IT), while other sectors exhibited negative cumulative abnormal return values.

The research conducted by (Jegarut *et al.*, 2021) concluded that capital market positively reacts to the announcement of the 2019-2024 Indonesia Onward Cabinet System. This reaction is in line with signaling theory in which one of the factors providing signal (increase activities) to capital market is the political event in which the information is published in the form of announcements through various media. Setiawan & Nisa (2020) examined the market reaction to news regarding the publication of the quick count results of the 2019 Indonesian presidential election on stocks included in the LQ-45 index, measured using both average and cumulative abnormal returns. The research findings indicated that overall, the market reacted negatively to the announcement of the quick count results of the 2019 Indonesian presidential election on stocks in the LQ-45 index.

The study by Papatungan *et al.*, (2021) analyzed abnormal returns and trading volume activity before and after the 2019 Presidential Election in the Republic of Indonesia, particularly focusing on state-owned enterprises (BUMN) included in the IDX BUMN 20 index. It was found that based on the results of the Wilcoxon-Signed Rank test, there was a significant difference in trading volume activity before and after the Indonesian Presidential Election, while for the paired sample test results on abnormal returns during the event period, it was found that there was no difference in abnormal returns before and after the presidential election.

Therefore, this study aims to analyze the market reaction to the announcement of the 2024 Indonesian Presidential Election quick count results by examining the differences in Abnormal Returns of LQ45 stocks and Cumulative Abnormal Returns of the market before and after the event. By applying an event study approach, this research is expected to provide empirical evidence regarding how political

events influence the Indonesian capital market and contribute to the literature on political events and stock market behavior. The hypotheses developed for this research are:

- H₁ : There is a difference in Abnormal Return of LQ45 stocks before and after the 2024 presidential election.
- H₂ : There is a difference in Cumulative Abnormal Return of the market before and after the announcement of the 2024 presidential election.

RESEARCH METHODS

The object of this research is companies included in the LQ45 index listed on the Indonesia Stock Exchange (IDX). The LQ45 index was selected because it represents 45 stocks with high liquidity, large market capitalization, and strong fundamentals, making it one of the most representative indices for analyzing market reactions in Indonesia. Stocks included in the LQ45 index are actively traded and frequently used as a benchmark for investors in evaluating stock market performance. Meanwhile, the Jakarta Composite Index (JCI/IHSG) is used as a proxy for overall market performance because it reflects the aggregate movement of stock prices listed on the Indonesia Stock Exchange. The use of LQ45 stocks and the market index in event study analysis is consistent with previous research examining market reactions to political events in Indonesia (Adityaningrat, 2021; Fendiyan *et al.*, 2020)

The population of this study consists of all companies included in the LQ45 index during the observation period, totaling 45 companies. These companies were selected as the research sample because they meet the criteria of high liquidity and active trading, which reduces the possibility of thin trading bias in event study analysis.

In this study, the market reaction is measured using Abnormal Return (AR) and Cumulative Abnormal Return (CAR). Abnormal return represents the difference between the actual return of a stock and its expected return during the event period. According to Henderson (1990), abnormal returns can be calculated as follows:

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

AR_{i,t} = Abnormal return of security (i) in event period (t).

R_{i,t} = Actual return of security (i) in event period (t).

R_{m,t} = Expected return in event period (t).

The Cumulative Abnormal Return (CAR) five days before and five days after the 2024 Presidential Election. This study uses the event study method, where testing can be done by paired sample t-test. This study uses the cumulative abnormal return (CAR) variable to measure the difference

of stock price changes before and after the 2024 Presidential Election events. The equation used for this model is as follows:

$$CARi_t = \sum_{i=1}^n AR_{it}$$

CAR_i = Cumulative Abnormal Return in time period (t) for stock (i).

The data used in this study are secondary data obtained from the Indonesia Stock Exchange, including daily closing stock prices of LQ45 companies and the Jakarta Composite Index. The analysis procedure consists of several stages. First, the daily stock returns and market returns are calculated. Second, abnormal returns are determined by subtracting expected returns from actual returns using the market-adjusted model. Third, cumulative abnormal returns are calculated to observe the overall market reaction during the event window.

RESULT AND DISCUSSION

In this study, hypothesis testing begins with calculating the stock returns of each company included in the LQ 45 index. Next, the market return is computed using the market-adjusted model assumption. Then, the expected return is determined, with the market return serving as the expected return. Subsequently, abnormal returns are calculated by subtracting the actual return from the expected return. Once abnormal returns are obtained, the next step involves computing the Cumulative Abnormal Return (CAR) of the market, which is used to observe the accumulation of abnormal returns 5 days before and after the event in the market. Additionally, this study employs a difference test by comparing abnormal returns and cumulative abnormal returns before and after the event using a paired t-test.

Table 1. Descriptive Statistics Analysis

	Mean	Std. Deviation	Minimum	Maximum
Abnormal_Return_Before	.0004	.0056	-.0086	.0060
CAR_Before	-.0010	.0053	-.0055	.0082
Abnormal_Return_After	.0032	.0047	-.0034	.0090
CAR_After	.0124	.0036	.0082	.0159

Source: Authors' work (2024)

The descriptive analysis indicates that prior to the announcement of the Quick Count results, the average abnormal return of LQ45 stocks was 0.0004 with a standard deviation of 0.0056, while the cumulative abnormal return (CAR) of the market had an average of -0.0010 with a standard deviation of 0.0053. After the event, there was an improvement in performance, with the average abnormal return 0.0032 and the market CAR at 0.0124. This suggests a positive market response following the announcement of the Quick Count results, reflected in the increased performance of LQ45 stocks and the overall market. The data variability also appears to decrease after the event, as indicated by the lower standard deviations in both variables post-event.

In the case of LQ45 stock abnormal returns before the event, the low minimum value (-0.0086) suggests a potential significant decrease in stock value, while the high maximum value (0.0060)

indicates potential significant increases. Post-event, the minimum abnormal return becomes more positive (-0.0034), indicating increased stability, while the lower maximum value (0.0090) suggests that the increase in stock value is not as high as before. Similarly, for the market CAR, the negative pre-event minimum value (-0.0055) indicates potential significant decreases in market performance, while the positive maximum value (0.0082) suggests significant potential increases. After the event, there is a significant improvement in market performance, indicated by the more positive minimum value (0.0082) and the lower maximum value (0.0159). This indicates a positive market response following the announcement of the Quick Count results, with increased stability and decreased volatility.

Table 2. Normality Test of Data

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig
Abnormal_Return_Before	.237	5	.200*	.911	5	.474
Abnormal_Return_After	.188	5	.200*	.984	5	.955
CAR_Before	.202	5	.200*	.938	5	.650
CAR_After	.225	5	.200*	.862	5	.236

Source: Authors' work (2024)

Based on the results of the normality test using the One-Sample Kolmogorov-Smirnov test, it was found that all data in this study are normally distributed as indicated by the asymptotic significance value (Sig > 0.05). Since the data in this study are normally distributed, paired T-test can be conducted.

Table 3. Paired T-test Before and After the Event

Paired Differences		t	Sig. (2-tailed)
Pair			
Pair 1	Abnormal_Return_Before-Abnormal_Return_After	-1.374	.241
Pair 2	CAR_Before-CAR_After	-4.698	.009

Source: Authors' work (2024)

The t-value for the combined abnormal return is -1.374 with a probability of .241. Therefore, the p-value of the combined abnormal return, $0.241 > 0.05$. The t-value for the combined market cumulative abnormal return (CAR) is -4.698 with a probability of 0.009. Hence, the p-value of the combined market CAR, $0.009 < 0.05$.

Based on the obtained analysis results, it can be concluded that:

1. There is a difference in the Cumulative Abnormal Return of the market before and after the announcement of the quick count results of the presidential and vice-presidential elections in 2024.
2. There is no difference in the Abnormal Return of LQ45 stocks before and after the announcement of the quick count results of the presidential and vice-presidential elections in 2024.

Based on the analysis of Cumulative Abnormal Return (CAR) of the market, it shows significant differences in the comparison of CAR before and after the Quick Count of the 2024 Presidential Election. The combined CAR test results indicate a significant difference, indicating that

there is a market reaction to the announcement of the quick count results of the 2024 presidential and vice-presidential elections. Meanwhile, for the analysis of Abnormal Return, it shows non-significant differences in the comparison of Abnormal Return before and after the Quick Count of the 2024 Presidential Election.

Table 4. Market CAR Results

Period		Market Return	Cumulative Abnormal Return	Cumulative Abnormal Return (%)
05 February	t-5	-0,0055	-0,00555	-1,00%
06 February	t-4	0,0068	0,0012	0,00%
07 February	t-3	-0,0017	-0,0005	0,00%
12 February	t-2	0,0086	0,0082	1,00%
13 February	t-1	-0,0120	-0,0039	0,00%
15 February	t+1	0,0130	0,0091	1,00%
16 February	t+2	0,0044	0,0135	1,00%
19 February	t+3	-0,0053	0,0082	1,00%
20 February	t+4	0,0077	0,0159	2,00%
21 February	t+5	-0,0005	0,0154	2,00%

Source: Authors' work (2024)

The following table shows the results of the calculation of Cumulative Abnormal Return (CAR) accumulated from February 5th to February 21st, 2024. The event period covers five days before the Presidential Election (t-5 to t-1) and five days after (t+1 to t+5). On February 13th, 2024 (t-1), a negative Return Market value (-0.0120) is observed, resulting in a negative accumulation of CAR Market value (-0.0039). However, on February 15th, 2024 (t+1), the Return Market value turns positive again (0.0130), leading to an increase in CAR Market value (0.0091). This indicates a significant market fluctuation leading up to and following the Presidential Election in 2024. Despite some fluctuations, at the end of the period (t+5), the CAR Market value increase 2.00%, indicating a significant increase in overall market performance after the event.

Based on the conducted tests, several important findings regarding the difference in Abnormal Return of LQ45 stocks and Cumulative Abnormal Return of the market before and after the 2024 Presidential Election have been identified. Overall, there is no significant difference in the Abnormal Return of LQ45 stocks before and after the Quick Count event. This indicates that based on historical stock price data, the Presidential election event did not have a direct significant impact on the performance of individual stocks in the LQ-45 index. However, the test results indicate a significant difference in the overall market performance, reflected in changes in Cumulative Abnormal Return of the market. There is a significant increase in the CAR of the market after the Quick Count. Significant fluctuations in market performance are observed before and after the Quick Count, but at the end of the period, overall stock market performance experiences a significant increase. This indicates that the stock market responded positively and optimistically to the interim election results of the 2024 general election, demonstrating market confidence in political and economic stability after the election results announcement.

CONCLUSION AND RECCOMENDATION

This study aims to explore the differences in the performance of individual stocks and the overall stock market before and after the Presidential Election. Based on the analysis results, there is no difference in the Abnormal Return of LQ45 stocks before and after the Presidential election, indicating that the political event did not affect the performance of individual stocks. However, there is an increase in the CAR of the market after the event, indicating a positive market response to the political event outcome. Despite performance fluctuations, ultimately, the overall stock market shows an increase, demonstrating market confidence in political and economic stability after the election results announcement. Therefore, stakeholders need to understand the importance of understanding how specific political events can influence capital market behavior and be relevant to understanding the relationship between political events and capital markets in making investment decisions.

Based on the research findings, it is recommended to delve deeper into the factors that can influence the overall stock market performance in the context of political events, such as the Presidential Quick Count. Further research may expand the scope of analysis to consider additional variables that may affect market response, such as macroeconomic factors and investor sentiment. Additionally, further research can also explore the broader and more complex impact of political events, as well as conduct a more in-depth analysis of the performance of individual stocks and specific market sectors in the context of these events. This will assist investors, market analysts, and other stakeholders in understanding the complex relationship between political events and stock market behavior, and in formulating better investment strategies in the future.

Despite its contributions, this study has several limitations. First, the observation period used in this study is relatively short, covering only five days before and after the event, which may not fully capture longer-term market reactions. Second, this study focuses only on companies included in the LQ45 index, which represent highly liquid stocks, and therefore may not reflect the reactions of other sectors or smaller-cap stocks in the broader market. Third, the study only examines abnormal returns and cumulative abnormal returns without considering other indicators of market reaction such as trading volume activity or investor sentiment.

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The Effect of Institutional Ownership, Company Size, Profitability, and Tangibility on Capital Structure in Non-Cyclical Consumer Sector Companies Listed on The Indonesia Stock Exchange

Leonardo Putrandy*, Hadi Santoso

Department of Management, Widya Dharma Pontianak University
1Jl. Hos Cokroaminoto No.445, Darat Sekip, Kec. Pontianak Kota, Kota Pontianak, 78243, Indonesia
leonardopd122@gmail.com

(*) Corresponding Author

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ABSTRACT

This study aims to examine the effect of these variables on the capital structure of non-cyclical consumer sector companies listed on the Indonesia Stock Exchange. This study employs a quantitative approach using secondary data obtained from firms' financial statements for the period 2018–2022. The sample was selected using a purposive sampling method, resulting in 67 companies with a total of 335 observations. The data were analyzed using panel data regression. The results show that institutional ownership has a positive and significant effect on capital structure, while profitability has a significant negative effect. Meanwhile, firm size and tangibility do not have a significant effect on capital structure. These findings support agency theory and pecking order theory in explaining corporate financing decisions. Practically, the findings provide insights for managers and investors in determining optimal financing strategies. Theoretically, this study contributes to the literature on capital structure determinants in companies operating in emerging markets.

Keywords:

Agency theory, capital structure, company size, institutional ownership, pecking order theory, profitability, tangibility; trade-off theory

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh variabel-variabel tersebut terhadap struktur modal pada perusahaan sektor konsumen non-siklikal yang terdaftar di Bursa Efek Indonesia. Penelitian ini menggunakan pendekatan kuantitatif dengan data sekunder yang diperoleh dari laporan keuangan perusahaan selama periode 2018–2022. Sampel penelitian dipilih menggunakan metode purposive sampling sehingga diperoleh 67 perusahaan dengan total 335 observasi. Analisis data dilakukan menggunakan regresi data panel. Hasil penelitian menunjukkan bahwa kepemilikan institusional berpengaruh positif dan signifikan terhadap struktur modal, sedangkan profitabilitas berpengaruh negatif dan signifikan. Sementara itu, ukuran perusahaan dan tangibilitas tidak menunjukkan pengaruh yang signifikan terhadap struktur modal. Temuan ini mendukung teori keagenan dan teori pecking order dalam menjelaskan keputusan pendanaan perusahaan. Secara praktis, hasil penelitian ini memberikan wawasan bagi manajer dan investor dalam menentukan strategi pendanaan yang optimal. Secara teoritis, penelitian ini memperkaya literatur mengenai determinan struktur modal pada perusahaan di pasar negara berkembang.

Kata Kunci:

Teori keagenan, struktur modal, ukuran perusahaan, kepemilikan institusional, teori pecking order, profitabilitas, tangibilitas, teori pertukaran

INTRODUCTION

Capital structure decisions play an important role in determining a company's financial stability and long-term performance. The way firms combine debt and equity financing influences their risk exposure, investment capability, and overall firm value. In emerging markets such as Indonesia, determining an appropriate capital structure is particularly important because firms face various financial constraints, information asymmetry, and volatile economic conditions. Companies operating in the non-cyclical consumer sector generally produce essential goods such as food, beverages, and household products, making them relatively resilient to economic fluctuations. However, despite this stability, firms in this sector still face challenges in determining optimal financing strategies, especially during periods of economic uncertainty and structural changes in the global economy (Jensen & Beck, 2023).

Several financial theories have been widely used to explain corporate capital structure decisions. Trade-off theory suggests that firms attempt to determine an optimal capital structure by balancing the benefits of debt, such as tax advantages, with the potential costs of financial distress and bankruptcy. Firms therefore adjust their leverage to achieve an optimal level that maximizes firm value. Recent empirical studies confirm that firm-specific characteristics such as profitability, growth opportunities, and firm size play an important role in determining capital structure decisions (Khan, Akhtar & Qasem, 2024).

Another important theoretical perspective is agency theory, which explains how conflicts of interest between managers and shareholders may influence corporate financial decisions. Institutional investors play an important role in reducing agency conflicts by strengthening monitoring mechanisms and encouraging more disciplined managerial decision-making. Empirical evidence shows that institutional ownership can influence corporate governance quality and affect financial policies, including financing and capital structure decisions (Sudiyatno *et al.*, 2023).

In addition, the Pecking Order Theory provides a fundamental explanation of firms' financing preferences. This theory states that information asymmetry exists between company managers and external investors, where managers possess more accurate information regarding the firm's financial condition and future prospects. Due to this asymmetry, external financing sources—such as debt and equity—are generally more costly than internal financing sources like retained earnings. As a result, firms tend to follow a hierarchical financing preference: first using internal funds, then debt financing, and issuing equity only as a last resort. This financing behavior is widely observed in firms operating in emerging markets where capital market efficiency and transparency are relatively limited (Jensen & Beck, 2023).

Previous studies have examined various determinants of capital structure, including institutional ownership, firm size, profitability, and asset tangibility. However, empirical findings

remain inconsistent across different contexts and industries. For example, recent studies show that institutional ownership can influence corporate financial decisions by improving governance and monitoring mechanisms, which may affect firms' leverage policies (Suseno *et al.*, 2026). Similarly, the relationship between firm size and capital structure has produced mixed findings. Some studies suggest that larger firms tend to have higher leverage because they have better access to financial markets and lower perceived bankruptcy risk. However, other studies indicate that firm size does not always significantly influence capital structure decisions, particularly in industries where internal financing is dominant (Desai, 2021).

Profitability is also frequently examined as a determinant of capital structure. According to the Pecking Order Theory, profitable firms tend to rely more on internal financing and therefore maintain lower levels of debt. Recent empirical evidence supports this argument by showing that profitability often has a negative relationship with leverage, particularly in emerging markets where firms prefer internal financing sources (Khan *et al.*, 2024). The role of asset tangibility in capital structure decisions has also been widely debated. Firms with higher tangible assets are generally able to obtain more external financing because these assets can be used as collateral. However, empirical studies indicate that the effect of tangibility may vary depending on industry characteristics and financial market conditions (Bayuny *et al.*, 2025).

Despite the large number of studies on capital structure determinants, several research gaps remain. First, many previous studies were conducted in different industrial contexts and countries, making it difficult to generalize their findings to the Indonesian non-cyclical consumer sector. Second, empirical results on the relationship between institutional ownership, firm size, profitability, tangibility, and capital structure remain inconsistent. Third, relatively limited studies examine these relationships during periods of major economic disruption, such as the COVID-19 pandemic, which significantly affected corporate financial decisions.

Therefore, this study aims to analyze the effect of institutional ownership, firm size, profitability, and tangibility on the capital structure of non-cyclical consumer sector companies listed on the Indonesia Stock Exchange during the period 2018–2022. By incorporating the pandemic period into the analysis, this research provides updated empirical evidence on capital structure determinants in emerging markets. The findings are expected to contribute to the literature on corporate financing decisions and provide practical insights for managers and investors in designing optimal financing strategies.

RESEARCH METHODS

This study analyzed financial reports from non-cyclical consumer sector companies listed on the Indonesian stock exchange over five years, from 2018 to 2022. It used a quantitative research approach with secondary data from these financial reports. From the 125 non-cyclical consumer sector

companies listed, a purposive sampling method was applied based on specific criteria: 1). Companies listed before 2019; 2). Companies meeting IPO requirements before 2019; 3). Companies that issued annual reports during the study period; 4). Companies are not suspended during this period. This process resulted in a sample of 67 companies for analysis.

The dependent variable in the study, capital structure, was measured using the Debt Equity Ratio (DER) (Harjito & Martono, 2011). The independent variables included institutional ownership, measured by Institutional Ownership (IO) according to (Pirzada *et al.*, 2015), Company size measured by the Natural Logarithm (LN) according to (Serghiescu, 2014), Profitability measured by Return On Assets (ROA) according to (Ahmed *et al.*, 2024), and Tangibility measured by Fixed Asset (FA) according to (Serghiescu, 2014). These variables were selected because profitability, tangibility, and company size have a relationship with capital structure, influenced by the variables listed (Zurigat, 2009). Institutional ownership was included to re-verify previous research findings, which had shown varying results, as noted in (Thesarani, 2017) (Chung & Wang, 2014) (Pirzada *et al.*, 2015), (Haryanto *et al.*, 2022). The data was analyzed using panel data processing, resulting in the following equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \dots + b_nX_n$$

$$\text{Capital Structure} = \alpha + \beta_1\text{Institutional Ownership} + \beta_2\text{Company Size} + \beta_3\text{Profitability} + \beta_4\text{Tangibility} + e$$

Institutional ownership exerts substantial influence on a company's capital structure. Major institutions wield significant managerial sway, advocating for prudent financial practices and endorsing strategic long-term financial decisions. This typically enhances financial oversight and stability, despite variations in institutional strategies affecting capital structuring. Previous studies have yielded conflicting results: while some found no impact of institutional ownership on capital structure (Pirzada *et al.*, 2015) (Haryanto *et al.*, 2022), others suggested a detrimental effect (Thesarani, 2017) (Chung & Wang, 2014). Thus, the hypothesis posited in this research asserts that institutional ownership hurts capital structure H_1 : Institutional ownership hurts capital structure

The trade-off theory suggests that larger companies typically maintain higher debt ratios compared to smaller ones. In contrast, the pecking order theory proposes that larger firms prefer equity financing over debt, leading to lower debt ratios (Chang *et al.*, 2014). Previous research has shown varied results: while some studies found no significant impact of company size on capital structure (Handoo, 2014; Tongkong 2012) others indicated a negative effect (Purnima Rao, 2019) (Thippayana, 2014). Moreover, one study (Guner, 2016) found that company size adversely affects capital structure. Thus, the hypothesis put forward in this research asserts that company size hurts capital structure H_2 : Company size hurts capital structure

The trade-off theory suggests that highly profitable companies may choose to borrow more to shield their taxable income. Conversely, according to agency theory, less profitable companies often

struggle with free cash flow issues, leading them to maintain higher debt ratios to restrict managerial discretion. However, the pecking order theory argues that profitable firms tend to prefer lower debt ratios over time, relying instead on internal resources for investment and minimizing the need for external debt financing (Chang *et al.*, 2014). Previous research has shown mixed results: some studies indicated that profitability hurts capital structure (Tongkong, 2012) (Guner, 2016) (Purnima Rao, 2019) (Thippayana, 2014) (Serghiescu, 2014), while others found no significant effect (Handoo, 2014). Therefore, the hypothesis proposed in this research asserts that profitability hurts capital structure H3: Profitability hurts capital structure

Companies possessing significant tangible assets often maintain higher debt ratios because these assets can serve as collateral, thereby reducing bankruptcy costs and increasing flexibility in securing financing. This perspective is supported by the trade-off theory, pecking order theory, and agency theory, all of which highlight the importance of tangible assets in a firm's debt financing decisions. Previous research has yielded conflicting findings: some studies indicated that tangibility negatively impacts capital structure (Purnima Rao, 2019) (Thippayana, 2014), while others found no significant effect (Handoo, 2014) (Tongkong, 2012) (Serghiescu, 2014). Therefore, the hypothesis proposed in this research suggests that tangibility hurts capital structure H4: Tangibility hurts capital structure

RESULT AND DISCUSSION

Table 1. Descriptive Statistics

	X ₁	X ₂	X ₃	X ₄	Y
Mean	0.656328	2900.343	0.039612	0.346806	1.885731
Median	0.710000	2897.000	0.040000	0.330000	0.990000
Maximum	0.980000	3283.000	0.610000	0.830000	29.32000
Minimum	0.000000	2523.000	-0.530000	0.000000	-10.31000
Std. Dev.	0.235402	156.6509	0.115347	0.184067	3.820694
Skewness	-1.219676	-0.025107	0.525056	0.277521	4.413528
Kurtosis	4.102852	2.758965	8.846451	2.461616	26.64172
Jarque-Bera	100.0355	0.846147	492.5014	8.346074	8889.334
Probability	0.000000	0.655030	0.000000	0.015405	0.000000
Sum	219.8700	971615.0	13.27000	116.1800	631.7200
Sum Sq. Dev.	18.50838	819619.0	4.443850	11.31608	4875.632
Observations	335	335	335	335	335

Source: Authors' work (2024)

The descriptive statistics reveal that there are 335 data points. The mean values for each variable are as follows: X₁ is 0.656328, X₂ is 2900.343, X₃ is 0.039612, X₄ is 0.346806, and Y is 1.885731. Standard deviations are as follows: X₁ is 0.235402, X₂ is 156.6509, X₃ is 0.115347, and Y's standard deviation is not specified. Most variables exhibit distributions close to their respective means, except for X₃ and Y, where their standard deviations exceed their means, indicating considerable variability in these data sets.

Table 2. Lagrange Multipliers

Test Hypothesis

	Cross-section	Time	Both
Breusch-Pagan	85.75324 (0.0000)	1.289117 (0.2562)	87.04236 (0.0000)
Honda	9.260305 (0.0000)	1.135393 (0.1281)	7.350868 (0.0000)
King-Wu	9.260305 (0.0000)	1.135393 (0.1281)	3.316112 (0.0005)
Standardized Honda	9.789229 (0.0000)	1.591713 (0.0557)	2.289400 (0.2526)
Standardized King-Wu	9.789229 (0.0000)	1.591713 (0.0557)	0.666182 (0.2526)
Gourieroux, <i>et al.</i>	-	-	87.04236 (0.0000)

Source: Authors' work (2024)

According to the Eviews 12 output table, the cross-section probability value (Breusch-Pagan) is 0.0000, indicating significance at the 5% level. This rejection of the null hypothesis (H0) supports the alternative hypothesis (Ha), suggesting that the Random Effect Model (REM) is appropriate, as referenced in (Gujarati & Porter, 2009). If the REM, utilizing the generalized least squares (GLS) estimation method, adequately addresses heteroscedasticity and autocorrelation, traditional assumption testing may be unnecessary.

Table 3. F table and coefficient of determination (R²)

R-Squared	0.061872
Adjusted R-squared	0.050501
S.E. of regression	2.885606
F-statistic	5.441137
Prob (F-statistic)	0.000297

Source: Authors' work (2024)

The computed F value of 5.441137 exceeds both the critical F value of 2.399013 and the significance level of 0.05, leading to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (Ha). This indicates that institutional ownership, company size, profitability, and tangibility collectively influence the capital structure of non-cyclical consumer sector companies. The adjusted R-squared value of 0.050501 (5.0501%) suggests that these independent variables— institutional ownership, company size, profitability, and tangibility—can reasonably explain variations in the capital structure of non-cyclical consumer sector companies listed on the Indonesian stock exchange

Table 4. T table

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.344994	5.680912	-0.236757	0.8130
X ₁	3.174096	1.273917	2.491603	0.0132
X ₂	0.000740	0.002001	0.369766	0.7118
X ₃	-6.793552	1.941817	-3.498555	0.0005
X ₄	-2.101882	1.515260	-1.387143	0.1663

Source: Authors' work (2024)

Based on the output table, the following regression equation is obtained:

$$\gamma = -1.34 + 3.17X1 + 0.001X2 - 6.79X3 - 2.10X4 + (CX=R)$$

The t-test results for the institutional ownership variable (IO) in Table 3 show a calculated t-value of 2.491603, exceeding the critical t-value of 1.967113 at a significance level of 0.05. Thus, the null hypothesis (H0) is rejected in favor of the alternative hypothesis (Ha), suggesting that institutional ownership (IO) positively influences the debt-to-equity ratio (DER or Y). These findings contradict prior studies (Pirzada *et al.*, 2015) (Haryanto *et al.*, 2022), which concluded that IO does not affect DER, and (Thesarani, 2017) (Chung & Wang, 2014) which suggested IO hurts DER.

For the company size variable (LN or X2), the t-test in Table 3 yielded a calculated t value of 0.369766, below the critical t value of 1.967113 at a significance level of 0.05. Therefore, the null hypothesis (H0) is accepted, indicating that company size (LN or X2) does not significantly affect DER (Y). These results align with previous research (Handoo, 2014) (Tongkong, 2012), which found no relationship between company size and DER, (Guner, 2016) (Purnima Rao, 2019) (Thippayana, 2014), which suggested that company size negatively affects capital structure.

In Table 3, the t-test results for the return on assets variable (ROA or X3) show a calculated t-value of 3.498555, exceeding the critical t-value of 1.967113 at a significance level of 0.05. Consequently, the null hypothesis (H0) is rejected in favor of the alternative hypothesis (Ha), indicating that return on assets (ROA or X3) hurts DER (Y). These findings are consistent with previous research (Tongkong, 2012) (Guner, 2016) (Purnima Rao, 2019) (Thippayana, 2014) (Serghiescu, 2014), which concluded that ROA negatively affects DER, whereas one study (Handoo, 2014) found no significant impact of ROA on DER.

According to Table 3, the t-test results for the fixed assets variable (FA or X4) yielded a calculated t value of 1.387143, below the critical t value of 1.967113 at a significance level of 0.05. Therefore, the null hypothesis (H0) is accepted, indicating that fixed assets (FA or X4) do not significantly affect DER (Y). These findings are in line with previous research (Handoo, 2014) (Tongkong, 2012) (Thippayana, 2014) (Serghiescu, 2014), which found no significant relationship between fixed assets and DER, although one study (Purnima Rao, 2019) suggested a positive effect of fixed assets on DER.

Discussion

The findings of this study provide several insights into the determinants of capital structure in companies within the non-cyclical consumer sector listed on the Indonesia Stock Exchange. The results indicate that institutional ownership has a positive and significant effect on the debt-to-equity ratio (DER). This finding suggests that institutional investors may influence corporate financing decisions by encouraging firms to utilize external financing as part of their capital structure strategy. Institutional investors generally have stronger monitoring capabilities and greater influence over managerial decisions, which can affect financial policies and increase the use of debt financing. This result is

consistent with previous studies that highlight the important role of institutional ownership in strengthening corporate governance and influencing financial decisions (Nguyen & Nguyen, 2020; Vo & Ellis, 2021).

In contrast, firm size does not have a significant effect on capital structure. This indicates that larger companies do not necessarily rely more on debt financing than smaller firms. One possible explanation is that companies in the non-cyclical consumer sector tend to have relatively stable cash flows and business operations, allowing them to maintain flexible financing strategies regardless of company size. This finding suggests that firm size alone may not be a dominant determinant of capital structure decisions in certain industries, particularly those characterized by stable demand conditions.

Furthermore, profitability shows a negative and significant relationship with capital structure. This finding supports the Pecking Order Theory, which states that companies prioritize internal financing sources, such as retained earnings, before seeking external financing due to information asymmetry between managers and external investors. Firms with higher profitability tend to reduce their reliance on debt because they have sufficient internal funds to support their operational and investment activities. Similar findings have also been reported in recent empirical studies that identify profitability as one of the key determinants of corporate capital structure (Dang *et al.*, 2021; Nguyen *et al.*, 2022).

Meanwhile, fixed assets do not significantly affect capital structure in this study. Although fixed assets are often considered as collateral that can facilitate access to external financing, the results suggest that asset tangibility does not necessarily determine the level of debt used by companies in the observed sector. This finding may indicate that internal financial performance and ownership structure play a more important role in shaping financing decisions than asset composition.

Overall, this study contributes to the literature by providing empirical evidence on capital structure determinants in the Indonesian non-cyclical consumer sector, which has received relatively limited attention in recent research. Unlike many previous studies that focus primarily on firm characteristics, this research highlights the importance of ownership structure, particularly institutional ownership, as a factor influencing capital structure decisions. Therefore, this study extends the discussion of capital structure determinants by emphasizing the role of both internal financial capability and corporate governance mechanisms in shaping firms' financing behavior

CONCLUSION AND RECCOMENDATION

Based on the statistical test results, institutional ownership (IO) has a positive and significant effect on the debt-to-equity ratio (DER). This indicates that higher institutional ownership tends to encourage companies to utilize more debt in their capital structure. Meanwhile, firm size (LN) does not have a significant effect on DER, suggesting that larger companies do not necessarily rely more on debt

financing. Profitability (ROA) shows a negative and significant relationship with DER, indicating that firms with higher profitability tend to rely more on internal financing rather than external debt, which is consistent with the Pecking Order Theory. In contrast, fixed assets (FA) do not significantly influence DER, implying that the proportion of fixed assets does not necessarily determine the level of debt used by the firm.

Despite its contributions, this study has several limitations. First, the research focuses only on companies in the non-cyclical consumer sector listed on the Indonesia Stock Exchange, which may limit the generalizability of the findings to other sectors. Second, the study only includes four independent variables—institutional ownership, firm size, profitability, and fixed assets—while other factors such as liquidity, growth opportunities, business risk, and macroeconomic conditions may also influence capital structure decisions. Third, the observation period is limited to 2018–2022, which may not fully capture long-term corporate financing behavior. For future research, it is recommended to include additional variables that may influence capital structure decisions, such as liquidity, growth opportunities, and corporate governance factors. Future studies may also consider examining moderating or mediating variables and extending the observation period to obtain more comprehensive insights into the determinants of capital structure.

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A Bibliometric Analysis of Green Finance and Waste Management in Small and Medium Enterprises (SMEs): Insights from Indonesia

Fahad Babangida, Rininta Nurrachmi

Faculty of Economics and Business, Universitas Islam Internasional Indonesia
1Jalan Raya Bogor KM. 33.5 Cisalak, Sukmajaya, Depok - West Java, 16416. Indonesia
Fahad.babangida@uiii.ac.id

(*) Corresponding Author

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ABSTRACT

This study aims to inform academics and policymakers by examining research trends on green finance and waste management in small and medium enterprises in Indonesia from 2000 to 2025, highlighting significant contributions and areas of focus. Using the PRISMA framework, a VOS viewer was used to illustrate the results of a bibliometric analysis of 10,208 articles from the Scopus database. The analysis identifies Indonesia as the top contributor, Matsumoto, T. as the most prolific author, and Universitas Indonesia as the top institution. The AIP Conference Proceedings and the IOP Conference Series Earth and Environmental Science were recognised as essential publication channels. While low-frequency phrases indicate potential avenues for future research, emerging study clusters highlight important subjects like waste management and SMEs. The analysis is restricted to English-language articles and Scopus data, excluding other databases and document formats. Future studies could use more resources and databases, such as Web of Science, Gephi, and Springer, to further understanding. This review offers innovative qualitative methodologies and comprehensive insights by mapping academic works on waste management and green finance in SMEs. Moreover, it lays the groundwork for future research on the circular economy and sustainable development. It is a valuable resource for researchers and practitioners seeking to address the challenges of green finance and waste management of SMEs in Indonesia and ultimately promote sustainable practices in the construction industry.

Keywords:

Bibliometric analysis, Green finance, SMEs, VOS viewer, waste management

ABSTRAK

Penelitian ini menelaah tren penelitian mengenai green finance dan pengelolaan limbah pada usaha kecil dan menengah (UKM) di Indonesia periode 2000–2025, dengan tujuan memberikan wawasan bagi akademisi dan pembuat kebijakan. Menggunakan kerangka PRISMA, analisis bibliometrik terhadap 10.208 artikel dalam basis data Scopus divisualisasikan melalui VOSviewer. Hasil penelitian menunjukkan bahwa Indonesia merupakan kontributor utama, dengan Matsumoto, T. sebagai penulis paling produktif dan Universitas Indonesia sebagai institusi terkemuka. Selain itu, AIP Conference Proceedings serta IOP Conference Series: Earth and Environmental Science teridentifikasi sebagai saluran publikasi penting. Analisis juga menemukan kluster kajian yang menyoroti isu penting seperti pengelolaan limbah dan UKM. Keterbatasan penelitian ini terletak pada penggunaan artikel berbahasa Inggris dan hanya bersumber dari Scopus. Penelitian mendatang disarankan untuk memanfaatkan basis data tambahan seperti Web of Science, Gephi, dan Springer. Secara keseluruhan, studi ini memberikan dasar penting bagi pengembangan riset tentang ekonomi sirkular dan pembangunan berkelanjutan.

Kata Kunci:

Analisis bibliometrik, Green finance, pengelolaan limbah, UKM, VOSviewer

INTRODUCTION

The emerging scope of green finance and sustainable waste management in Indonesia results from its expanding economy, environmental concerns, and government support for sustainability (Amelia Setyawati *et al.*, 2023). The SME sector of Indonesia stands as the vital foundation for the economic advancement of Southeast Asia since it creates substantial employment opportunities and drives GDP growth (Tambunan, 2022). However, Poor waste management remains a critical issue, especially for SMEs, who struggle to acquire sustainable solutions because of budget constraints and limited knowledge (Supriatna *et al.*, 2024). The emergence of green finance presents businesses with essential financial motivations that build investment capacities for implementing environmentally conscious business methodologies (Haryanto *et al.*, 2024). Green financial instruments, including green bonds, sustainability-linked loans, and environmental credit schemes, demonstrate this movement to unite economic expansion with sustainability (Thaliya & Amrina, 2023).

Indonesia has transitioned from its conventional funding practices toward green finance, renewable energy, and sustainable infrastructure development (Zen *et al.*, 2023). The transition serves both economic resilience needs and improves the waste management practices of SMEs (Sayaza & Tri Hartono, 2025). Sustainable waste management practices face barriers to adoption among Indonesian SMEs because these businesses experience funding challenges when implementing sustainable projects (Hakim & Fuad, 2024). Green financing instruments such as green bonds receive increased adoption from government support combined with regulatory structures, alongside financial incentives, according to Fitranty *et al.* (2025).

ASEAN member states are developing financial integration and regional cooperation through which they have boosted foreign investments directed towards green projects (Ordóñez De Pablos *et al.*, 2024). The ASEAN Green Finance Framework allows Indonesia to develop a unified financial environment that backs environmentally friendly operations for SMEs in waste management and circular economy (Tanchangya *et al.*, 2025). Such strategic reforms enhance Indonesia's environmental sustainability and reduce its dependence on resource-intensive practices, which protects long-term economic stability during changing climate conditions and worldwide economic instabilities.

Sustainability awareness at a global scale has created green finance as the essential environmental and economic catalyst for change, especially in developing economies like Indonesia. National economic development depends heavily on small and medium enterprises (SMEs), but these businesses struggle with hurdles in waste management because of financial limitations and insufficient technology. The sector of green finance, through renewable energy investments, sustainable waste practices, and environmentally conscious business methods, provides sustainable solutions for these problems (Zhang *et al.*, 2021).

Sustainable finance resembles digital connectivity by fostering entrepreneurial growth in emerging markets to enhance waste management performance in small and medium-sized enterprises. Economic resilience and sustainability success depend on green infrastructure investments that use environmentally responsible business models (Kaur *et al.*, 2023). SMEs' adoption of sustainable waste management practices remains limited because they face difficulties regarding access to green financing, regulatory hurdles, and a general absence of awareness from the business sector (Wulandari *et al.*, 2017).

Financial policies promoting green investments heavily depend on the stability of political circumstances and robust government institutions. The level of institutional strength and government incentive programs in a country proves essential to attracting sustainable investments, thus leading to enhanced waste management by SMEs (H.-S. Chen *et al.*, 2023). Understanding green finance and its relationship to governance and waste management practices drives policy development that supports financial mechanisms for Indonesian small and medium-sized enterprises (SMEs).

Thus, this study aims to conduct a bibliometric analysis of SMEs' green finance and waste management to identify key research trends, influential contributors, and evolving themes in the field. Doing so will provide policymakers, financial institutions, and businesses with insights to guide them toward more effective and sustainable waste management solutions. Using bibliometric methodologies, a descriptive literature analysis was conducted to identify the body of knowledge in this sector, focusing on SMEs, waste management, and green finance from 2000 to 2025. This was done to comprehend this concept, its evolution, and its contribution. Therefore, this paper aims to contribute to filling the gap in the bibliometric studies related to green finance and waste management with a focus on Small Enterprises in Indonesia within the 25-year period.

RESEARCH METHODS

The review aims to outline the extent of Green Finance and Waste Management in Small and Medium Enterprises in Indonesia, conducted over the previous 25 years. The investigation utilised bibliometric and graphical tools to achieve this goal. Furthermore, bibliometric analysis is based on monitoring research on a particular subject and displaying the findings using a range of characteristic analyses of these studies (Saleh *et al.*, 2024). Using pertinent publications from the Scopus database, the investigation revealed high-quality studies. Ten thousand two hundred eight articles on Green Finance and Waste Management in Small and Medium Enterprises in Indonesia were found in the first search using the "Topic" option, which was used to look for keywords in the title, summary, or keyword sections during the March 29, 2024 scan.

The search terms "Green Finance," "Sustainable Finance," "Climate Finance" or "Impact Investment" or "Social Finance" or "Carbon Finance" or "Renewable Energy Finance" or "Waste

Management" or "Circular Economy" or "Recycling" or "Waste Reduction" or "Zero Waste" or "SMEs" and "Small and Medium Enterprises" or "Startups" or "Entrepreneurship" or "Micro Enterprises" and "Indonesia" or "Southeast Asia" or "Developing Countries" acted as triggers for the English and open-access papers that were included in the study. Since Scopus offers sophisticated tools to visualize, analyze, and track study output in all subject areas, we have used it to obtain Green Finance and Waste Management on SMEs in Indonesian journals for this research. For example, we manually screened and removed irrelevant publications using the criteria listed in Figure 1 to ensure the relative significance of the examined publications to Green Finance, Waste Management, and SMEs. Two thousand one hundred eighty-five papers were thus left for additional analysis. The inclusion and exclusion criteria are listed in Figure 1. The analytical research framework is also shown in Figure 1.

The Bibliometrics Analysis

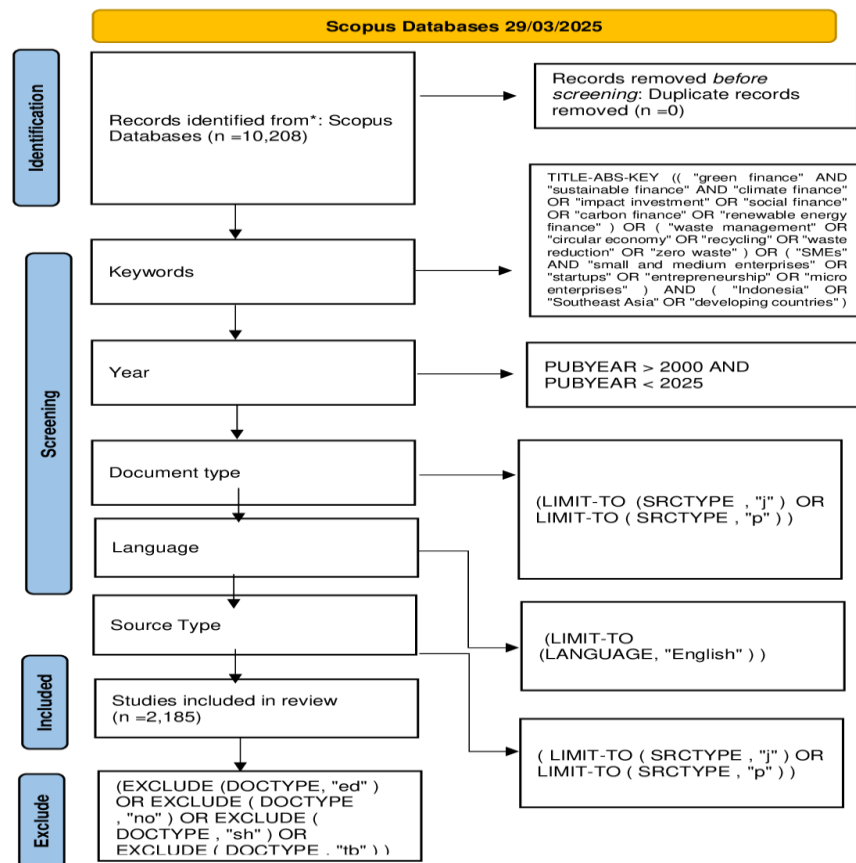


Figure 1. PRISMA Flow Diagram
 Source: Author's work (2025)

RESULT AND DISCUSSION

Bibliometric mapping is one of the primary research topics in bibliometric studies. Bibliometric mapping consists of two steps: (1) making a bibliometric map and (2) presenting maps visually. Creating bibliometric maps is the primary focus of bibliometric literature, with minimal attention paid to the graphical representation of maps (Beg *et al.*, 2024). In the past, bibliometric analysis was carried

out with various software applications, each with exceptional capabilities and restrictions. Although several bibliometric analysis tools are available, the most popular ones are HistCite, Publish or Perish, and Bibexcel (Saleh *et al.*, 2024). BibExcel was chosen for this study's bibliometric analysis because it is adaptable enough to make changes and edits to data imported from numerous databases, such as Web of Science and Scopus.

Furthermore, BibExcel can provide thorough data analysis with VOSviewer and other network analysis tools. We said that Scopus outputs were exported as RIS in the previous section (Exclusion and Inclusion). Consequently, the RIS form was obtained for analysis using BibExcel. Data collection and analysis are focused on the following areas (Marín-Rodríguez *et al.*, 2024).

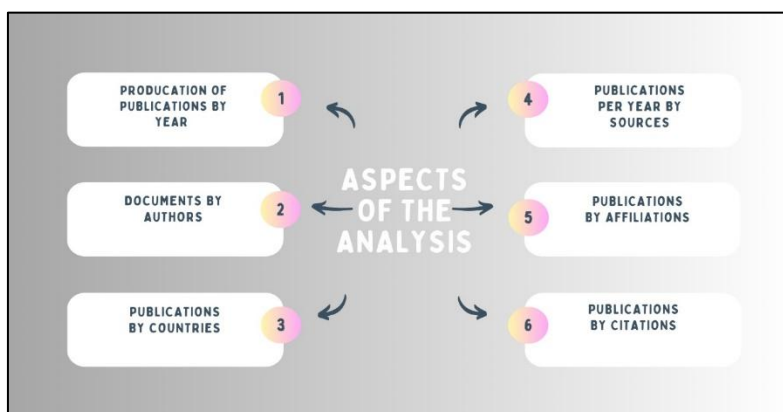


Figure 2. Features of Evaluating Extracted Articles
Source: Author created using Canva Mind Map (2025)

Distribution of Publications by Year

To address the first finding, the publication years of the articles during the previous 25 years were examined. A line graph was made to show the trend over time and identify the highs and lows in the publication activity. The number of papers published each year indicates the amount of research and interest in the topic. According to the data and graph, there has been a noticeable increase in publications, especially in recent years, from 2022 to 2024. This implies that the subjects discussed in these articles are gaining more recognition and attention from the academic and research community. The average number of papers published each year, or the publishing rate of the documents, is displayed in Figure 3. The publishing rate is calculated by dividing the total number of documents by the number of years. According to the data, 87.5 papers are released each year (Donthu *et al.*, 2021). This rate fluctuates yearly, though, so it is not constant. 2000, 2001, and 2004 had the lowest publication rates, with only one document apiece, while 2024 had the highest, with 442 papers (Ellegaard & Wallin, 2015).

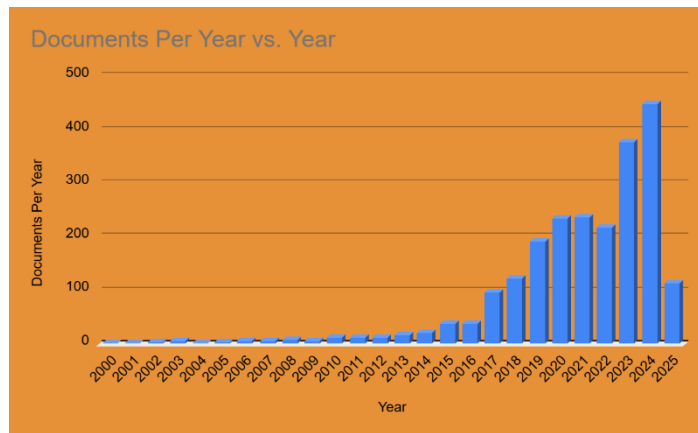


Figure 3. Distribution of Publications by Year (2000-2025)
 Source: Author's work (2025)

The Top 5 Highly Productive Journals

Table 1: The top 5 most productive journals on waste management and green finance in SMEs published in Indonesia over the past two decades, arranged by year (2000–2025).

Rank	Journal Name	Total Publications	Publisher	Cite Score	Total Citations	Most Cited Article	Times Cited
1	IOP Conference Series: Earth and Environmental Science	66,209	Institute of Physics Publishing	1.0	68,990	Correlation between conductivity and total dissolved solid in various types of water: A review	402
2	AIP Conference Proceedings	57,814	American Institute of Physics	0.5	28,862	Periodic table for topological insulators and superconductors	1,766
3	International Journal of Sustainable Development and Planning	1,000	International Information and Engineering Technology Association	2.2	2,249	Eco-cities: The mainstreaming of urban sustainability - Key characteristics and driving factors	157
4	Sustainability (Switzerland)	55,991	Multidisciplinary Digital Publishing Institute (MDPI)	6.8	381,357	Impacts of the COVID-19 pandemic on life of higher education students: A global perspective	1,229
5	Global Journal of Environmental Science and Management	216	GJESM Publication	7.9	1,697	Decolorization of mixture of dyes: A critical review	192

Source: Author's work (2025)

Our content study examined the top-referenced journals using the following standards: the journal's Cite Score, the most cited article, the total number of citations, the publisher, and the frequency of references. Table 1 displays the findings. With 66,209 publications and 68,990 citations overall, "IOP Conference Series: Earth and Environmental Science" was the most productive journal for Green Finance and Waste Management in Small and Medium Enterprises, as seen in Table 1 and Figure 4. "AIP Conference Proceedings," with 57,814 publications and 28,862 citations overall, and

"International Journal of Sustainable Development and Planning," with 1000 publications and 2,249 citations overall (Passas, 2024). Furthermore, Table 1 shows the distribution of the most productive journals related to waste management and green finance in Indonesian small and medium-sized businesses. However, RQ1 also looked into the most well-known writers in the field of study on Green Finance and Waste Management in Small and Medium Businesses in Indonesia. As indicated in Table 2, "Author," "Total Publications," "h-index," "Total citations," "current affiliation," and "country" were selected as the analysis criteria for the content analysis conducted for the prolific authors in the Green Finance and Waste Management in Small and Medium Enterprises in Indonesia research area.

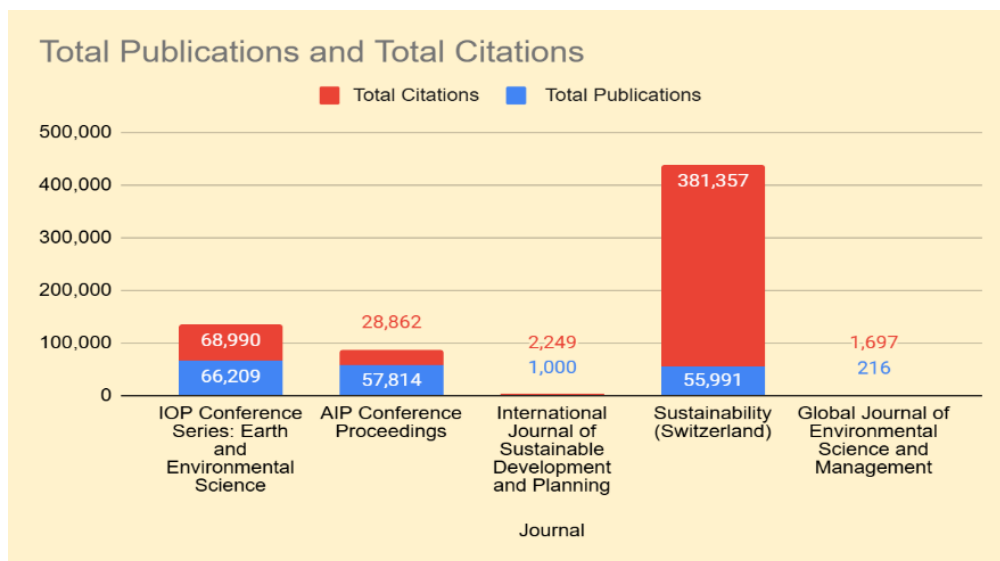


Figure 4. The Top 5 Scopus journals that support Waste Management, SMEs, and Green Finance
Source: Author's work (2025)

Top 10 Highly Prolific Authors

Table 2 presents 15 highly productive authors in the relevant subject area of Green Finance and Waste Management in Small and Medium Enterprises. Furthermore, with 88 publications, an h-index of 11, and 709 citations overall, the Japanese author "Matsumoto Toru" was the most prolific. Next on the list is the author, "Ramadan, Bimastyaji Surya," from Indonesia. He has 795 citations, 110 publications, and an h-index of 16. It was followed by "Rachman, Indriyani," whose author is from Japan and has 56 publications, an h-index of 8, and 334 citations. Additionally, as determined by the number of publications, the top three stayed the same from an H-index perspective. Additionally, Table 2 displays data from other well-known writers in the subject area of Green Finance and Waste Management in Small and Medium Enterprises (Pitaloka *et al.*, 2024).

Table 2. List of the 10 most prolific authors in Green Finance and Waste Management in Small and Medium Enterprises in Indonesia

Author	Year of 1st Publication	Total Publications (TP)	h-Index	Total Citations (TC)	Current Affiliation	Country
Matsumoto, Toru	2002	88	11	709	The University of Kitakyushu	Japan
Ramadan, Bimastyaji Surya	2017	110	16	795	Universitas Diponegoro	Indonesia
Rachman, Indriyani	2017	56	8	334	The University of Kitakyushu	Japan
Ardi, Romadhani	2011	94	8	344	Universitas Indonesia	Indonesia
Suryawan, I. Wayan Koko	2018	126	18	1,027	Universitas Pertamina	Indonesia
Herdiansyah, Herdis	2016	169	14	660	Universitas Indonesia	Indonesia
Cordova, Muhammad Reza	2014	63	24	2,053	Badan Riset dan Inovasi Nasional	Indonesia
Budihardjo, Mochamad Arief	2011	170	16	890	Universitas Diponegoro	Indonesia
Damanhuri, Enri	2009	38	11	373	Institut Teknologi Bandung	Indonesia
Kristanto, Gabriel Andari	2011	48	7	279	Universitas Indonesia	Indonesia

Source: Author's work (2025)

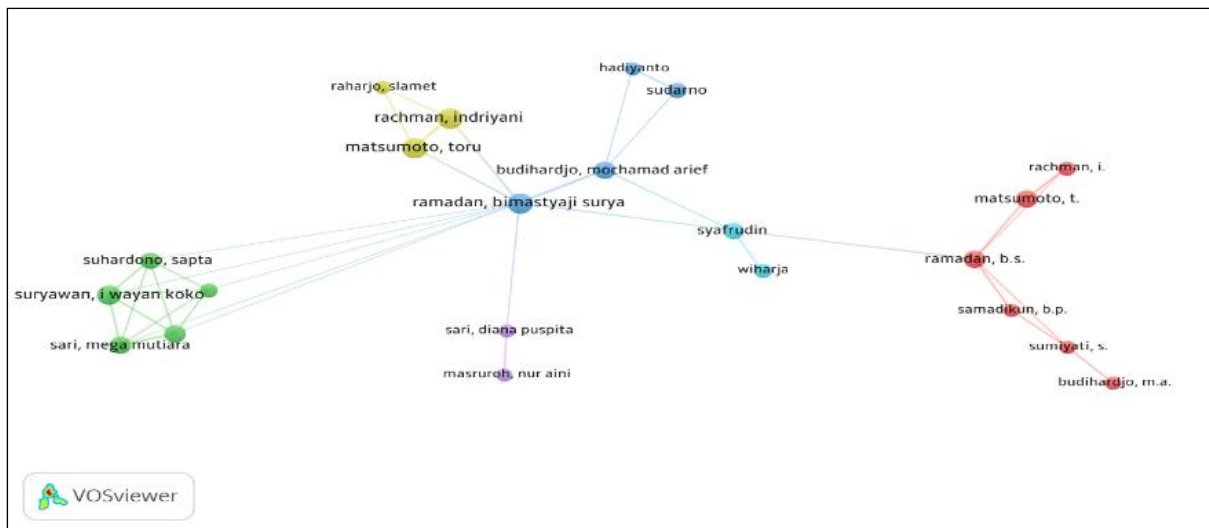


Figure 5. Co-citation of Prominent Author

Source: Author's work (2025)

Most Productive Countries

Table 3 and Figure 6 show the top 10 producing countries in the Green Finance and Waste Management in Small and Medium Enterprises study area and the topic distributions of the most productive countries, regions, and establishments. From a national standpoint, most countries and

regions listed consistently expressed interest in every field of study on waste management and green finance in Indonesian small and medium-sized businesses. However, certain countries and regions showed a special interest in specific themes. For instance, according to Universitas Indonesia, "Indonesia" was the country that produced the most publications, with 2,209 in total. They were followed by "Japan," with 109 publications from The University of Kitakyushu, and "Malaysia," with 115 publications from Universiti Kebangsaan Malaysia (Zhang *et al.*, 2019).

Table 3. List of the 10 Most Productive Countries in the Green Finance and Waste Management in Small and Medium Enterprises Research Area

Rank	Country	Total Publications (TP)	Most Productive Academic Institutions
1	Indonesia	2,209	Universitas Indonesia
2	Malaysia	115	Universiti Kebangsaan Malaysia
3	Japan	109	The University of Kitakyushu
4	Australia	46	Monash University
5	United Kingdom	46	Brawijaya University
6	Taiwan	35	National Dong Hwa University
7	United States	31	Institut Teknologi Bandung
8	Thailand	23	Badan Riset dan Inovasi Nasional
9	Netherlands	17	Wageningen University & Research
10	China	15	Xiamen University

Source: Author's work (2025)

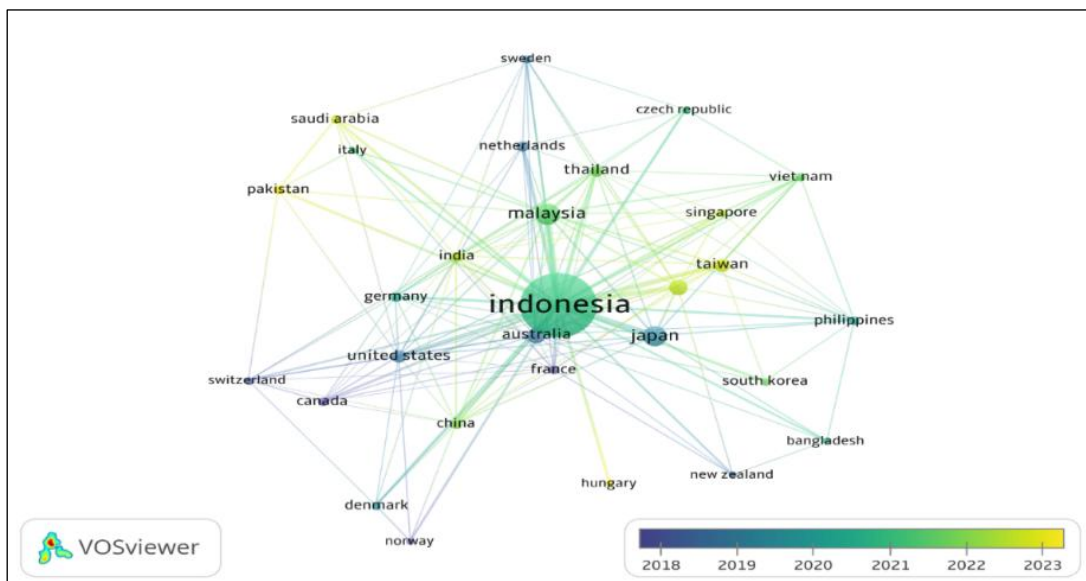


Figure 6. Analysis of Green Finance and Waste Management in Small and Medium Businesses in Productive Countries

Source: Author's work (2025)

Figure 6 above shows a country network of publications or research collaborations, with nodes representing individual nations and edges representing linkages. The network can display the geographic distribution, density, and diversity of the field's publications and research. Each country's publishing volume, or the total number of papers or research outputs produced there, is also displayed

in the data and graph. The size of the nodes can be used to gauge the volume of publications; larger nodes correspond to higher volumes of publications. Large nodes in nations like Australia, Malaysia, Japan, and Indonesia indicate that they publish a lot of material on the topic. The data and the image also show each country's publishing chronology, which is the duration or extent of the publications or research findings produced by that country. The publishing history can be shown using the colour of the nodes and edges; the years 2018–2023 are represented by a gradient from blue to yellow. More recent or increased publication activity in the relevant domains, such as Japan and Indonesia, is indicated by darker colours (H. Chen *et al.*, 2015).

Network Analysis

Network analysis can be done with various tools, but the most popular ones that scholars enjoy include Histcite Graph Creator, Pajek, Gephi, and VOSviewer. VOSviewer was chosen for this study because of its visualisation versatility and capacity to generate and present bibliometric maps. Users can construct and view linkages and genuine relationships using the program's text-mining capability. It makes sense for researchers and academics to use VOSviewer to create a comprehensive bibliometric map that shows the relationships between various components.

Network of Occurrence Keywords

The network of term occurrences represents research trends and study hotspots in a particular field (Tang *et al.*, 2018). A similar analysis is carried out to identify the words or phrases frequently included in the list of keywords or in the titles of publications being targeted. The discussion of keywords reveals how a particular field of study was developed by looking at the keywords used in the articles. Keywords also draw attention to the intellectual core of the article.

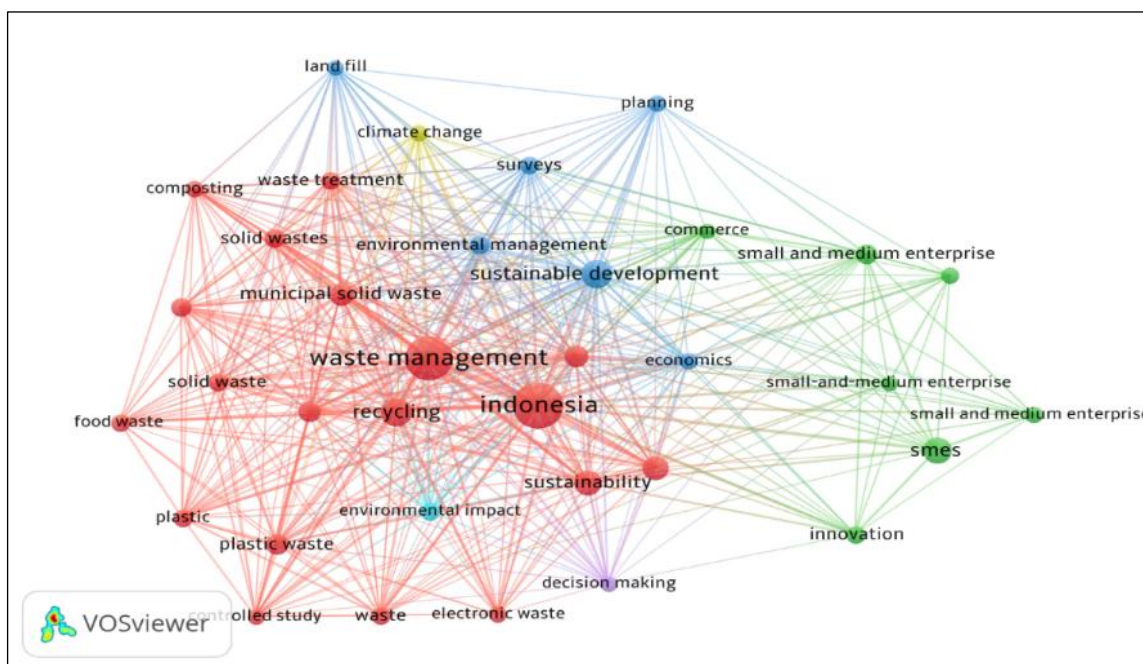


Figure 7. VOSviewer Analysis of the Top 40 Keywords
Source: Author's work (2025)

The type of analysis is co-occurrence; the unit of analysis is keywords; the counting method is complete counting. The results of the VOSviewer study show 9816 keywords in all articles on Green Finance and Waste Management in Small and Medium enterprises in Indonesia. Seven hundred fifty-five keywords meet this criterion when applying the minimum keyword occurrence requirement of 5. The minimal occurrence criterion is increased to 35 to highlight the most popular terms, and 40 keywords are chosen from the total pool. VOSviewer divides the top 40 keywords into six clusters, each identified by a distinct hue, as seen in Figure 7. Each cluster is limited to a certain number of objects or keywords.

Table 4. Top 40-Keyword Occurrence Analysis

Cluster	Color	Keywords	Occurrence (Frequency)	Total Linkage Strength
1	Red	Circular Economy (112), Composting (40), Controlled Study (35), Developing Countries (89), Electronic Waste (42), Food Waste (44), Indonesia (633), Municipal Solid Waste (87), Plastic (45), Plastic Waste (71), Recycling (168), Solid Waste (49), Solid Waste Management (55), Solid Wastes (55), Sustainability (118), Waste (51), Waste Disposal (79), Waste Management (543), Waste Treatment (51)	2,431 (sum)	5,195 (sum)
2	Green	Commerce (35), Innovation (47), Small and Medium Enterprises (69), Small and Medium Enterprises (40), Small- and- Medium Enterprises (35), TIME (38), SMEs (139)	403 (sum)	530 (sum)
3	Blue	Economics (42), Environmental Management (59), Land Fill (35), Planning (40), Surveys (48), Sustainable Development (172)	396 (sum)	1,135 (sum)
4	Yellow	Climate Change (38)	38	97
5	Purple	Decision Making (35)	35	92
6	Black	Environmental Impact (45)	45	128

Source: Author's work (2025)

Green finance and waste management in small and medium-sized businesses, the study's primary focus, are represented as key nodes in Clusters I, II, and III. A deeper look at the clusters reveals that, within the context of the map, the nodes of each cluster—that is, its keywords—show close relationships with one another. The keyword frequency rates within each cluster create the primary areas of focus identified in earlier studies. For example, Cluster I (red) highlights Waste Management and Financing (19 items), Cluster II (green) illustrates Small and Medium Enterprises (7 items), Cluster III (blue) illustrates Sustainability and Recycling (6 items), Cluster IV (yellow) highlights Climate Change (1 item), Cluster V (purple) highlights Decision Making (1 item), and Cluster VI (black) shows Environmental Impact (1 item). Each cluster highlights distinct study issues through its relationship with cluster keywords, indicating a significant research trend in the field of Green Finance and Waste Management in Small and Medium Enterprises.

Co-author Analysis

Most research projects need teamwork because one person alone cannot finish extensive studies independently. Scientific research initiatives heavily depend on efficient teamwork to obtain significant results. Bibliometric analysis strongly attaches to co-authorship studies because they show the degree

of cooperation between researchers in different fields. The degree of co-authorship between researchers reveals the degree of teamwork collaboration and the field's research development stage (Sharma *et al.*, 2022). The research investigates author and institutional co-authorship patterns by using VOSviewer software. The collaborative networks appear visually in Figure 9 (Cai & Guo,2021).

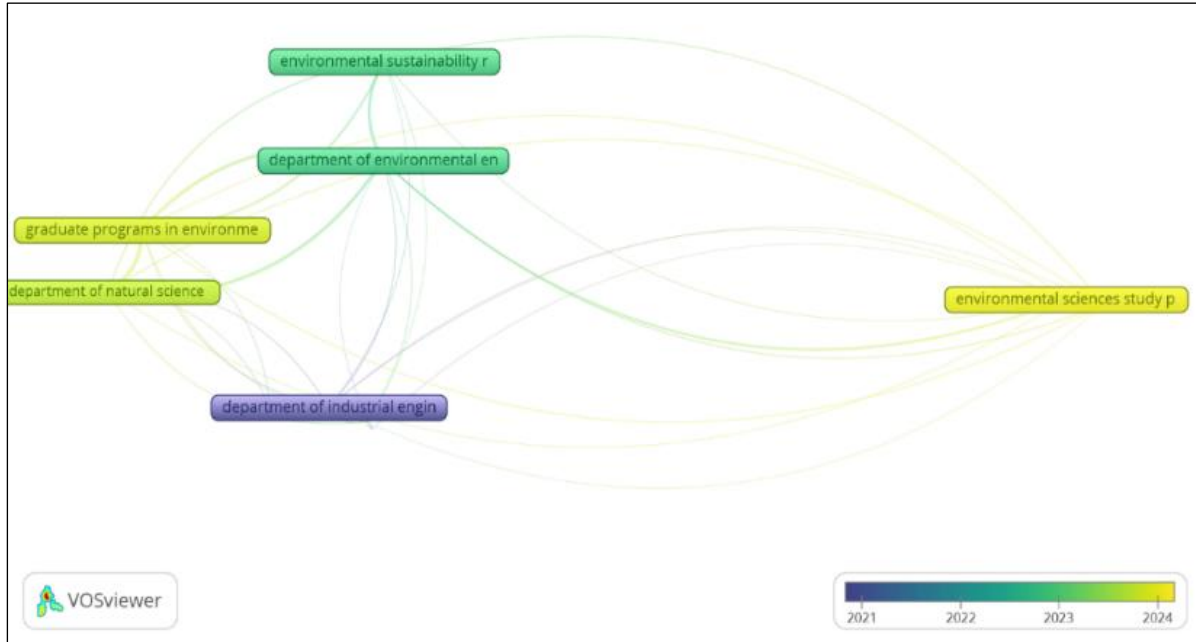


Figure 8. Co-authorship Network Visualization Map studies

Source: Author's work (2025)

CONCLUSION AND RECOMMENDATION

Green finance, which tackles the twin issues of promoting economic growth and halting climate change, has become vital in the global quest for sustainable economic development. This scientometric investigation shows the importance of green finance in promoting waste management in SMEs. This paper offers a thorough review of the development of green finance research. It offers important insights into how it might support sustainable business practices and spark the circular economy, making it a topic that is highly relevant to investors, researchers, and regulators.

The research production patterns of Green Finance and Waste Management in Small and Medium Enterprises were examined using bibliometric and network analysis, using insights from 25 years in Indonesia. More than 10,208 articles about green finance and waste management in small and medium-sized businesses were published between 2000 and 2025, according to publications included in the Scopus database. Using bibliometric and network analysis to identify the most important articles, new study clusters, and author collaborations is challenging despite the abundance of literature reviews on waste management in Indonesian small and medium-sized businesses. This advances the field of study by illustrating the connections between the most influential and highly ranked papers. It also provides an evaluation of the successful documents and other evaluation elements.

The findings of the study demonstrate the trends in green finance writing. The results show how far waste management and green finance research have come and how many countries, organizations, and publications have contributed. Several noteworthy pieces have been published between 2000 and 2025. The report states that waste management and green finance research in SMEs peaked in 2021, with the two most significant sources being the Journal of "IOP Conference Series Earth and Environmental Science" and "Aip Conference Proceedings." While Cordova M. and Suryawan I. received the most citations, Matsumoto Toru was the author with the most publications. The affiliate that contributed most to waste management and green financing in Indonesian small and medium-sized businesses was Universitas Indonesia, and the geographic distribution of publications showed that Indonesia had the most significant impact in this field.

In order to uncover important papers for further research, this study has recognized some of the recent green finance and waste management efforts. Identifying renowned scholars in green finance is crucial for establishing a foundation for further research. Table 3 presents the cluster analysis findings, identifying the primary study topics related to waste management and green finance in Indonesian small and medium-sized businesses, based on the significant connections between the terms within the clusters. However, keyword analysis indicates that low-frequency phrases indicate potential themes (topics) for additional study. It is one of the contributions of the research. The efficient use of VOSviewer for network analysis contributes to this study.

VOSviewer is not frequently used as a network analysis tool in green finance research. This work offers a manual for utilizing VOSviewer software for network and bibliometric research. There are definitely issues with how the study's results were arranged and presented. Some evaluation-related characteristics that were excluded from this study include the language of the articles (we only included English), the document kind (we excluded Editorial, Note, Short Survey, and Retracted), the publishing stage (we only included final), and the financial sponsor. The VOS viewer was used for this study out of the various network analysis tools available. This study recommends that future research be conducted using databases such as Publish or Perish, Web of Science, IEEE Xplore, and Springer, as it solely uses data from the Scopus database. Furthermore, since Gephi, Pajeck, and Hist Cite only accept data from the Web of Science, we advise future researchers to employ these and other network analysis tools..

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Understanding Halal Food Consumption: A Systematic Literature Review of Theoretical Frameworks, Determinants, and Research Challenges (2018-2024)

Yusuf Enril Fathurrohman^{1,2*}, Enikő Kontor³

¹Doctoral School of Management and Business, Faculty of Economics and Business, University of Debrecen,
Böszörményi Str. 138, Debrecen, H-4032, Hungary

²Agribusiness Study Program, Faculty of Agriculture and Fisheries, Universitas Muhammadiyah Purwokerto
Jl. KH. Ahmad Dahlan, Dukuhwaluh, Kec. Kembaran, Kab. Banyumas, Jawa Tengah 53182, Indonesia

³Faculty of Economics and Business, Institute of Marketing and Commerce, University of Debrecen,
Böszörményi Str. 138, Debrecen, H-4032, Hungary

yusuf.enril@mailbox.unideb.hu

(*) Corresponding Author

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ABSTRACT

This study synthesizes current research on consumer behavior and purchase intention in the halal food sector by conducted a systematic literature review of 37 articles (2018-2024) from the Scopus database using the PRISMA approach. Results show that the TPB is the most frequently applied framework, often extended with additional variables. Key determinants of purchase intentions and decisions include TPB variables, religiosity, halal awareness, and halal certification. Despite these findings, the literature faces challenges such as small samples sizes, limited geographic coverage, over-reliance on TPB, and certification inconsistencies. The study contributes by consolidating current evidence on consumer behavior in the halal food sector and highlighting the pivotal roles of religiosity and halal awareness. Practically, findings guide businesses, policymakers, and marketers in designing targeted strategies, enhance consumer trust, and expanding halal food markets. Future research should adopt larger, more diverse samples, and cross-cultural analyses to address existing gaps.

Keywords:

Consumer behavior, halal food, PRISMA, purchase intention, systematic literature review

ABSTRAK

Penelitian ini bertujuan untuk mensintesis penelitian terkini mengenai perilaku konsumen dan niat beli makanan halal melalui tinjauan literatur sistematis terhadap 37 artikel (2018-2024) dari basis data Scopus menggunakan pendekatan PRISMA. Hasil menunjukkan bahwa TPB merupakan kerangka yang paling sering digunakan, sering digabungkan dengan variabel tambahan. Faktor utama dari niat dan keputusan pembelian meliputi variabel TPB, religiositas, kesadaran halal, dan sertifikasi halal. Meskipun demikian, literatur yang ada menghadapi tantangan seperti kecilnya ukuran sampel, cakupan geografis terbatas, dominasi TPB, dan ketidakonsistenan sertifikasi. Penelitian ini berkontribusi dengan menyajikan bukti terkait perilaku konsumen di sektor makanan halal dan menekankan peran penting religiositas serta kesadaran halal. Secara praktis, temuan ini memberikan panduan bagi pelaku bisnis, pembuat kebijakan, dan pemasar dalam merancang strategi terarah, meningkatkan kepercayaan konsumen, dan memperluas pasar makanan halal. Penelitian selanjutnya disarankan menggunakan sampel yang lebih besar dan beragam serta analisis lintas budaya untuk mengatasi gap yang ada.

Kata Kunci:

Makanan halal, PRISMA, niat pembelian, perilaku konsumen, systematic literature review

INTRODUCTION

Worldwide growth in halal food markets reflects demographic shifts among Muslim populations and a broader understanding of halal certification among consumers regardless of religious background (Bonne & Verbeke, 2008; Wilson & Liu, 2010). It is also aligned with, Sungnoi & Soonthonsmai, (2024) which stated that this growth is caused not only by the increasing global Muslim population but also by rising disposable incomes and greater awareness of halal principles among consumers. Additionally, the demand for safe and nutritious food continues to rise, further enhancing the halal product market (S. Khan *et al.*, 2022). A recent study highlighted that the global halal food market is projected to more than double, increasing from USD 2,339.1 billion in 2023 to USD 5,643.3 billion by 2030 (Rahman *et al.*, 2024). As the market continues to evolve, businesses are increasingly looking for halal certification to capture various consumer desires, highlighting the importance of authenticity and quality insurance in meeting growing demand.

Halal food is defined as food that is allowed under Sharia (Islamic principles) and aligns with the concept of Tayyib, which emphasizes cleanliness and purity in food production (Alzeer *et al.*, 2018). Muslims demonstrate a strong awareness regarding the value of following halal food practices and consistently adhere to this dietary practice wherever they reside. Thus, the presence of halal logo becomes necessary on this occasion. Moreover, the rigorous standards and ethical considerations inherent in halal food production have attracted attention from non-Muslim consumers looking for good quality and ethically produced food options (Wilson & Liu, 2010). Consequently, the halal food industry has expanded its influence on global food production practices and has contributed to the diversity of the international food market (Bonne & Verbeke, 2008).

The intake of halal foods extends beyond being a religious requirement for Muslims, it is a matter of ethical and health-conscious decision-making (Wilson & Liu, 2010). As consumer preferences change, understanding consumer behavior and purchase intentions in the halal food market is increasingly important for stakeholder, including business actors, government authorities, and marketing practitioners. Research suggests that various theoretical frameworks, such as The Theory of Planned Behavior (TPB) (Ajzen, 1991), its extended and integrated models, the Theory of Interpersonal Behavior (TIB) (Bawono *et al.*, 2022), and other behavioral models have been used to examine consumer behavior in this domain.

Despite numerous studies on halal food consumption, several gaps remain. First, existing studies lack an integrated synthesis of theoretical frameworks used to explain halal food consumption behavior. Second, the Theory of Planned Behavior and individual factors, such as religious beliefs (Nurhayati & Hendar, 2020) and halal awareness (Febriandika *et al.*, 2023) dominate existing studies, while other theoretical perspectives receive relatively limited attention. Third, many studies have limited geographical diversity and reducing the generalizability of findings. A deeper exploration of these issues is necessary to develop a more robust approach to studying consumer decision-making

behavior in the halal food sector. Given these considerations, it is important to investigate emerging perspectives on consumer behavior in halal food choices. This exploration is critical for understanding the various influences on purchasing decisions for halal food products and their challenges. To achieve this, the present study has two main research questions:

RQ1 : What are the theoretical frameworks and key factors that influence consumer behavior and purchase intention in the halal food market?

RQ2 : What challenges and limitations are commonly encountered in understanding consumer behavior in the halal food industry?

Based on this background, this study aimed to synthesize existing research and offer structured insights into key questions through a Systematic Literature Review (SLR) using the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) Protocol (Page *et al.*, 2021). The SLR methodology guided by the PRISMA framework ensures a transparent and replicable process for selecting relevant studies. This method facilitates a systematic review of existing research and helps categorize key theoretical frameworks, influencing factors, as well as the challenges and limitations faced by researchers. Through this analysis, The objective of this research is to systematically examine available knowledge, uncover areas that require further exploration, and offer suggestions for subsequent research.

RESEARCH METHODS

The systematic Literature review (SLR) method was implemented in a structured and systematic manner following established research protocols. This process involved reviewing existing studies, conducting evaluations, classifying the results, and categorizing relevant evidence from previous research. To ensure transparency, this study used the Preferred Reporting Items for Systematic Reviews (PRISMA) approach, documenting the rationale for conducting review, the procedures undertaken by the authors, and the key outcomes obtained (Page *et al.*, 2021) and in this study used the 2020 version. Still Page *et al.*, (2021) explained that PRISMA 2020 establishes enhanced reporting standards for systematic reviews, covering improvements in identifying, selecting, evaluating, and synthesizing relevant studies. The PRISMA statement serves as the foundation for conducting a structured systematic review and guiding the database collection process (Abelha *et al.*, 2020).

The database search process involves multiple stages, such as selecting an appropriate digital library and defining search queries. In this study, Scopus was chosen as the primary digital library because it offers high-quality research data and supports a range of activities, including research evaluation, trend analysis, science policy reviews, and university ranking assessments (Baas *et al.*, 2020). Scopus provides comprehensive and detailed content, which makes it a valuable resource for conducting in-depth research (Pranckutė, 2021). Additionally, it features individual author profiles, institutions, and journal sources, enhancing its practicality for academic purposes (Máté *et al.*, 2024).

Scopus is also estimated to be 60% larger than Web of Science (WoS), demonstrating its status as the largest academic database available (Zhao & Strotmann, 2015).

The next stage consisted of executing a search using the query “Title-Abstract-Keywords”. This process involved creating a focused search list and, prioritizing publications that aligned with our initial bibliographic inquiries. The search queries were built around title-abstract-keywords, incorporating a variety of terms, synonyms, and abbreviations related to “consumer behavior”, “purchasing intention”, and “halal foods”. To prevent potential duplication of articles, search phrases were designed thoughtfully. For keyword “consumer behavior”, we used the term (“consumer behav*”) to account for both “behavior” and “behaviour” spellings. For purchase intention, the term (“purchase intent*”) was used to include both “purchase intention” and “purchase intentions”. Similarly, with “halal foods” we use (“halal food*”) to include “halal food” and “halal foods”. Taking these into consideration, the following queries were created: ("consumer behav*" OR "purchase intent*") AND ("Halal Food*"). Figure 1 illustrates the complete process in detail.

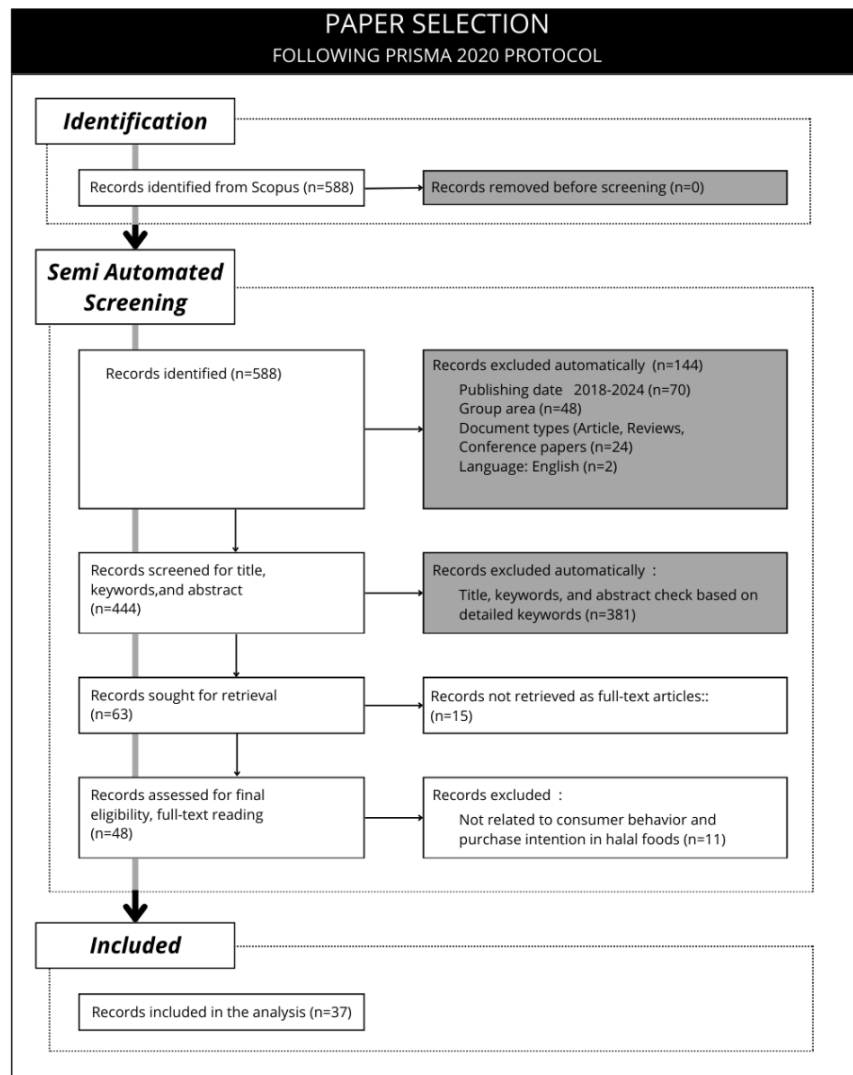


Figure 1. SLR Framework consisting PRISMA Protocol
Source: Own Elaboration

Study Selection Process

As of the search date (January 12, 2025), 588 records were identified based on general inclusion criteria from queries, and a reviewer extracted the data in Excel. No duplicates were found; therefore, no articles were excluded. The automated screening process was carried out according to predefined inclusion criteria. The study selection consisted of several stage: identification, semi-automated screening including eligibilty and inclusion. During the semi-automated screening stage, articles were filtered based on predefined inclusion criteria, including publication year, subject area, document type, and language. From initial 588 records, 144 articles were excluded based on including criteria.

The remaining 444 articles were screened based on title, keywords, and abstract using predefined keywords related to consumer behavior, purchase intention, and halal food. During this stage, 381 records were excluded, leaving 63 articles for full-text assessment. Subsequently, 63 articles were sought for retrieval. However, 15 articles could not be accessed in full-text format and were excluded. The remaining 48 articles underwent full-text eligibility assessment. After manual screening, 11 studies were excluded due to irrelevance to consumer behavior and purchase intention in halal food. Finally, 37 articles were included for futher analysis. Two reviewers independently screened the articles based on the inclusion criteria without the use of automation tools, resolving disagreement through discussion.

Before conducting further analysis, the papers were mapped based on their research locations to acquire a deeper insight into the geographical context of the topic being chosen. The selected papers were also mapped according to the source of the journals, including Q-Rank, H-Index, Publisher, and Scope. Additionally, a Google Citation Score (GCS) approach was used to enrich the information on which papers had the most citations as references in studies concerning consumer behavior, purchase intention, and halal food. Furthermore, differences across studies were explored based on a theoretical framework, key behavioral constructs, and research constraints.

Inclusion and Exclusion Criteria

The inclusion criteria applied in this study were as follows:

1. Articles published between 2018 and 2024.
2. Articles indexed in Scopus.
3. Articles written in English.
4. Articles limited to the following subject areas: business, management, and accounting; social sciences; Economics, Econometrics and Finance; multidiciplinary; Agricultural and Biological Sciences, Psychology.
5. Document types limited to Article, review, and Conference Paper.
6. Studies focusing on consumer behavior, and purchase intention related to halal food
7. Articles selected based on title, abstract, and keyword

The exclusion criteria were as follows:

1. Non-English articles
2. Book chapters, books, editorials, short surveys, and letters
3. Duplicate articles
4. Studies not related to halal food consumption (the study excluded articles focusing on pharmaceuticals, banking, cosmetics products, services, and general consumer products)
5. Articles not focusing on consumer behavior and purchase intention

Quality Assessment

To ensure the quality of selected articles, the studies were assessed based on several criteria:

1. Journal ranking based on Scopus quartile.
2. Relevance to research objectives.
3. Sample size.
4. Theoretical framework used.

This quality assessment helped ensure that only relevant and high-quality studies were included in the analysis.

Data Extraction

Data extraction was conducted systematically and the following information was extracted from each selected article:

1. Author and year.
2. Research location.
3. Theoretical frameworks.
4. Key variables.
5. Sample size.
6. Study limitations.

Thematic Categorization

The selected articles were categorized into thematic groups based on research focus. The categorization process involved reviewing each article and grouping them into the following themes:

1. Theoretical frameworks used in halal food consumption studies.
2. Determinants of consumer behavior and purchase intention.
3. Research challenges and limitations in halal food consumption studies.

This thematic categorization facilitated systematic analysis and comparison across studies.

RESULT AND DISCUSSION

Research Location by Country

The research locations were analyzed according to the 37 selected articles. Research location is an important variable for understanding where the research was conducted. In addition, this

comprehensive understanding is used to determine the geographical context that influences consumer behavior, purchase intentions, and preferences for halal foods. Data obtained from existing articles illustrate the distribution of research from various countries that reflects global attention towards issues related to consumer behavior in halal foods. Figure 2 is a summary of the number of countries in which the research was conducted.

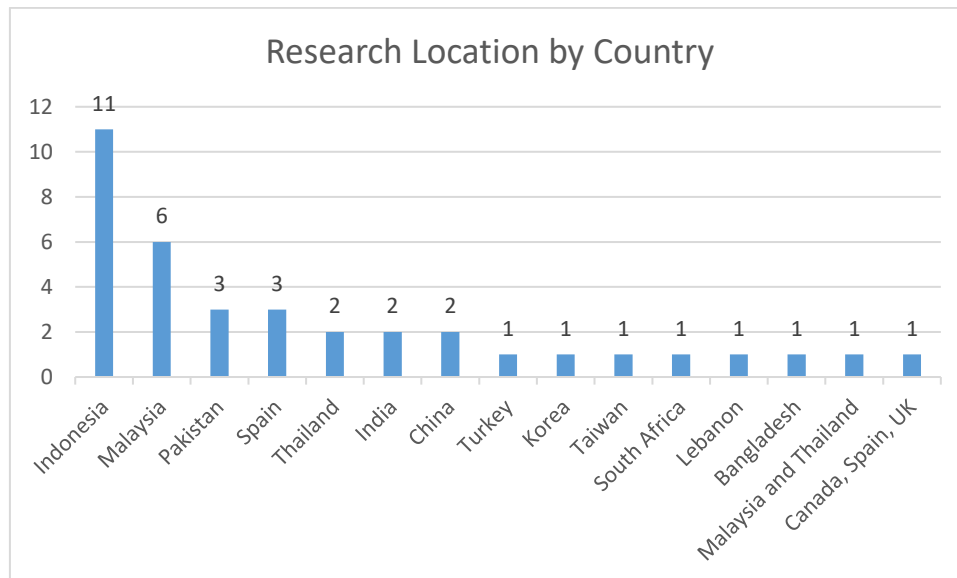


Figure 2. Distribution of Research Location by Country

Source: Author's work (2025)

The distribution of research location shows that Indonesia leads with 11 articles, reflecting the strong emphasis on halal-related issues in the largest nation by Muslim population worldwide. Malaysia follows with six articles, underscoring its role in developing a globally recognized in halal industry. Pakistan and Spain contribute three articles each, illustrating that halal issues are gaining relevance both in Southeast Asian nations with predominantly Muslim populations and in regions where Muslims are a minority, driven by population growth and the expansion of halal export markets. Meanwhile, Thailand, India, and China, despite being non-Muslim-majority countries, each contributed two articles, demonstrating heightened recognition of halal food among consumers of all backgrounds, alongside the broader acceptance of halal logo as a standard for quality and hygiene.

Other countries such as Turkey, South Korea, Taiwan, South Africa, Lebanon, and Bangladesh each produced one article, while cross-country studies, such as a involving Malaysia and Thailand, and among Canada, Spain, and the United Kingdom highlight the importance of comparative perspectives in understanding halal markets within multicultural contexts. Overall, the distribution of research underscores the centrality of Muslim-majority countries in halal studies while also signaling the rising global economic significance of halal market. These findings point to the need for more nuanced insights into halal consumer behavior across diverse cultural and geographical settings.

Journal Features

The review encompassed 37 studies across 22 peer-reviewed journals, including six journals that published multiple articles within the set of reviewed studies (table 1). The primary scope areas of these journals are business, management, and marketing; food, nutrition, and halal studies; social sciences and humanities; Islamic studies and economics; sustainability and environment; and multidisciplinary business and economics.

Table 1. Characteristic of Journal publishing at least 2 of the 37 reviewed studies.

Journals	Number of Papers	Q Ranking (2023)	H-Index	Publisher	Scope
Journal of Islamic Marketing	8	Q2	55	Emerald Group Publishing Ltd.	Marketing and its associated sub-disciplines
British Food Journal	4	Q1	102	Emerald Group Publishing Ltd.	Consumption, Business, Management and Marketing, Health, welfare and education, Sustainability and Environment
Innovative Marketing	3	Q3	20	LLC CPC Business Perspectives	Utilization of innovative marketing instruments, their nature, varieties, functions, efficiency, etc.
Journal of Foodservice Business Research	2	Q2	37	Taylor and Francis Ltd.	Various disciplines, including management, marketing, finance, law, food technology, nutrition, psychology, information systems, anthropology, human resources, and more.
Uncertain Supply Chain Management	2	Q2	33	Growing Science	Supply Chain Management
International Journal of Supply Chain Management	2	Not Rank (Q3 But Discontinued in Scopus as of 2020)	25	ExcelingTech	Supply Chain Management in manufacturing and services.

Source: Author's work based on Scopus Database and Scimagojr.com (2025)

This study used scientometric analysis (Czimre *et al.*, 2024) with two key metrics to evaluate the scientific impact of papers that focused on consumer behavior, purchase intention, and halal foods. The metrics used include the journal's quartile ranking (Quartiles, 2023) and the H-Index, a measure indicating how many articles (h) in a journal have been cited at least h times. These approaches were used to determine the placement of the journals publishing the articles. The findings reveal that most papers were published in Q2 and Q3 journals (six articles each) with a wide range of H-index values, predominantly within the 0-50 range (figure 3).

The analysis of the top six journals (table 1) highlights the diverse and multidisciplinary fields of halal research. Leading the publications, the *Journal of Islamic Marketing* features eight of the reviewed studies, focusing on its role as a specialized journal for Islamic perspectives in marketing, supported by a Q2 ranking and 55 for the H-Index. The British Food Journal follows four articles,

reflecting its interdisciplinary scope, which links halal research with consumption, sustainability, and health. It is also supported by its Q1 ranking and a large H-Index of 102.

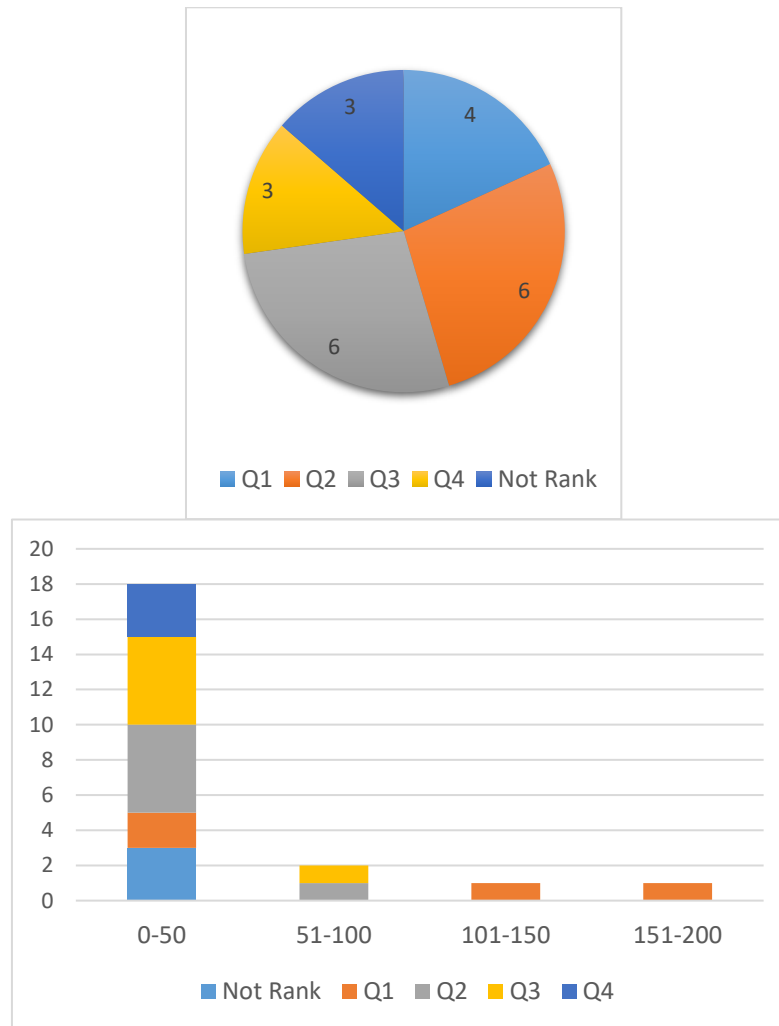


Figure 3. The distribution of journals publishing the review studies based on their Q rankings and H-Index Values

Source: Author's work (2025)

Other notable contributors include *Innovative Marketing* with emphasis on the creative marketing approach and specialized journals, such as the *Journal of Foodservice Business Research*, *Uncertain Supply Chain Management*, and the *International Journal of Supply Chain Management*, which explore the connection of halal research with supply chain management, foodservice operations, and other fields.

Global Citation Score (GCS)

The Global Citation Score (GCS) is a valuable formula for identifying recent or innovative publications. It reflects the overall number of citations a publication has garnered from various databases (for this paper, see Scopus). Articles achieving high GCS scores are often recognized as impactful in their fields (Knocke & Yang, 2008), provide a basis for subsequent research. However, it is important to note that a high GCS score does not always represent and equate to the substantial scientific contribution of the impact within a specific discipline (Ejmont, Gladysz, Corti, *et al.*, 2020).

The Normalized Global Citation Score (GCS) was used to refine the analysis and identify influential and impactful papers within the field (Ejmont, Gladysz, & Kluczek, 2020). By normalizing the GCS, groundbreaking publications with substantial potential for scientific contribution and influence on the analyzed topic can be highlighted. However, not all influential papers exhibit high cumulative GCS values (i.e., total citations in Scopus). Most of these have attracted significant attention from the scientific community.

This formula evaluates publications by comparing their average annual citations relative to their presence in the Scopus database (up to 2024). Using this approach, the top ten papers receiving significant attention have been identified, showcasing their prominence and influence since their initial publication. Furthermore, the analysis underlines emerging studies that rapidly gain recognition in the field (Strozzi *et al.*, 2017). The ten most-cited papers, ordered by normalized GCS values, are displayed in Table 2.

Table 2. Top 10 most cited articles ranked by normalized GCS

Rank	Title	Authors and Year	Journal	GCS	Normalized GCS
1	The influence of halal awareness, halal certificate, subjective norms, perceived behavioral control, attitude and trust on purchase intention of culinary products among Muslim costumers in Turkey	(Aslan, 2023)	International Journal of Gastronomy and Food Science	29	10
2	Personal intrinsic religiosity and product knowledge on halal product purchase intention: Role of halal product awareness	(Nurhayati & Hendar, 2020)	Journal of Islamic Marketing	109	9
3	Indonesian Millennials' Halal food purchasing: merely a habit?	(Amalia <i>et al.</i> , 2020)	British Food Journal	83	6.2
4	Non-Muslim consumers' intention to purchase halal food products in Malaysia	(Lim <i>et al.</i> , 2022)	Journal of Islamic Marketing	20	4
5	The acceptance of halal food in non-Muslim countries: Effects of religious identity, national identification, consumer ethnocentrism and consumer cosmopolitanism	(Wilkins <i>et al.</i> , 2019)	Journal of Islamic Marketing	74	3.83
6	Factors influencing Muslim and non-Muslim consumers' consumption behavior: A case study on halal food	(Billah <i>et al.</i> , 2020)	Journal of Foodservice Business Research	46	3.8
7	Consumer behaviour towards willingness to pay for Halal products: An assessment of demand for Halal certification in a Muslim country	(Ahmed <i>et al.</i> , 2019)	British Food Journal	68	3.5
8	Gen-Z Muslims' purchase intention of halal food: Evidence from Indonesia	(Febriandika <i>et al.</i> , 2023)	Innovative Marketing	20	3.5
9	Determinants of halal food purchase decisions for Go Food and Shopee Food users	(Nurkhin <i>et al.</i> , 2023)	Innovative Marketing	9	3.5
10	Factors affecting consumers' intention towards purchasing halal food in South Africa: a structural equation modelling	(Bashir <i>et al.</i> , 2019)	Journal of Food Products Marketing	102	3.17

Source: Author's work based on Scopus Database (2025)

The top 10 most-cited articles, as ranked by normalized GCS, are presented in Table 2, highlighting the significance and influence of contemporary research on halal food topics. Articles with a high GCS but lower normalized GCS typically represent fundamental studies that have consistently influenced academic discourse over an extended period. For instance, Bashir *et al.*, (2019) the Journal of Product Marketing has a GCS of 102 but normalized GCS (3.17), which demonstrates its long-term influence in understanding halal food purchase intention in South Africa since its publication. Furthermore, Nurhayati & Hendar, (2020) the Journal of Islamic Marketing, which has the second highest GCS of 109, has a normalized GCS of 9, reflecting the steady influence regarding the importance of religiosity and product knowledge in shaping halal purchase intention since 2020. These studies continue to serve as key reference points for ongoing research in this field.

In contrast, articles with a relatively lower GCS but high normalized GGCS values highlight their rapid emergence and contemporary relevance. For example, Aslan, (2023) the International Journal of Gastronomy and Food Science have the highest normalized GCS of 10, despite its modest cumulative GCS of 29. It identifies strong immediate attention to its focus on Turkey's halal culinary products and factors influencing purchase intentions in a relatively short period. Similarly, Febriandika *et al.*, (2023) and Nurkhin *et al.*, (2023) with the same values of normalized GCS (3.5), highlights the increasing attention paid to young Muslim generation consumer behavior and the role of digital platforms such as Go-Food and Shopee-Food in halal product purchase decisions. The results highlight the necessity for continued research to capture the global dynamic nature of halal markets.

Other notable contributions include Amalia *et al.*, (2020) and Ahmed *et al.*, (2019) in the British Food Journal, reflecting strong research on the habits and willingness to pay for halal products particularly in Indonesia and other Muslim-majority countries. Additionally, research has focused on non-Muslim consumer behavior Lim *et al.*, (2022) and Wilkins *et al.*, (2019) has underscored the growing acceptance of halal products in multicultural and non-Muslim contexts.

The metrics, both GCS and normalized GCS, provide a holistic knowledge of an article's impact. While a High GCS reflects long-term influence, a normalized GCS highlights the emerging relevance of recent studies. These metrics portray a whole picture of how research evolve, revealing which studies have shaped the foundational understanding of halal markets and which are leading topics today. Both GCS and normalized GCS are critical for identifying key contributions and guiding future research priorities in the dynamic and expanding fields of halal food studies.

Frameworks and Variables Commonly Used

Understanding the theoretical frameworks and key determinants influencing consumer behavior and purchase intention in the halal food sector is important for businesses, government authorities, and researchers who aim to develop effective strategies. Exploring these factors can offer insights into consumers' priorities and decision-making processes. Additionally, identifying the

theoretical frameworks frequently used in studies on halal food consumer behavior provides a fundamental understanding of the underlying mechanisms that drive these behaviors. This systematic review aims to synthesize findings from 37 articles emphasizing the theoretical models applied in the studies and the factors influencing consumer behavior especially purchase intention (commonly used), actual and buying behavior, and word-of-mouth. The data summarized in table 3 highlight the most common frameworks and variables studied in halal food research.

Table 3. Frameworks and Variables Commonly Used in the research

Frameworks and Variables	Number of Articles
Frameworks	
The Theory of Planned Behavior (TPB)	5
The Extended Theory of Planned Behavior (TPB)	7
Mixed Model with Theory of Planned Behavior (TPB)	2
Other Model	7
Others (not Mentioned the Model Name)	16
Variables*	
Attitude	21
Religiosity	16
Subjective Norms	15
Perceived Behavioral Control	14
Halal Awareness	11
Halal Certification	6
Price (Value)	5
Habit	4
Trust	3
Halal Logo	3
Health Consciousness	3
Knowledge	3

*Appears in more than 2 articles

Source: Author's work (2025)

Table 3 indicates that the Theory of Planned Behavior (TPB), its extended versions, and its combination with other models are the most frequently used models in studies on consumer behavior in the halal food market. The standard TPB used in five articles (Lim *et al.*, 2022; Marmaya *et al.*, 2019; Pradana *et al.*, 2024; Sahir *et al.*, 2021; Zulkfli *et al.*, 2020) provides a robust structure for understanding behavior by considering TPB variables such as attitude, subjective norms, and perceived behavioral control towards purchase intention. Some add moderation, such as acculturation (Lim *et al.*, 2022) and halal awareness (Sahir *et al.*, 2021). The Extended TPB, employed in seven studies, goes further by integrating additional variables such as religiosity, halal awareness, halal certificate, trust, (Aslan, 2023; Bashir *et al.*, 2019; El Ashfahany *et al.*, 2024; Viera Nu'riza Pratiwi *et al.*, 2024) halal knowledge, and habit (Nawang *et al.*, 2023). This extension reflects the need for fundamental frameworks to adapt to other variables regarding specific cultural and religious contexts of halal food consumption. Furthermore, the inclusion of mixed models (two papers) between TPB and other models is used, such as TPB with theory of interpersonal behavior (Amalia *et al.*, 2020), TPB with the unified theory of acceptance and utilization of technology (UTAUT2) (Nurkhin *et al.*, 2023). There are also other theoretical frameworks (seven studies), such as stimuli-organism-response (SOR) theory (Sthapit *et al.*, 2024), Interpretive Structural Modeling (ISM) (W. Khan *et al.*, 2020), Theory of Interpersonal Behavior

(TIB)(Bawono *et al.*, 2022), Technology Acceptance Model (TAM) (Al-Banna, 2019), Marketing Mix Functions (4Ps) and consumers' internal factors (Syukur & Nimsai, 2018), the ATAR model (Awareness, Trial, Availability, Repeat Purchase) (Shaari *et al.*, 2020), and an Extended Model of Goal-Directed Behavior (EMGB) (Paudel *et al.*, 2024). The mixed and other models suggest integration into broader behavioral or sociocultural dimensions. However, the largest category (16 studies) does not mention that specific frameworks could be exploratory studies that used various variables out of the robust frameworks, such as TPB.

Regarding the key factors/variables that influence consumer behavior or purchase intention, attitude, as a part of the TPB model, is the most frequently studied factor, appearing in 21 articles. This is followed by religiosity as a variable that is most commonly used in extended TPB with 16 studies. This indicates how adherence to faith influences consumers' decisions to purchase halal food products. This is similar to other TPB variables: subjective norms (15 studies) and perceived behavioral control (14 studies). Halal awareness (11 studies) emphasized the importance of consumer knowledge about halal principles and certifications. Other variables are often used, but to a lesser extent, such as halal certification (six studies), price (five studies), and habit (four studies).

Challenges and Limitations Commonly Faced

Research on the consumer behavior of halal foods, including purchase intention, has gained significant attention in recent years, especially in the emerging global halal market. However, research in this field encounters several challenges and limitations that affect the validity, generalizability, and applicability of the findings. These challenges mostly include methodological issues, demographic constraints, theoretical gaps, and market-related obstacles. Understanding these limitations is important for suggesting future research directions and for improving the overall quality of halal food consumer studies. By Categorizing the limitations found across 37 articles into four main themes, we identified key areas that require further exploration. Table 3 summarized the categories of challenges and limitations from the 37 articles, where one article may contain more than one challenge.

Table 4. Categories of Challenges and Limitations

Category	Number of Articles
Methodological Constraints	29
Contextual and Demographic Limitation	26
Theoretical and Conceptual Gaps	24
Halal Market and Certification Challenges	18

Source: Author's work (2025)

Table 4 discusses the categories of challenges and limitations across 37 studies, which reveals that methodological constraints are the most prevalent issue and impact 29 out of 37 studies. Most articles had issues with sample sizes, sampling techniques, or data collection methods, making it difficult to generalize the findings. Additionally, the dominance of cross-sectional research limits its ability to explore causal relationships. These methodological limitations underscore the need for stronger research designs and more diverse sampling approaches to ensure accurate representation of

halal consumer behavior. Another key challenge identified was contextual and demographic limitations. It also becomes a challenge and has 26 studies that have faced the same problems. It highlights a limited focus on specific populations in Muslim majority country, specific age groups like Millennials, homogeneous cultural and religious backgrounds. This narrow scope limits our understanding of cross-cultural consumer behavior, as attitudes towards halal food may differ based on religious affiliation, economic status, or exposure to halal marketing. This indicates that existing research does not fully capture the complexity of halal food consumer behavior, particularly in multicultural societies where halal food consumption behavior extends far beyond Muslim consumers.

Similarly, theoretical and conceptual gaps were found in 24 studies, where the researchers relied on the Theory of Planned Behavior (TPB), and some of them did not integrate additional factors that suit the context. Meanwhile, TPB provides a strong foundation for examining consumer behavior and the purchase-decision-making process and does not fully explain other impactful variables such as health consciousness, price, and ethical concerns. Most studies also lack an exploration of the role of moderating or mediating variables that could offer deeper knowledge into the complex relationships between potential variables in consumer behavior regarding halal food products. Finally, halal market and certification challenges were identified in 18 studies, demonstrating persistent issues regarding the credibility of halal certification, inconsistent halal standards, and limited access to certified halal products, especially in countries with Muslims as a minority. This challenge suggests that trust and transparency in the halal certification process remain critical concerns in the global halal food industry.

Discussion

This study investigated consumer behavior and purchase intentions regarding halal foods. This provides recent knowledge to develop research perspectives in the context of the halal market. A systematic literature review using the PRISMA protocol was conducted to evaluate the frameworks and factors/variables commonly used, and the challenges faced in consumer behavior and purchase intention of halal foods. This study offers a comprehensive overview of various perspectives and trends in consumer behavior research in the halal market from 2018 to 2024. By conducting a systematic literature review, this study identifies and synthesizes relevant literature on halal foods. It prevailed in theoretical frameworks and uncovered critical determinants shaping consumer behavior and purchase intention in the halal food market. Furthermore, it seeks to provide insight into the challenges that researchers face when analyzing consumer behavior within this industry.

According to the theoretical framework results (table 3), The Theory of Planned Behavior (TPB) has emerged as one of the most prevalent frameworks. It was used in 14 studies, including original, extended, and mixed models. This framework, initially proposed by Ajzen, (1991) and, has been widely used because of its ability to explain consumer decision making through three primary variables: attitude, subjective norms, and perceived behavioral control. Some are still using this original model, and others have tried to add the variables or mix them with other models. For instance, Marmaya

et al., (2019) used the original model and examined the TPB variables towards behavioral intention and Pradana *et al.*, (2024) used TPB variables towards purchase intention and purchase intention towards purchase behavior. It was also applied in, Sahir *et al.*, (2021) which used the effect of TPB variables towards purchase intention and continued to see the effect of purchase intention towards Buying Behavior with Halal Awareness as a moderator. Uniquely, this model can be applied and adjusted based on the object of the research like what Lim *et al.*, (2022) did, as do the TPB variables from the Non-Muslim Point of View. The prevalence of TPB across multiple studies underscores its robustness and versatility in explaining consumer decision-making in the halal food market. This dominance also suggest that future research should consider both reinforcing and critically evaluating TPB-based approach to ensure comprehensive insights.

Several studies have extended TPB by incorporating additional variables, such as religiosity, halal awareness, halal knowledge, and habits. Aslan, (2023) examined the role of halal certificates and trust in addition to TPB variables, demonstrating that trust significantly mediates the relationship between halal certification and purchase intention. Similarly, the expanded TPB integrates halal awareness and its impact on purchasing intention and its direct impact towards buying behavior (Bashir *et al.*, 2019). More complex extended TPB models were performed (El Ashfahany *et al.*, 2024) because religiosity plays a role as both a construct and moderator, and the relationship between variables is slightly different from ordinary TPB frameworks. The extended TPB also performs with other models, such as the Theory of Interpersonal Behavior, (Amalia *et al.*, 2020) with additional variables, such as religiosity and habit. Nurkhin *et al.*, (2023) expanded TPB with the unified theory of acceptance and utilization of technology (UTAUT2), halal awareness, religiosity, financial literacy and halal literacy, demonstrating the expanding complexity of consumer decision-making in the digital food marketplace.

Beyond the TPB, other frameworks have been applied to explore and examine the different dimensions of consumer behavior and purchase intention towards halal foods. The SOR (Stimuli-Organism-Response) model highlights how stimuli such as learning about halal food culture, conviviality, and food experience intensification influence experiential satisfaction and memorable food experiences which ultimately affect purchase intention (Sthapit *et al.*, 2024). This aligns with the increasing emphasis on experiential marketing in halal food markets. Meanwhile, TAM (the Technology Acceptance Model), as seen in Al-Banna, (2019) focus on perceived ease of use, perceived usefulness together with halal label, and religious knowledge, impact habit and is a key determinant of purchase intention. This kind of model shifts towards an interdisciplinary approach, combining behavioral, technological, and psychological factors to predict consumer choices. The Extended Model of Goal-Directed Behavior (EMGB) was also used to integrate emotional responses (desire) and past behavior frequency to predict halal food purchase intention (Paudel *et al.*, 2024). There is also a framework that uses Marketing Mix Functions (4Ps) and consumers' internal factors to explore their connection towards purchase intention (Syukur & Nimsai, 2018). Interestingly, a study opted for an

alternative model that reflects the need for more comprehensive explanations of consumer behavior, such as the Interpretive Structural Modeling (ISM) approach used in W. Khan *et al.*, (2020). This study maps the hierarchical relationships between enabling factors such as brand origin, halal labelling, attitude, and so on and provides a structured analysis of purchase decisions. There are more studies that do not specifically mention about their frameworks, indicating that these could be exploratory studies incorporating a wide range of variables beyond established models, such as TPB. This approach allows researchers to capture the emerging factors that influence halal food consumption without being limited to a single theoretical lens. The diversity of theoretical frameworks underlines the evolving nature of research on halal food consumers. This highlights the necessity of multi-theory approaches to examine the complexity of consumer behavior and purchase intention in various contexts (including demographic, geographic, and other conditions).

The use of frameworks in these studies also affects the use of variables/factors/constructs in research on consumer behavior and purchase intention in the halal food market. This study reviewed a diverse range of variables frequently used to understand halal food consumer behavior. This reflects the complexity and multidimensionality of consumer behavior in this field. According to the literature, several key variables consistently emerge as crucial determinants, such as TPB Variables (attitude, subjective norms, perceived behavioral control), religiosity, and halal awareness. These variables are commonly grounded in established theoretical frameworks, such as the Theory of Planned Behavior (TPB), whereas others incorporate additional context-specific variables to capture unique cultural or consumer dynamics.

This study states that TPB variables (especially attitude) clearly play an important role, even though this model is the most widely used with its extension and combination with other models. However, besides TPB variables, religiosity plays a pivotal role in many studies as a key determinant, even more so than subjective norms and perceived behavioral control. (Aslan, 2023; Bukhari *et al.*, 2020) demonstrate how religiosity with other variables significantly affects purchase intention and Nurhayati & Hendar, (2020) where religiosity impacts halal awareness and purchase intention. Religiosity also moderates the research conducted by El Ashfahany *et al.*, (2024). This focus on religiosity highlights its significance not only as a standalone factor, but also as a moderating variable.

Halal awareness and its mediating role have been widely discussed across the studies. Shahniah *et al.*, (2024) examined how halal awareness with other variables impacts attitude and purchase intention. It also happened Febriandika *et al.*, (2023) where halal awareness had a direct effect towards purchase intention while acting as a mediator and examining the additional influences of religious beliefs, exposure, and health reasons. These findings highlight that variables such as religiosity and halal awareness are not only central to understanding consumer behavior in Muslim-majority contexts but also serve as critical moderators and mediators, shaping the pathways from intention to actual

purchase. Their consistent role across studies reinforce the necessity of including these variables in future models for more accurate predictions of halal food consumption.

These studies also explore additional context-specific variables, such as halal certification, habit, and trust to deepen the understanding of consumer behavior. Halal certification was used to examine its impact towards satisfaction with halal food (Abdou *et al.*, 2024), attitudes, and purchase intentions (Hamzah *et al.*, 2020; Shahnia *et al.*, 2024). Amalia *et al.*, (2020) extended this approach by examining habits as a moderating factor between purchase intention and actual behavior, while habits have a direct impact on purchase intention (Billah *et al.*, 2020; Nurkhin *et al.*, 2023). Habit also acts as a moderator between purchase intention and the purchase of halal food (Bawono *et al.*, 2022). Regarding “trust”, Aslan, (2023) underscores the mediating role of trust in linking halal certification to attitudes and purchase intention. Trust also mediates between halal certificates and attitudes (Viera Nu’riza Pratiwi *et al.*, 2024). There are other variables used based on the literature review, such as halal logo, health consciousness, price value, halal label, need for cognition, and many more. Collectively, these studies provide valuable knowledge on the variables shaping halal food consumer behavior and offer practical implications for various stakeholders, such as researchers, policymakers, and marketers in designing marketing strategies to promote halal foods.

In the analysis of the challenges and limitations of various studies on consumer behavior and purchase intention towards halal foods, four categories were found. Challenges and limitations can be categorized into methodological constraints, contextual and demographic limitations, theoretical and conceptual gaps, and halal market and certification challenges. These categories underscore common issues in study design, sampling, theoretical frameworks, and market conditions that impact the validity and generalizability of the outcomes. Table 4 presents the categories and limitations identified in the reviewed studies along with the number of articles addressing each categories.

Most studies encounter methodological constraints due to issues such as small sample sizes, cross-sectional designs, and lack of diverse sampling techniques. For example, Nurkhin *et al.*, (2023) only 104 respondents from a single city in Indonesia with a small sample size limited the study’s ability to represent broader consumer behavior among halal food in online marketplace users. Similarly, the study examined the young generation from Gen Y consumers’ halal food purchase intentions in Malaysia, but with a small sample size of 110 respondents from three cities (Marmaya *et al.*, 2019), reducing its generalizability. Additionally, cross-sectional studies, such as those in China, hinder the capture of behavioral changes over time, limiting insights into long-term consumer attitudes (Abdou *et al.*, 2024). Another study also faced measurement reliability concerns due to low Cronbach’s alpha values, increasing questions about the robustness of its findings (Hamzah *et al.*, 2020) and limitation in the data collection method (convenience sampling) due to lack of information about the population (Shaari *et al.*, 2020). These challenges and limitations suggest the need for future studies with larger

sample sizes, mixed-method approaches, and longitudinal studies to explore and enhance research validity.

Many studies are constrained by their geographical focus and limited demographic representation, which could affect the broader applicability of the findings. One study only examined Muslim consumers in Bingöl city center, Turkey (Aslan, 2023), and the other only focused on Indonesian Millennials in an Island (Amalia *et al.*, 2020). These conditions make it difficult to generalize their conclusions to other regions or age groups. Similar findings were also obtained by Billah *et al.*, (2020) surveying consumers in Southern Thailand, overlooking perspectives from other regions of the country. These challenges also happened in non-Muslim majority countries, particularly in capturing diverse consumer experience. Pradana *et al.*, (2022) Examined Muslim students in Spain but did not distinguish between first-, second-, and third-generation Muslims. This situation could significantly impact halal awareness and purchasing behavior. Another study focused on non-Muslim Korean consumers but lacked a sample size and did not account for regional or cultural differences (Paudel *et al.*, 2024). These constraints demonstrate the need for broader and more representative samples that consider various cultural, religious, and regional influences.

The theoretical framework gaps used to explain food-purchasing behavior have also been encountered in several studies. The theory of planned behavior (TPB) is mostly applied, but many studies have overlooked additional behavioral control. For example, Sahir *et al.*, (2021) applying only TPB, which is integrated with other theories, might provide a more comprehensive understanding. It also happened to Lim *et al.*, (2022) use TPB with non-Muslim halal food consumers in Malaysia but did not explore alternative models or variables such as acculturation or social identity. In another case, lifestyle did not significantly affect purchase intention and contradicted previous studies, indicating a need for further investigation (Bukhari *et al.*, 2020). Similarly, it was Pradana *et al.*, (2024) found that the uncertainty of halal status negatively affects purchasing interest and highlights a gap in consumer knowledge. These gaps indicate that future research should integrate multiple theoretical frameworks and explore more variables to better understand regarding halal foods consumer behavior and purchase intention.

Furthermore, the halal certification process, consumer trust issues, and a lack of access and standardization are significant challenges in multiple studies. Aslan (2023) highlights consumer skepticism in Turkey due to multiple certification bodies and inconsistent standard while Ahmed *et al.*, (2019) points to trust issues in Pakistan where a lack of legal binding for halal certification and it is increasing concern over authenticity of halal labels and process even in Muslim majority country. Similarly, another study found that consumer ethnocentrism and national identity create resistance to halal food acceptance among non-Muslim consumers in Muslim Minority Countries, thus complicating market expansion efforts (Wilkins *et al.*, 2019). Additionally, Viera Nu'rizza Pratiwi *et al.*, (2024) discussed the uncertainty of the halal status of food in Taiwan. This poses a challenge for Muslim

consumers in non-Muslim regions. These studies illustrate that strengthening the halal certification authority, improving consumer knowledge, and increasing international collaboration for halal standards are pivotal for expanding the halal food market. Moreover, the breadth of these studies indicates that halal food consumption research is increasingly gaining global attention, expanding beyond Muslim-majority countries to include diverse cultural contexts. This global development suggests an emerging interdisciplinary research agenda that integrates consumer behavior, marketing strategies, technology adoption, and cross-cultural perspectives, thus enhancing the understanding of halal food markets worldwide.

CONCLUSION AND RECCOMENDATION

This study synthesizes the literature on consumer behavior and purchase intentions regarding halal food, guided by the PRISMA protocol and using Scopus data. The analysis confirms that the Theory of Planned Behavior (TPB) is the dominant framework, often complemented with variables such as religiosity, halal knowledge, and trust. Other models, including the Theory of Interpersonal Behavior (TIB), Stimuli-Organism-Response (SOR), and Technology Acceptance Model (TAM), reflect a multidimensional understanding of consumer behavior. Theoretical implications from these findings suggest that integrating TPB with context-specific variables enhances our understanding of key determinants and potential moderators in purchase intention models.

From a managerial perspective, the results indicate actionable strategies for marketers and policymakers. Core TPB constructs, combined with contextual factors, such as halal certification, trust, habit, and health consciousness, significantly influence purchase intention. Strengthening halal certification systems, increasing public awareness, and fostering consumer trust can improve market acceptance. Marketers should also consider integrating religiosity and halal awareness into promotional campaigns and products positioning to align with consumer values in both Muslim-majority and minority markets.

Future research should address the limitations identified in this review by adopting larger and more diverse samples, applying mixed-methods approaches, and conducting longitudinal studies to capture behavioral changes over time. Comparative studies across different countries and cultures are recommended to explore multicultural perspectives and cross-national differences in halal consumption. Additionally, expanding bibliographic coverage beyond Scopus and improving access to full-text sources would enhance the comprehensiveness and robustness of future systematic literature analysis.

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Sustainable Work Engagement: The Role of Work-Life Balance, Organizational Support, and Mental Well-Being (A Systematic Review)

Johanes Aji Nugroho*, Setyo Riyanto, Suprpto, Anik Herminingsih

Doctoral Study Program in Management, Faculty of Economics and Business, Mercu Buana University
Jl. Meruya Selatan No.1, South Meruya, Kembangan, West Jakarta 11650, Indonesia
67124010002@student.mercubuana.ac.id

(*) Corresponding Author

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ABSTRACT

This study aims to synthesize empirical evidence on how Work-Life Balance (WLB) and Perceived Organizational Support (POS) sustain work engagement through mental well-being as a mediating mechanism. Following PRISMA 2020, a Boolean search across Scopus yielded 1,339 records; after systematic screening, 165 peer-reviewed articles (2020–2026) were included. Analysis reveals three key findings: (1) mental well-being is predominantly operationalized through deficit indicators (burnout, stress) rather than positive capacities (resilience, flourishing); (2) cross-sectional designs dominate, undermining temporal validity of "sustainability" claims; and (3) the JD-R framework prevails, yet cross-theoretical integration with COR and SET remains largely narrative. The novelty of this research lies in the integration of mental well-being typologies and methodological design patterns into a single explanatory synthesis regarding sustainable work engagement. These findings provide a foundation for evidence-based HRM interventions, longitudinal monitoring strategies, and policy alignment with SDGs 3 and 8, advancing understanding of work engagement as an organizational ecosystem phenomenon rather than a singular outcome.

Keywords:

Sustainable work engagement, work-life balance, perceived organizational support, mental well-being, systematic literature review

ABSTRAK

Penelitian ini bertujuan mensintesis bagaimana Work-Life Balance (WLB) dan Perceived Organizational Support (POS) mempertahankan Work Engagement melalui mekanisme mediasi Mental Wellbeing. Dipandu PRISMA 2020, pencarian Boolean di Scopus menghasilkan 1.339 catatan; setelah penyaringan sistematis, 165 artikel yang telah melalui tinjauan sejawat (2020–2026) dimasukkan. Analisis mengungkapkan tiga temuan kunci: (1) kesejahteraan mental sebagian besar dioperasionalkan melalui indikator defisit (kelelahan, stres) daripada kapasitas positif (ketahanan, kemakmuran); (2) desain cross-sectional mendominasi, yang merusak validitas temporal dari klaim "keberlanjutan"; dan (3) kerangka JD-R mendominasi, namun integrasi lintas-teori dengan COR dan SET tetap sebagian besar bersifat naratif. Kebaruan studi terletak pada integrasi tipologi kesejahteraan mental dan pola desain metodologis dalam satu sintesis penjelasan. Temuan ini memberikan dasar untuk intervensi HRM berbasis bukti, strategi pemantauan longitudinal, dan penyesuaian kebijakan dengan SDGs 3 dan 8 yang meningkatkan pemahaman tentang keterlibatan kerja sebagai fenomena ekosistem organisasi daripada hasil tunggal.

Kata Kunci:

Keterlibatan kerja berkelanjutan, keseimbangan kerja-hidup, dukungan organisasi yang dipersepsikan, mediasi kesejahteraan mental, tinjauan literatur sistematis

INTRODUCTION

The sustainability of work engagement has emerged as a critical global issue amidst the acceleration of digital transformation, hybrid work arrangements, and increasing psychological pressures across various industrial sectors. Recent international reports indicate a rise in work-related burnout and a decline in employee well-being, particularly among younger generations who face increasingly blurred work-life boundaries and intensifying performance demands. Within the framework of the Job Demands–Resources Model, the balance between work and personal life, along with perceived organizational support, is conceptualized as a strategic work resource that can mitigate stress and foster sustainable engagement (Bakker & Demerouti, 2017; Eisenberger *et al.*, 2020). Further empirical studies demonstrate that mental well-being functions as a central psychological mechanism linking organizational practices to sustained engagement (Sonnentag, 2021; Guest, 2022; Caesens & Stinglhamber, 2020). This issue aligns with the United Nations Sustainable Development Goals (SDGs 3 and 8) and the OECD Well-Being Framework, which emphasizes the importance of healthy, productive, and resilient workplaces. Therefore, a systematic synthesis of evidence regarding how the balance between work and personal life and perceived organizational support shapes mental well-being to maintain work engagement represents a timely and globally relevant scientific endeavour.

Despite the growing academic attention to this topic, efforts to sustain work engagement through the balance of work and personal life and perceived organizational support still encounter theoretical and practical complexities. Prior research has revealed findings that are not always consistent regarding the strength and direction of relationships among variables, partly due to diverse theoretical approaches, including the Job Demands–Resources Model, Conservation of Resources Theory, and Social Exchange Theory (Bakker & Demerouti, 2017; Hobfoll *et al.*, 2018; Eisenberger *et al.*, 2020). Additionally, mental well-being has been operationalized in various ways as emotional stability, psychological functioning, or social well-being, resulting in measurement heterogeneity and limiting cross-context comparability (Keyes, 2002; Sonnentag, 2021). Empirical evidence also encompasses private companies, public institutions, and hybrid digital work environments, where structural constraints and cultural norms influence the effectiveness of work-life balance policies (Guest, 2022; Caesens & Stinglhamber, 2020). Nevertheless, digital human resource analytics and employee well-being monitoring systems present new opportunities to design data-driven interventions that strategically enhance mental well-being and promote sustainable engagement.

The existing literature has extensively examined work engagement as an outcome of work resources, particularly the balance between work and personal life and perceived organizational support, with consistent evidence that a supportive organizational climate enhances morale and dedication (Bakker & Demerouti, 2017; Caesens & Stinglhamber, 2020). Parallel research streams also link work-life balance to better psychological functioning and reduced emotional exhaustion (Guest, 2022), while perceived organizational support is associated with increased well-being through reciprocal exchange

mechanisms (Eisenberger *et al.*, 2020). Furthermore, mental well-being has been conceptualized as a multidimensional construct encompassing emotional, psychological, and social components (Keyes, 2002; Hobfoll *et al.*, 2018). However, despite the increasing number of empirical studies, a systematic synthesis that positions mental well-being as a mediating mechanism connecting work-life balance and perceived organizational support with sustainable work engagement remains limited. Existing reviews tend to focus on separate dyadic relationships or specific sectors, thereby leaving conceptual and integrative gaps that necessitate a comprehensive systematic evaluation.

More specifically, three critical gaps remain unresolved in the existing body of literature. First, no prior systematic review has simultaneously examined Work–Life Balance (WLB) and Perceived Organizational Support (POS) as dual antecedents within a single integrated model that positions mental well-being as the mediating pathway to sustainable work engagement. Most studies treat these variables in isolation or test only one antecedent at a time, producing fragmented rather than integrative evidence. Second, the construct of mental well-being within mediational models has been operationalized almost exclusively through deficit-oriented indicators such as burnout, emotional exhaustion, and stress, while positive psychological capacities, including resilience, psychological flourishing, and self-determination, remain empirically underrepresented, thereby limiting the theoretical scope of what "sustainable" engagement truly entails (Keyes, 2002; Sonnentag, 2021). Third, the dominant reliance on cross-sectional research designs across the reviewed literature fundamentally undermines the validity of sustainability claims: without longitudinal or time-lagged evidence, work engagement risks being reduced to a momentary attitudinal state rather than a durable organizational outcome. These three gaps, integrative model absence, construct narrowness, and methodological inadequacy, collectively constitute the primary justification for the present systematic review.

The conceptual framework underpinning this study draws on an integrative logic derived from three complementary theoretical perspectives. The Job Demands–Resources (JD-R) Model (Bakker & Demerouti, 2017) provides the foundational architecture, positioning WLB and POS as work resources that buffer psychological demands and activate motivational processes leading to engagement. Conservation of Resources Theory (COR; Hobfoll *et al.*, 2018) extends this by explaining how the accumulation and protection of personal and organizational resources, including psychological well-being, enable individuals to sustain their engagement over time rather than merely respond to momentary conditions. Social Exchange Theory (SET; Blau, 1964; Eisenberger *et al.*, 2020) further complements this framework by illuminating the relational dimension: when employees perceive genuine organizational support, they reciprocate through heightened commitment, psychological investment, and sustained behavioural engagement. Together, these three frameworks generate a coherent mechanistic logic in which WLB and POS function as dual resource inputs, mental well-being operates as the psychological transmission mechanism, and sustainable work engagement emerges as the organizational output. This tripartite integration moves beyond treating these theories as parallel

explanations and instead articulates how each addresses a distinct process, resource activation, resource conservation, and relational reciprocity within a unified explanatory sequence.

Building on the still-fragmentary but growing evidence base from academic research, we believe that a systematic literature review is required here to synthesize the theoretical and empirical insights into how work–family balance and perceived organizational support facilitate sustainable work engagement through mental well-being. While previous studies have found that work resources independently drive engagement (Bakker & Demerouti, 2017; Eisenberger *et al.*, 2020), and that well-being is a critical psychological mechanism (Hobfoll *et al.*, 2018; Sonnentag, 2021), no comprehensive integration of these constructs has been produced in an overarching explanatory framework. This is essential in academia, looking for conceptual clarity, practitioners wanting evidence-based human resource interventions, and policy makers who want workplace well-being strategies to align with SDGs 3 and 8. In doing so, by systematically charting dedicated theories/methods/findings across contexts (i.e., Guest, 2022; Caesens & Stinglhamber, 2020; Keyes, 2002), the present study lays a solid groundwork for future policy decisions and theoretical advancements in addition to outlining future research avenues that may support management of work engagement within ever-more complex organisational contexts. Thus, this study has four specific aims: (1) to chart the operationalization of mental well-being as a mediating construct in the research literature which it was critiquing; (2) to assess whether the methodological designs allow sufficient tests of sustainability of engagement claims; (3) to determine whether theoretical integration across JD-R, COR and SET frameworks occurs within empirical models; and (4) to delineate any contextual or sectoral boundary conditions that moderate WLB, POS, mental well-being, and sustainable work engagement relationships.

RESEARCH METHODS

This study employs a qualitative systematic literature review (SLR) design, which prioritizes the structured synthesis of theoretical and empirical evidence over statistical aggregation. Unlike meta-analyses that quantitatively pool effect sizes, this qualitative SLR is designed to map conceptual patterns, identify methodological trajectories, and consolidate theoretical frameworks across a diverse body of peer-reviewed literature. This design is appropriate given the heterogeneity of operationalizations, research contexts, and analytical approaches observed across studies linking Work–Life Balance (WLB), Perceived Organizational Support (POS), mental well-being, and sustainable work engagement. The qualitative SLR approach has been increasingly adopted in organizational behaviour and HRM scholarship to produce integrative explanatory syntheses where statistical pooling would be inappropriate or misleading (Snyder, 2019; Tranfield *et al.*, 2003; Jesson *et al.*, 2011).

This systematic literature review employs the framework of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) to ensure transparency, replicability, and methodological rigour in synthesizing evidence related to sustainable work engagement. Adhering to

established review standards (Page *et al.*, 2021), PRISMA delineates the stages of identification, screening, eligibility assessment, and inclusion using predefined Boolean queries: (("work life balance" OR "work-life balance" OR "work family balance" OR "work-family balance") AND ("perceived organizational support" OR "perceived Organizational support") AND ("mental wellbeing" OR "mental well-being" OR "psychological wellbeing" OR "mental health") AND ("sustainable work engagement" OR "work engagement")). This structured screening process facilitates a systematic mapping of research trends, dominant theoretical approaches such as the Job Demands–Resources framework and Conservation of Resources (Bakker & Demerouti, 2017; Hobfoll *et al.*, 2018), the positioning of mental well-being within empirical models (Keyes, 2002; Sonnentag, 2021), methodological patterns, and the identification of conceptual gaps. By minimizing selection bias and enhancing analytical consistency, PRISMA provides a robust foundation for addressing integrative research questions within this study.

The research questions guiding this study are as follows:

- RQ1 : How is mental well-being operationalized within the mediational model between Work-Life Balance, Perceived Organizational Support, and Sustainable Work Engagement (for instance, as stress/burnout, psychological well-being, flourishing, or resilience), and has there been a shift in the typology of operationalization over the past five years?
- RQ2 : To what extent are claims of "sustainable" work engagement supported by longitudinal, multi-level, or time-lagged designs compared to cross-sectional designs in studies linking WLB, POS, and mental well-being?
- RQ3 : What theoretical framework is most dominantly employed to explain the relationships among WLB, POS, mental well-being, and engagement (for example, JD-R, COR, Social Exchange), and to what extent is cross-theoretical integration genuinely implemented in empirical models?
- RQ4 : How do the distribution of geographical contexts and industrial sectors influence the patterns of relationships between WLB, POS, mental well-being, and engagement?
- RQ5 : Is there a shift from simple mediation models to more complex structural models (such as moderated mediation or multilevel mediation) in research concerning mental well-being and sustainable work engagement?

This systematic literature review focuses on the synthesis of empirical evidence regarding sustainable work engagement through the mediating role of mental well-being, which is grounded in the work-life balance and perceived organizational support. To ensure methodological rigour and transparency, this study adopts the PRISMA framework, which outlines the processes of identification, screening, eligibility assessment, and inclusion of studies (Page *et al.*, 2021). Literature was obtained from various reputable databases, including Scopus, ScienceDirect, Springer, Wiley, SAGE, IEEE, Web of Science, and Google Scholar, in order to maximize coverage and reduce publication bias. Through a predetermined Boolean search strategy and explicit inclusion and exclusion criteria, the

PRISMA approach facilitates a systematic filtering of empirical studies that have undergone peer review and are relevant to the research question. This structured synthesis enables the mapping of theoretical foundations, methodological patterns, and empirical findings, while ensuring replicability and analytical consistency. By integrating various high-quality sources within a transparent protocol, this study provides a comprehensive and credible understanding of sustainable work engagement in the context of contemporary organizations.

To ensure the scientific quality of the included studies, a structured article quality assessment was conducted as an integral step of the screening process, applied before final inclusion decisions. Each candidate article was evaluated across four dimensions: (1) conceptual clarity, referring to the degree to which key constructs WLB, POS, mental well-being, and work engagement are explicitly defined and theoretically grounded; (2) methodological transparency, assessing whether the study clearly reports its research design, sampling procedure, measurement instruments, and analytical strategy; (3) relational validity, evaluating whether the study tests inferential, mediating, moderating, or structural relationships among the core variables rather than merely describing them; and (4) indexing and peer-review status, requiring that articles be published in Scopus-indexed or Sinta-accredited journals to meet minimum academic rigor standards. Articles failing to meet criteria across two or more dimensions were excluded from the final corpus. This quality assessment protocol is consistent with established SLR practice in Organizational research (Tranfield *et al.*, 2003; Okoli & Schabram, 2010) and with recent applications in HRM-focused systematic reviews (Malik *et al.*, 2023; Sypniewska *et al.*, 2023; Tjingovera *et al.*, 2025). The assessment was conducted independently by the primary reviewer, with a secondary review applied to borderline cases to reduce subjectivity and enhance decision consistency.

The methodological approach of this study is also informed by a growing body of recent SLR scholarship within adjacent domains. Bocean *et al.* (2023) demonstrated the utility of PRISMA-guided synthesis in capturing pandemic-era shifts in work-life balance and employee satisfaction, establishing a precedent for time-bounded systematic reviews in organizational sustainability research. Similarly, Sypniewska *et al.* (2023) employed a structured literature review framework to examine the intersection of work engagement and sustainable HRM practices among Polish employees, underscoring the value of sector-specific synthesis within a broader methodological protocol. In the healthcare sector, Sindu Bharathi and Sujatha (2024) applied systematic review methodology to evaluate how POS mediates the relationship between work stress and employee well-being, directly informing the mediational logic adopted in the present study. More recently, Tjingovera *et al.* (2025) utilized a qualitative SLR design to examine WLB, well-being, and engagement among working mothers in Namibia, highlighting the importance of contextual boundary conditions, an analytical concern that is explicitly addressed in RQ4 of this study. Taken together, these precedents validate both the methodological design and the

analytical agenda of the present review, while also situating this study within an active and evolving scholarly conversation on sustainable work engagement.

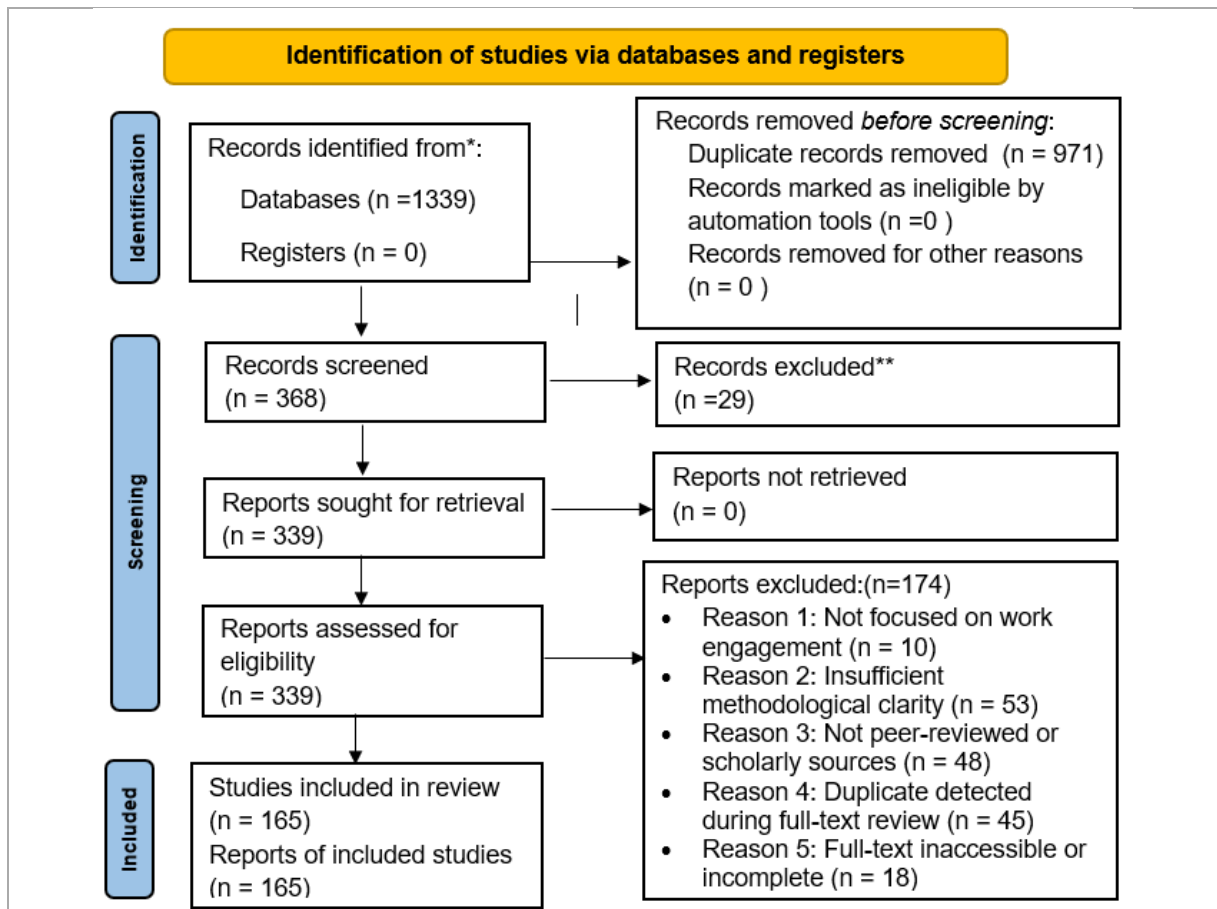


Figure 1. PRISMA Business Sustainability

Source: Authors' work

RESULT AND DISCUSSION

The figure 2, shows well-being and life balance in the centre of the VOS viewer's network visualization where their importance is registered through the size of the node/growth & richness of interconnections. While mental well-being is connected with life balance, environment and systematic review, life balance is related to policy, productivity and pandemic context. The leadership, behaviour, organizational commitment and mediation clusters relate to the organizational mechanisms guiding work engagement. This model reflects that work-personal life balance and organizational support impact on work engagement through mental well-being (Bakker & Demerouti, 2017; Eisenberger *et al.*, 2020; Hobfoll *et al.*, 2018; Keyes, 2002), underlining the mediating role in sustainable work engagement models.

The study selection was conducted using clearly defined eligibility criteria and screening processes to ensure conceptual relevance, methodological rigour, and empirical quality. Only articles that have undergone peer review and are indexed in Scopus or Sinta (from 2020 to 2026) that examine the relational model between work-life balance, perceived Organizational support, mental well-being, and work engagement were included. This structured screening process aligns with PRISMA standards (Page *et al.*, 2021). It reinforces theoretical integration within the Job Demands–Resources framework (Bakker & Demerouti, 2017) and the Conservation of Resources Theory (Hobfoll *et al.*, 2018).

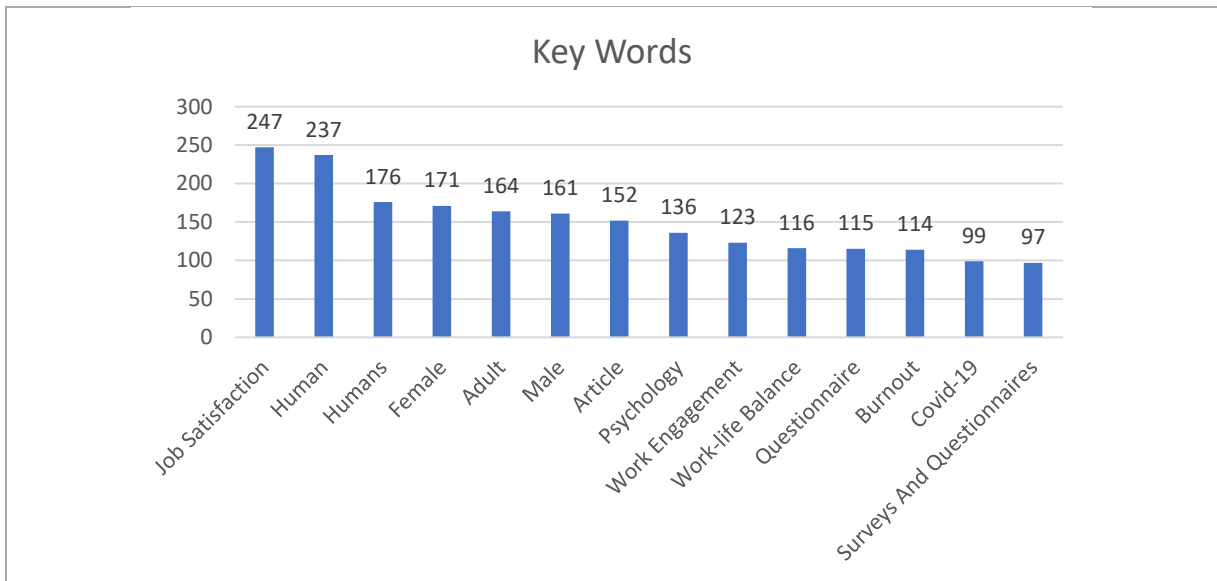


Figure 3. Keywords Distribution
Source: Authors' work

The distribution of keywords indicates that job satisfaction (247) and human (237) dominate the landscape of publications, followed by demographic categories such as female, male, and adult, reflecting an empirical focus on the adult worker population. The emergence of work engagement (123) and work-life balance (116) underscores their positions as central themes in contemporary Organizational literature, although they remain subordinate to the predominance of job satisfaction issues. The presence of burnout and COVID-19 also signifies a growing attention to psychological health in the context of a global crisis. This pattern aligns with the Job Demands–Resources framework, which positions well-being and work engagement as responses to job demands and resources (Bakker & Demerouti, 2017), as well as with findings that Organizational support and work-life balance play crucial roles in maintaining mental well-being and sustained performance (Eisenberger *et al.*, 2020; Hobfoll *et al.*, 2018).

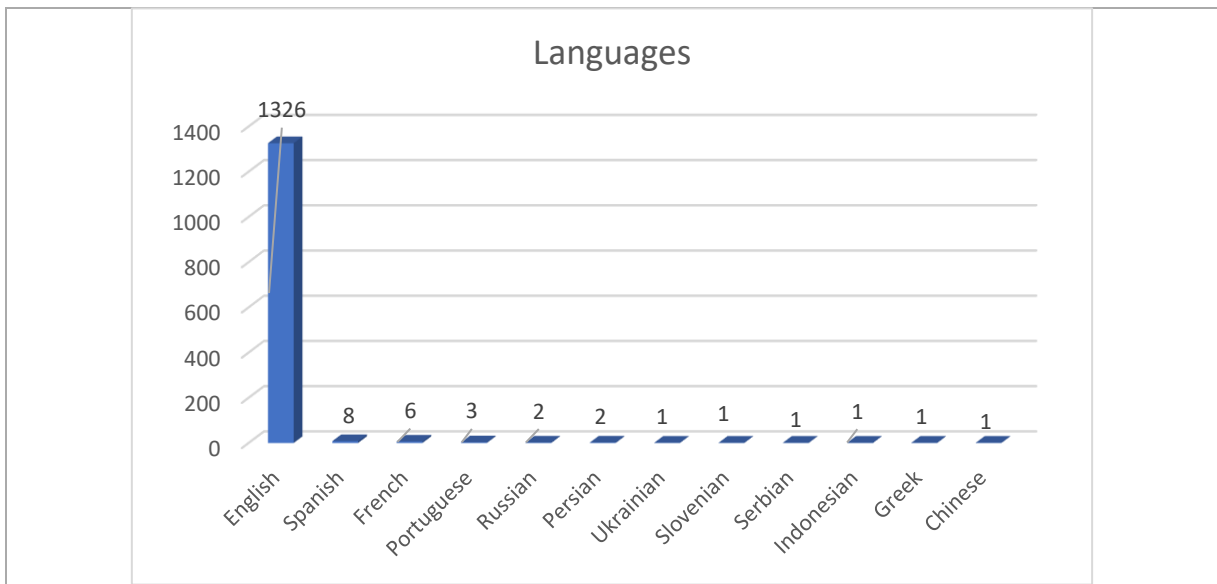


Figure 4. Language Distribution

Source: Authors' work

The distribution of publication languages demonstrates a highly significant dominance of English-language articles (1,326 documents) while contributions from other languages, such as Spanish (8), French (6), Portuguese (3), and others, remain at very marginal figures. This pattern indicates that the scientific discourse surrounding the topics of work-life balance, mental well-being, and work engagement is predominantly constructed in English as the academic lingua franca. This dominance simultaneously enhances international visibility and cross-national citations; however, it may potentially limit the representation of local contexts published in non-English languages. Thus, this linguistic mapping underscores the importance of an inclusive yet critical literature selection strategy in systematic literature reviews to maintain broad coverage without compromising scientific quality standards.

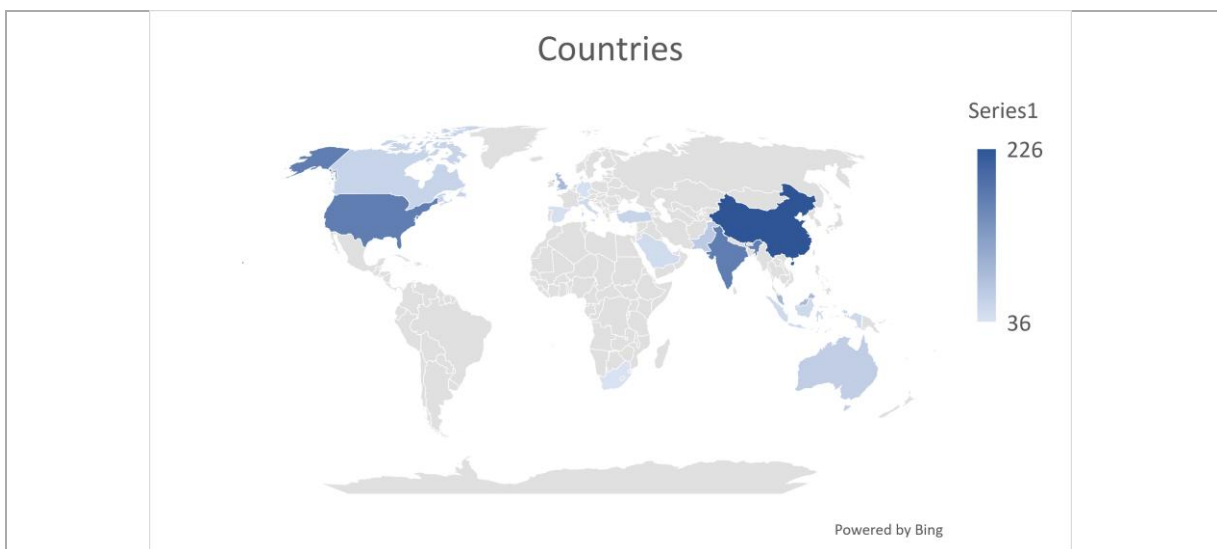


Figure 5. Researcher Countries Map

Source: Authors' work

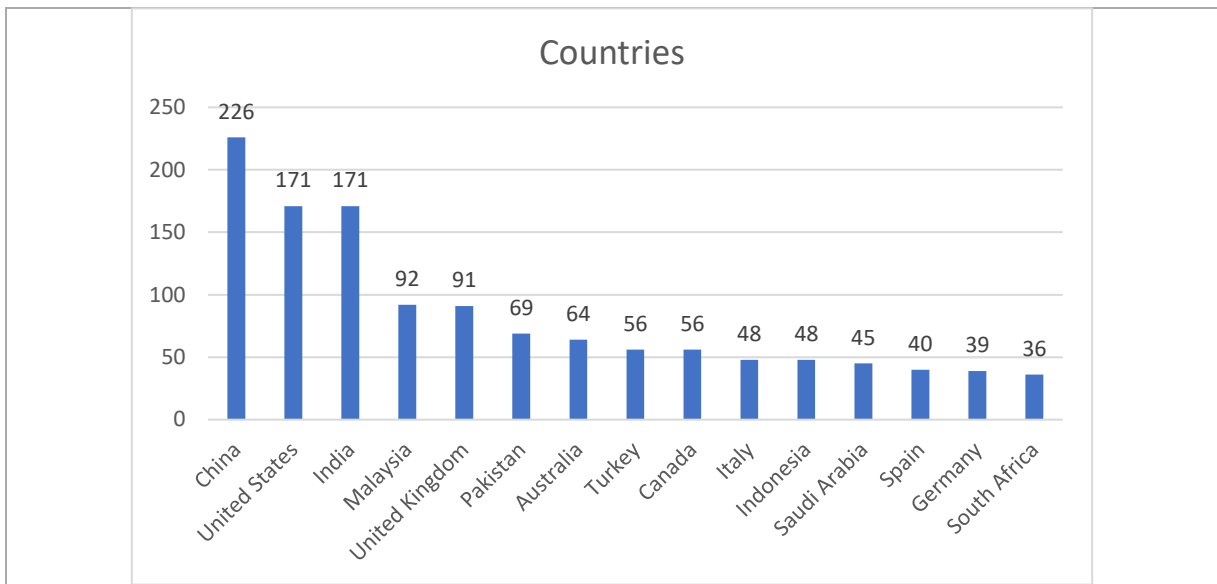


Figure 6. Researcher Countries

Source: Authors' work

The distribution of countries indicates that China (226) dominates publications, followed by the United States (171) and India (171), signifying a concentration of scientific production in large and rapidly developing economies. Significant contributions are also observed from Malaysia, the United Kingdom, and Pakistan. This pattern reflects the growing global attention to issues of labour attachment and mental well-being, particularly in the Asian region and in middle-income countries undergoing intensive Organizational transformation.

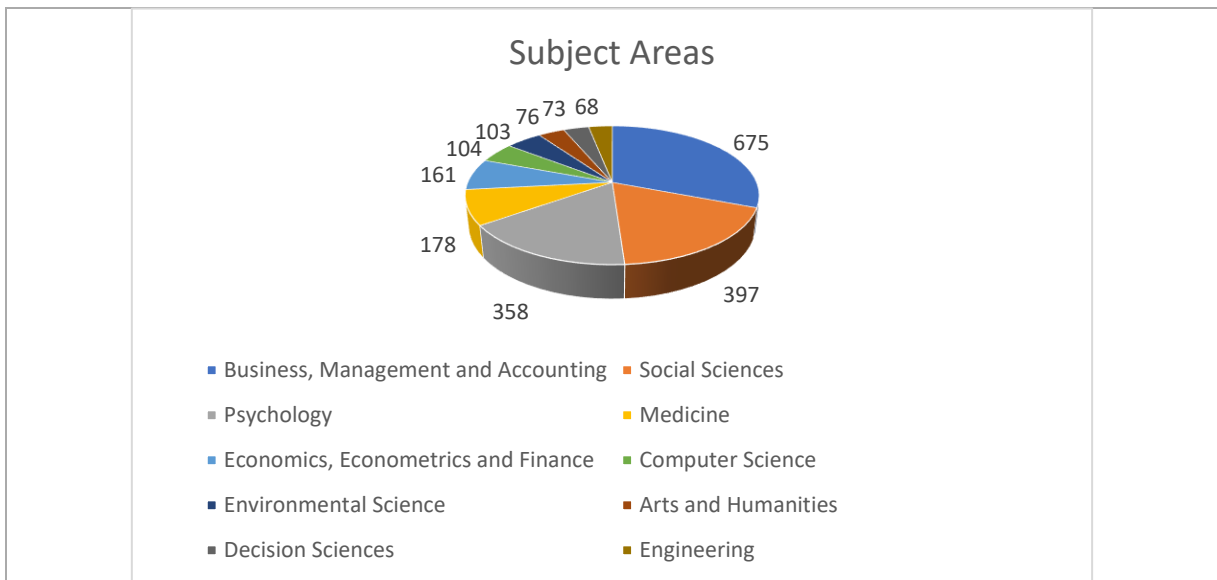


Figure 7. Subject Areas

Source: Authors' work

The Big 10 distribution of academic fields indicates a dominance of Business, Management and Accounting (675) and Social Sciences (397), followed by Psychology (358) and Medicine (178). This pattern underscores that the study of job attachment and mental well-being primarily evolves within

managerial and Organizational behaviour perspectives. The presence of other fields such as Economics, Computer Science, and Environmental Science highlights the multidisciplinary nature of this issue in responding to the dynamics of modern work and digital transformation.

The findings of this study indicate that Work–Life Balance and Perceived Organizational Support consistently function as strategic work resources that enhance employee engagement through the mechanism of mental well-being. Interpretatively, these results affirm that the sustainability of engagement is not solely determined by job design, but also by the Organization's ability to cultivate a psychological ecosystem that supports emotional stability and the psychological functioning of employees. This pattern aligns with the Job Demands–Resources framework and the Conservation of Resources theory, which positions resources as buffers against stress while simultaneously serving as triggers for work energy. Consequently, mental well-being acts as a conceptual and empirical bridge connecting human resource management practices with the sustainability of individual performance.

Unlike much of the previous literature, which generally reflects a dyadic approach, such as work–life balance and job satisfaction or Organizational support and employee engagement, this study presents an integration between multiple relationships with mental well-being at their center. Nonetheless, most of the studies included in this review use cross-sectional designs, which constrain causal impressions and validate claims on sustainability. In theory, longitudinal and multilevel investigations are necessary to account for the nuances of resource accumulation. From an implementation standpoint Organizations must incorporate work flexibility policies and psychological support mechanisms on the premises of sustainable performance management.

The 165 studies reviewed provide three complementary theoretical mechanisms in Organizational life. In this JD-R framework, WLB functions as a boundary resource that safeguards employees' cognitive and emotional reserves, which, in turn, maintains engagement as opposed to direct effects through mental well-being. At the relational level, POS engenders reciprocity founded on Social Exchange Theory; employees reciprocate by investing energy when their mental well-being is sustained. (1.) Systemically, the Conservation of Resources Theory explains synergistic interaction between WLB and POS over time, resulting in strengthening psychological reserves and sustainability of engagement. Considering mental well-being from a deficit perspective is biased by clinical traditions and underestimates its positive role in sustainable engagement. By employing cross-sectional designs, sustainability is ill understood, and therewith, “sustainable” as a term is used without contextual validity. Commonalities in the Stories Embedded in JD-R, COR, and SET: Discrepancies in Structural Embedding within Field-Based Empirical Frameworks. Although this study offers a comprehensive mapping, several limitations warrant attention. First, the variation in the operationalization of mental well-being leads to heterogeneity in findings and restricts cross-study comparability. Second, the dominance of English-language publications and specific geographical contexts may limit global generalizability. Third, reliance on secondary data constrains the exploration of more in-depth

contextual factors. Therefore, future research is recommended to develop an integrative model based on cross-cultural perspectives, utilize longitudinal designs, and adopt more multidimensional measures of well-being to strengthen the conceptual foundation of sustainable employee engagement.

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This systematic literature review offers five analytically distinct contributions to the domains of human resource management and organisational behaviour. It provides the first cohesive synthesis that identifies WLB and POS as dual antecedents in a single mediational architecture whereby mental well-being serves as the principal psychological transmission mechanism between organizational inputs and sustainable work engagement, thus establishing an integrative structure which surpasses the dyadic/specific-sector foci of previous reviews. It produces an empirically grounded typology of operationalizations of mental well-being that differentiates deficit-reducing constructs from positive capacity constructs, and shows that the current literature has only captured a small slice of the well-being continuum, thus providing far more limited empirical support for its full mediating power. It methodologically demonstrates via documented empirical mapping rather than theoretical hypothesis that the cross-sectional design endemic to the field creates a systematic validity gap in sustainability arguments and makes an evidence-based case for longitudinal and multilevel study designs as baseline requirements for future research invoking the sustainability construct. It charts terrain and sectoral boundary conditions that qualify the generalizability of existing findings, especially in Southeast Asian and public administration contexts, including those among Indonesian civil service settings, where bureaucratic cultures with collectivist norms may lead to unique mediational dynamics that have yet to be illuminated. It offers HR practitioners and policy makers a structured evidence base from which to design ecosystem-level interventions around WLB, POS and mental well-being simultaneously, as it shows that even big impact point interventions have no durable engagement effects if organization does not support its workers with a broader organizational infrastructure that enhances psychological capital by maintaining relational support structures at the same time.

CONCLUSION AND RECOMMENDATION

This systematic literature review set out to synthesize how Work–Life Balance and Perceived Organizational Support sustain work engagement through the mediating role of mental well-being, and what emerges from the evidence is both encouraging and sobering in equal measure. Across 165 peer-

reviewed studies spanning diverse Organizational contexts and geographical regions, the data consistently affirm that WLB and POS function as strategic psychological resources whose effects on engagement are not direct but are channelled through the interior psychological life of employees. When people feel that their work and personal lives are manageable, and that their Organization genuinely values their contribution, they arrive at work not merely present but psychologically invested, and it is this investment, sustained by mental well-being, that constitutes the foundation of durable engagement. That much, the literature confirms with reasonable consistency.

What the literature also reveals, however, is that the field's understanding of this process remains incomplete in ways that matter. Mental well-being, despite its centrality to every mediational model reviewed, has been operationalised almost exclusively through deficit lenses such as burnout, stress, and emotional exhaustion rather than through the positive psychological capacities that genuine sustainability requires: resilience, flourishing, and psychological growth. This matters analytically because a field that measures well-being only as the absence of breakdown will inevitably produce interventions designed to prevent collapse rather than build capacity, and will generate sustainability claims that are, at best, claims about survival rather than thriving. Compounding this is the persistent dominance of cross-sectional research designs, a methodological convention that renders the word "sustainable" in countless article titles something closer to aspiration than empirical description. Sustainability, by its own logic, demands evidence across time; yet the field has largely settled for evidence at a single moment, leaving the temporal dynamics of resource accumulation, depletion, and recovery largely unmapped. Similarly, while JD-R, COR, and SET are frequently cited together, their integration in empirical models remains more rhetorical than mechanistic frameworks are invoked in parallel rather than woven into a coherent explanatory structure that specifies how buffering, resource conservation, and reciprocal exchange interact within a unified process.

All together, these findings indicate a field that has made significant advances in establishing what can drive sustainable work engagement, but so far cannot demonstrate it due to a relatively underdeveloped methodological and theoretical infrastructure. The regional concentration in research (i.e., East Asian and Anglo-American contexts) and the sectoral focus on healthcare and private industry further restrict the extent to which existing conclusions are generalizable, particularly with respect to public administration settings in Southeast Asia or other institutional environments where differences in bureaucratic cultures, collectivist norms, and distinctive HRM frameworks may yield meaningfully different mediational dynamics. These are not just scholarly absences; they are real-world blind spots for decision makers and human resource professionals who need to create interventions within institutional settings that have been relatively neglected by the literature.

Theoretically, there are three directions that emerge as both necessary and urgent going forward. Future research should focus on longitudinal and time-lagged designs that allow for genuine tests of whether engagement is maintained over time rather than simply present at a snapshot in time. It

should also extend the operationalisation of mental well-being down to its most positive capacity constructs, like resilience, self-determination or flourishing, so that the mediational mechanism is assessed across its theoretical rather than merely accessible continuum. Indeed, it needs to head towards an amalgam of empirical models that formalise JD-R, COR and SET not as competing logics but as intersecting mechanisms, explicitly modelling the role in producing engagement trajectories at individual, team and Organizational levels of resource activation, conservation and relational reciprocity. For practitioners, the main implication is also clear: sustainable work engagement cannot be accomplished through some well-designed stand-alone intervention. It takes an Organizational ecosystem in which agile work modalities, managerial support and psychological capability-building work together and reinforcingly not as a set of discrete HR interventions (though there may be some elements of that), but as a coherent and perennial institutional commitment to the conditions in which people can truly flourish at work.

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AUTHOR GUIDELINES

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This section contains a brief description of the reason for the research, the approach or method used, important results, and policy implications in English and Indonesian. As much as possible, do not insert formulas and references. The abstract should be no more than 200 words using single-spaced Times New Roman font, size of 10pt (italic), and easily understood by all parties. Keywords are italicized and 11 pt size, with 5-7 keywords,

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This section describes the arguments as to why the submitted article contains interesting research and why it is important to conduct it. To answer that, the introduction should contain the background, state of the art of the research that was previously conducted on the same topic, and gap analysis to show where the research contributions were made to the development of the topic discourse (novelty). The Introduction section concludes the objectives of the research to be achieved. The introduction is expected to describe a theoretical framework based on a literature review, which is the logical basis for developing hypotheses or research proportions and research models.

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It contains an explanation of research data analysis, a description of the required statistics, and a discussion of findings.

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Contains the research conclusions, explains the implications of the findings and limitations of the research, and, if necessary, suggestions made by the researcher for future research.

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Sekolah Tinggi Manajemen PPM

Jl. Menteng Raya 9-19, Jakarta 10340

(021)2300313 ext. 1108 / 2354

Contact person: +6285729166105 (WhatsApp Available)

jmbr@ppm-manajemen.ac.id

jmbrppm@gmail.com



PPM School of Management

Jl. Menteng Raya 9-19, Jakarta 10340, INDONESIA
Phone (62)-21-2300313 #1108; Fax (62)-21-2302040/51

E-mail: JMBR@ppm-manajemen.ac.id

www.researchcase-ppm.com

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