Family Ownership and Leverage of Family-Owned Business in Indonesia: The Role of Family Control as Mediation

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A B S T R A CT

This research investigates the direct and indirect effects of family ownership on leverage, with family control acting as a mediating variable in Indonesian family-owned businesses. The primary dataset is sourced from the annual financial reports of family-owned firms listed on the Indonesia Stock Exchange (IDX). The sample consists of 73 family-controlled publicly listed companies, selected through purposive sampling based on specific selection criteria. A quantitative approach is adopted in this study, employing panel data regression analysis using E-Views 13 software. Family ownership serves as the independent variable, leverage as the dependent variable, while family control is introduced as the mediating variable; several control variables, such as asset tangibility, firm size, profitability, net trade credit, financial expenses, and retained earnings, are also considered. The analysis reveals that family ownership does not have a statistically significant direct effect on leverage. Nevertheless, when family control is incorporated as a mediator, family ownership exhibits a significant negative influence on leverage. The Sobel test further confirms that family control fully mediates the relationship between family ownership and leverage.

Keywords: family ownership, leverage, family control, complete mediation

Acknowledgement

INTRODUCTION

Indonesia is classified as a developing nation with a dominant presence of family companies. In 2014, the US auditor Price Waterhouse Cooper (PwC) surveyed family businesses in Indonesia, which showed that more than 95% of companies in Indonesia are family businesses run by more than 40 thousand wealthy people in Indonesia, approximately 0.2% of

Indonesia's population, possessing a total wealth of Rp 134 trillion, which constitutes about 25% of Indonesia's GDP (PriceWaterhouseCooper Indonesia, 2014). In publicly listed companies, families control at least 20% of shares and ensure the presence of at least one family member within key management roles, such as chairman and members of the board of directors and commissioners (Wiranata & Nugrahanti, 2013). Family involvement in the management structure suggests that securing long-term stability and control are top priorities in managing family companies.

In financial management, one of the most critical decisions for family enterprises is using debt as financing or leverage. Leverage is defined by the magnitude of long-term liabilities utilization within the capital structure as assessed by the proportion of long-term debt to total assets (LTDAR) (Crespí & Martín-Oliver, 2015). The choice of proxy is based on family-owned businesses that tend to avoid short-term debt due to fluctuations and high liquidity risk (Anderson & Reeb, 2003), preference for financial stability over short-term gains (Thiele & Wendt, 2017) as well as potential disruptions to the continuity of family businesses across generations due to volatile interest rates and short repayment terms (Gómez-Mejía et al., 2007).

A preliminary analysis of the five family-owned businesses sampled in this study shows that leverage varies widely. Table 1 summarizes the five family-owned businesses' long-term debt-to-asset ratio (LTDAR).

Table 1. Long term debt to asset ratio (LTDAR) of Family Companies

Company Name	*Leverage* (*Long term debt to Asset Ratio*)				
	2019	2020	2021	2022	2023
PT Argha Karya Prima Tbk	0,19	0,17	0,21	0,2	0,18
Agung Podomoro Land Tbk	0,39	0,42	0,39	0,36	0,22
Fajar Surya Wisesa Tbk	0,25	0,3	0,23	0,2	0,15
Indonesia Pondasi Raya Tbk	0,15	0,19	0,19	0,18	0,14
Intraco Penta Tbk	0,85	0,37	0,4	1,65	1,44

Source: Company Annual Report 2019-2023

Based on the 2019-2023 LTDAR data, some family companies have low and stable leverage ratios, but others continue to use significant debt. An extreme case is Intraco Penta Tbk, which jumped its leverage ratio to 1.65 in 2022. This phenomenon contradicts agency theory, which states that family-owned businesses should possess reduced levels of debt dependency. This variation shows that not all family-owned businesses have the same pattern in the use of long-term debt, which is influenced by family ownership and family control

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(Muñoz-Bullón et al., 2023).

Family ownership is characterized as the proportion of shares held by the family, with a minimum threshold of 20% (Gottardo & Moisello, 2016; Murro & Peruzzi, 2019). Family companies have different characteristics, including socioemotional wealth (SEW), and non-financial wealth is the primary consideration. One dimension of SEW is family control, which is discussed in this study. Family control refers to family members serving as CEO or chairman of the board of directors (Gottardo & Moisello, 2016; Murro & Peruzzi, 2019) The main goal of the family-owned business is to exercise control. over the company by placing a family member as CEO (Gottardo & Moisello, 2016). Family relationships can be recognized by the similarity of surnames with the founding family (Madyan et al., 2019). For example, PT Argha Karya Prima Ind. Tbk, Wilson, Jeyson, and Elius Pribadi are family members who hold 63% of the shares. Wilson's involvement as CEO reflects the family's impact on managerial decisions and reduces the use of debt to protect their dominant position(Kappes & Schmid, 2013; Koropp et al., 2014).

The variable relationships are explained with data from five family-owned businesses in 2023, listed in Table 2.

Table 2. Family ownership, Family control, and Long-term Debt to Asset Ratio (DAR) of family-owned businesses in 2023

Company Code	*Family ownership*	FAM *CONTROL*	LTDAR 2023
AKPI	63,28%	2	0,18
APLN	87,72%	2	0,22
FASW	44,48%	2	0,15
IDPR	85,45%	2	0,14
INTA	40,41%	2	1,44

Source: Company Annual Report, 2025

Based on the data of five family-owned businesses in 2023, a dynamic exists among family ownership and FAMCONTROL (family involvement in the board of directors) regarding debt or leverage decisions. All companies have a FAMCONTROL value of 2, indicating that family members serve as CEOs and are involved in strategic decision-making, including using debt. For example, AKPI and IDPR, with 63.28% and 64.99% ownership, respectively, have low leverage levels (LTDAR 0.18 and 0.10), reflecting conservative strategies. Meanwhile, APLN, which has high ownership (87.72%), tends to use debt. FASW, with 44.48% ownership, also has a low LTDAR (0.15), while INTA, although with the lowest

ownership (40.41%), shows a high FAMCONTROL (2) and the highest LTDAR (1.44), reflecting an aggressive pattern of using debt for expansion.

Previous research findings concerning the association between family ownership and leverage show significant differences. Family-owned businesses are reluctant to utilize debt, given the potential for bankruptcy due to default and close supervision from creditors (Haider et al., 2021; Mbanyele, 2020; Ntoung et al., 2020). Nevertheless, alternative research has found that family-owned businesses may prefer to use leverage to avoid ownership dilution, given that debt has no voting rights (Comino-Jurado et al., 2021; Gottardo & Moisello, 2019; Poletti-Hughes & Martínez Garcia, 2022).

In this study, the authors focus on family control as a mediator of the socioemotional wealth (SEW) dimension, which is thought to affect the correlation between family ownership and financial leverage indirectly. Six control variables, asset tangibility, firm size, profitability, net trade credit, interest expense, and retained earnings, ensure that external factors do not influence the dependent variable.

In Indonesia, research on the correlation between family ownership and leverage with family control as a mediator is still limited, and the results are inconsistent. For this reason, the author seeks to undertake research. entitled "Family Ownership and Leverage of Family Companies in Indonesia: The Role of Family Control as Mediation" with the research period 2019-2023.

RESEARCH METHODS

The category of research conducted is quantitative research. As per Sugiyono (2013) quantitative research is a technique predicated on the principles of positivism and aims to study specific populations or samples to test hypotheses. This study sets the family enterprise registered on the Indonesia Stock Exchange (IDX) from 2019 to 2023 as the object of study. The study population consisted of 161 family companies, and the sample was selected employing a purposive sampling technique according to four criteria, thus obtaining 73 companies with a total of 365 observations during the same period. The data used in this study are primary, namely the annual reports of family companies for the period 2019 to 2023, which are obtained through the official website of the Indonesia Stock Exchange and the official websites of each corporation. Data was collected using the documentation observation technique by accessing

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the company's annual report. Data analysis was conducted utilizing panel data regression, which was processed and analyzed utilizing Eviews 13 software.

Data analysis was conducted utilizing panel data regression analysis, which was processed and analyzed with the help of Eviews 13 software.

Hypothesis

H1: Family ownership has a significant adverse effect on leverage

H2: Family ownership has a significant positive effect on Family control

H3: Family control has a negative and significant effect on leverage

H4: Family control can mediate the correlation between family ownership and leverage.

RESULTS

Descriptive Statistical Analysis

This section presents an overview of the sample companies, encompassing the mean, maximum, minimum, and standard deviation values. Table 3 presents descriptive statistics for the sample companies in this study.

Table 3. Descriptive Statistics of Research Variables (N=365)

	LEV	FAM	FC	LTI	TANG	SIZE	ROA	NTCS	FINEXP	RTND
Mean	0,209	0,631	1,679	0,569	0,328	28,871	0,016	-0,469	0,353	0,046
Maximum	3,938	0,997	2,000	0,980	0,897	33,731	0,437	1,562	47,74	0,930
Minimum	0,005	0,222	1,000	0,160	0,003	24,735	-2,890	-152,7	0,0001	-8,463
Std.Deviation	0,325	0,180	0,467	0,139	0,216	1,680	0,197	8,03	3,263	0,919
Observasi	365	365	365	365	365	365	365	365	365	365

Source: Eviews 13, 2025

Based on Table 3, with 73 family companies from 2019 to 2023 with 365 observations, producing descriptive statistical data on all variables in this study, it can be explained that LEV, as assessed by the proportion of long-term debt to total assets, possesses a mean of 0.207, which means that on average during this period the LEV value in family companies has a proportion of long-term debt compared to total assets of 20.70%. The maximum value of LEV is 3.938, owned by Tirta Mahakam Tbk (TIRT), and the minimum value of LEV is 0.005, owned by Puradelta Lestari Tbk (DMAS), which means that the use of long-term debt in funding assets owned is minimal.

Family ownership, as quantified by the proportion of shares possessed by the family, has an average value of 0.631, signifying that, on average, the family owns shares in the company

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founded by 63.10%. The utmost value of FAM is owned by Multifilling Mitra Indonesia Tbk (MFMI) with a share percentage of 0.9965 or 99.65%, which means that the Riady family, as the founder, almost controls all the shares owned by the company. The minimum value of FAM is owned by Panasia Indo Resources Tbk (HDTX) of 0.2233 or 22.33%, which means that the Awong Hidjaja family does not control too many shares in the company.

Family control, a dummy worth two if the CEO is a family member and one if not, has an average value of 1.679. This means that family companies in 2019-2023 have family members who serve as CEOs. The maximum and minimum values are 2 and 1, respectively; this is by the dummy code given based on the criteria, namely two if the family member serves as CEO and one if not.

Asset tangibility, as determined by the proportion of tangible assets to total assets, has an average value of 0.327, indicating that family companies in the 2019-2023 period have a proportion of tangible assets of 32.70%. The maximum value of TANG is achieved by Panasia Indo Resources Tbk (HDTX) with a figure of 0.897 or 89.70%, reflecting that HDTX has a significant amount of tangible assets, so it can offer better collateral in making loans. Conversely, the minimum value of TANG is owned by Bukit Darmo Property (BKDP) of 0.00315 or 0.315%, indicating that BKDP has very few tangible assets as collateral in borrowing.

As measured by the natural logarithm of total assets, company size possessed an average value of FS family companies in the 2019-2023 period of 28.87. The highest value of FS is owned by Astra International Tbk (ASII), 33.73, which means that ASII is a large company, as assessed by its total assets. The minimum value of FS is owned by Metro Realty Tbk (MTSM), with a value of 24.73.

As measured by ROA, profitability has an average value of 0.022 or 2.2%, indicating that family companies in the 2019-2023 period have a low capacity to yield profits from asset management. The maximum value of ROA is achieved by Intraco Penta Tbk (INTA) with a figure of 0.437 or 43.70%, which reflects INTA's good ability to generate profits. On the other hand, the minimum value of ROA is owned by Sunson Textile Manufacturer Tbk (SSTM) with a number -2.89 or -289%, indicating that SSTM is very bad at managing assets to generate profits.

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As measured by the difference between accounts payable and accounts payable to total sales, net trade credit has an average value of -15.94 or -1.594%, indicating that accounts payable exceeds accounts receivable. The maximum value of NTCS of 1.562 or 1.562% is owned by Puradelta Lestari Tbk (DMAS), which indicates more credit to customers. Conversely, the minimum value of -152.71 or -15.271% is possessed by Panasia Indo Resources Tbk (HDTX), which indicates a heavy reliance on accounts payable for funding.

Financial burden, as measured by the proportion of financial expenditures to total revenue, has an average value of FINEXP for family companies in 2019-2023 of 0.353 or 35.30%, reflecting high dependence on debt. Tirta Mahakam Resources Tbk (TIRT) owns the maximum FINEXP value of 47.74, indicating heavy financial pressure. In contrast, London Sumatera Indonesia Tbk (LSIP) owns the minimum value of 0.0001, indicating non-dependence on debt thanks to abundant cash.

Retained Earnings, as measured by the proportion of retained earnings to total assets. The average RETAINED is 0.046 or 4.6%, indicating a small profit reserve compared to assets. Ultra Jaya Mik Industri Tbk (ultj) owns the maximum value of RETAINED of 0.9302 or 93.02%, reflecting high financial strength. In contrast, Panasia Indo Resources Tbk (HDTX) owns a minimum value of -8.463, indicating a very large accumulation of losses compared to total assets.

Test of Classical Assumptions

The classical assumption test is only conducted on panel regression model 3 (three) because The chosen model is a fixed effects model (FEM).

Multicollinearity Test

The multicollinearity test assesses whether the independent variables are correlated. If the correlation coefficient value is less than 0.90, the relationship between the independent variables is weak.

Table 4. Multicollinearity Test Results Model 3 panel data regression

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	FAM	FC	LTI	TANG	SIZE	ROA	NTCS	FINEXP	RTND
FAM	1,0000	0,0334	0,0665	0,0008	-0,0308	0,0540	0,0175	-0,0520	0,2756
FC	0,0334	1,0000	-0,0181	-0,0453	-0,1530	-0,0453	0,0128	-0,1247	0,1063
TANG	0,0008	-0,0209	0,0403	1,0000	-0,1719	0,1027	0,0226	0,1932	-0,3239
SIZE	-0,0308	-0,1530	0,1361	-0,1719	1,0000	0,0564	-0,0029	-0,1289	0,3168
ROA	0,0540	-0,0453	0,0519	0,1027	0,0564	1,0000	0,0384	0,0792	-0,1022
NTCS	0,0175	0,0128	0,0520	0,0226	-0,0029	0,0384	1,0000	0,0081	-0,0077
FINEXP	-0,0520	-0,1247	-0,0048	0,1932	-0,1289	0,0792	0,0081	1,0000	-0,5180
RTND	0,2756	0,1063	0,2717	-0,3239	0,3168	-0,1022	-0,0077	-0,5180	1,0000

Source: Eviews 13, 2025

Table 4 illustrates that the correlation coefficient values among the autonomous and control variables are all less than 0.90. This indicates that there is no high correlation between these variables. Consequently, it can be inferred that this model fulfils the criteria of the multicollinearity test, which indicates that the relationship between all variables does not show multicollinearity.

Heteroscedasticity Test

To test whether there are differences in residual variances between observations in the regression model (heteroscedasticity), this study uses the Glejser test. If the probability value (p-value) < 0.05 (α = 5%), then heteroscedasticity is present. Conversely, if the p-value > 0.05, then there is no heteroskedasticity.

Table 5. Heteroscedasticity Test Results Model 3 panel data regression

Variable	Coefficient	Std,Error	t-Statistic	Prob
C	1,7439	1,6166	1,0788	0,2816
FAMILY	0,0572	0,0428	1,3352	0,1829
FAMCONTROL	-0,0455	0,0714	-0,6379	0,5240
TANG	-0,0565	0,0325	-1,7382	0,0833
FIRMSIZE	-0,0579	0,0565	-1,0238	0,3068
ROA	0,0054	0,0069	0,7756	0,4387
NTCS	0,0000	0,0001	0,6925	0,4892
FINEXP	-0,0018	0,0027	0,6826	0,4984
RETAINED	-0,0061	0,0284	-0,2137	0,8309

Source: Eviews 13, 2025

The results of the heteroscedasticity assessment, performed utilizing the Glejser test, indicate that the p-values for all variables exceed 0,05. This signifies that there is no heteros-cedasticity problem in this model. Therefore, it can be inferred that model 3 meets the criteria and is free from heteroscedasticity problems.

Panel Data Regression Analysis

Table 6. Results of the Panel Data Regression Analysis for Model 1

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	-5,439386	1,917495	-2,836714	0,0048
FAMILY	-0,085203	0,143665	-0,593065	0,5535
TANG	1,057043	0,351402	3,008075	0,0028
FIRMSIZE	0,101337	0,065633	1,543989	0,1235
ROA	0,006283	0,027234	0,230722	0,8177
NTCS	-0,000229	0,000201	-1,140734	0,2547
FINEXP	0,005414	0,010503	0,515508	0,6065
RETAINED	-0,297945	0,079590	-3743511	0,0002

Source: Eviews 13, 2025

Predicated on the regression outcome of the Random Effect Model (REM) estimation in Table 6, it can be interpreted as follows:

LEV = -5,439386 – 0,085203*FAMILY + 1,057043*TANG + 0,101337*FIRMSIZE + 0,006283*ROA – 0,000229*NTCS + 0,005414*FINEXP – 0,297943*RETAINED

The constant value (α) in the regression equation of -5.439386 indicates that if the independent and control variables are considered constant, the value of the dependent variable is estimated at -5.439386. The regression coefficient for the family ownership variable (FAMILY) is -0.085203, which signifies that an increase in family ownership by 0.085203 will result in a decrease in leverage by 0.085203. Conversely, for the asset tangibility variable (TANG), the coefficient of +1.057043 indicates that a comparable increase will follow an increase in asset tangibility of 1.057043 in leverage. The coefficient for firm size (FIRMSIZE) of +0.101337 indicates that an increase in firm size of 0.101337 will increase leverage. In addition, the coefficient for profitability (ROA) of +0.006283 indicates that an increase in profitability of 0.006283 leads to a comparable increase in leverage. Meanwhile, net trade credit (NTCS) has a coefficient of -0.000229, indicating that any credit increase by 0.000229 will reduce leverage. The coefficient for financial expenses (FINEXP) of 0.005414 indicates that any increase in financial expenses by 0.005414 will lead to an equal decrease in leverage. Finally, the coefficient for retained earnings (RETAINED) of -0.297943 indicates that a comparable decrease will follow any increase in retained earnings of 0.297943 in leverage.

Table 7. Results of the Panel Data Regression Analysis for Model 2

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	1,300488	0,588111	2,211296	0,0276
FAMILY	0,171166	0,031670	5,404609	0,0000
TANG	-0,004245	0,083406	-0,050891	0,9594
FIRMSIZE	-0,025585	0,020144	-1,270107	0,2049
ROA	-0,000157	0,005706	-0,027444	0,9781
NTCS	0,000164	4,18E-05	3,929037	0,0001
FINEXP	0,000320	0,002194	0,145942	0,8840
RETAINED	0,015100	0,018452	0,818350	0,4137

Source: Eviews 13, 2025

Predicated on the regression outcome of the Random Effect Model (REM) estimation regression in Table 7, it can be interpreted as follows:

FAMCONTROL = 1,300488 – 0,171166*FAMILY – 0,004245*TANG – 0,025585*FIRM-SIZE – 0,000157*ROA + 0,000164*NTCS + 0,000320*FINEXP + 0,015100*RETAINED

The constant value (α) in the regression equation of 1.300488 indicates that if the independent and control Variables are regarded as constant., the value of the dependent variable is estimated at 1.300488. The regression coefficient for the family ownership variable (FAMILY) is 0.171166, which signifies that an increase in family ownership of 0.171166 will increase family control. Instead, the asset tangibility variable (TANG) coefficient of -0.004245 indicates that an increase in asset tangibility of 0.004245 results in a comparable decrease in family control. On the firm size variable (FIRMSIZE), the coefficient of -0.025585 indicates that an increase in the firm size of 0.025585 will decrease family control. The coefficient for profitability (ROA) of -0.000157 also indicates that an increase in profitability of 0.000157 will lead to a decrease in family control. On the other hand, the coefficient for net trade credit (NTCS) of 0.000164 indicates that a comparable increase will follow any increase in credit by 0.000164 in family control. The coefficient of financial expenses (FINEXP) of 0.000320 indicates that any increase in financial expenses of 0.000320 will increase family control. Finally, the retained earnings coefficient (RETAINED) of 0.015100 indicates that any increased retained earnings of 0.015100 will follow an equivalent increase in family control.

Table 8. Panel Data Regression Test Results Model 3 panel data regression

Variable	Coefficient	Std,Error	t-Statistic	Prob,
C	-6,911408	5,957819	-1,160057	0,2470
FAMILY	-0,346460	0,154535	-2,241945	0,0257
FAMCONTROL	0,631764	0,256925	2,458938	0,0145
TANG	1,951105	0,430075	4,536658	0,0000
FIRMSIZE	0,069541	0,203312	0,342038	0,7326
ROA	0,013725	0,024985	0,549311	0,5832
NTCS	-0,000322	0,000187	-1,719324	0,0866
FINEXP	0,000102	0,009698	0,010519	0,9916
RETAINED	-0,237368	0,103624	-2,290657	0,0227

Source: Eviews 13, 2025

Based on the regression results of the Random Effect Model (REM) estimation in Table 8, it can be interpreted as follows:

LEV = -6,911408 – 0,346460*FAMILY + 0,63164*FAMCONTROL + 1,951105*TANG + 0,069541*FIRMSIZE + 0,013725*ROA – 0,000322*NTCS + 0,000102*FINEXP – 0,237368*RETAINED

The constant value (α) in the regression equation of -6.911408 indicates that when the independent and control variables are held constant, the value of the dependent variable will be 6.911408. The regression coefficient for family ownership (FAMILY) is -0.346460, indicating that an increase in family ownership of 0.346460 results in an equal decrease in leverage. Conversely, the coefficient for family control (FAMCONTROL) of 0.631764 indicates that an increase in family control of 0.631764 will increase leverage. The regression coefficient for asset tangibility (TANG) of 1.951105 indicates that an increase will follow an increase in asset tangibility of 1.951105 in leverage.

In addition, the coefficient of the firm size variable (FIRMSIZE) of 0.069541 indicates that an increase in the firm size of 0.069541 will increase leverage. The coefficient of profitability (ROA) of 0.013725 indicates that an increase in leverage will follow an increase in profitability of 0.013725. On the other hand, net trade credit (NTCS) has a coefficient of -0.000322, which means that any increase in credit by 0.000322 will reduce leverage. The coefficient of financial expenses (FINEXP) of 0.000102 indicates that any increase in financial expenses by 0.000102 will increase leverage. Finally, the retained earnings coefficient (RETAINED) of -0.237368 indicates that any increase in retained earnings of 0.237368 will result in the same decrease in leverage.

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Hypothesis Testing

Direct Effect

T-Test (Partial)

Table 9. Partial Results (T-Test) Model 1 panel data regression

Dependent Variable: LEV
Method: Panel EGLS (Cross-section random effects)
Date: 04/07/25 Time: 12:28
Sample: 2019 2023
Periods included: 5
Cross-sections included: 73
Total panel (balanced) observations: 365
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.439386	1.917495	-2.836714	0.0048
FAMILY	-0.085203	0.143665	-0.593065	0.5535
TANG	1.057043	0.351402	3.008075	0.0028
FIRMSIZE	0.101337	0.065633	1.543989	0.1235
ROA	0.006283	0.027234	0.230722	0.8177
NTCS	-0.000229	0.000201	-1.140734	0.2547
FINEXP	0.005414	0.010503	0.515508	0.6065
RETAINED	-0.297945	0.079590	-3.743511	0.0002

Source: Eviews 13, 2025

Based on Table 9, the importance of the independent variables on the dependent variable can be analyzed through p-value and t-count, with the formula of degrees of freedom (DF) df = n - k - 1, where n represents the number of samples and k denotes the count of independent variables, such that in this model obtained df of 357 (df = 365-7-1) and t-table of 1.9666. Hypothesis one (H1) states that family ownership (FAMILY) has a significant adverse effect on leverage. However, the T-test results show a t-count of 0.5930 < t-table 1.9666 and a p-value of 0.5535 > 0.05, so **H1 is not supported/rejected**. In addition, the control variables aim to ensure that other factors do not influence the correlations between family ownership and leverage. Among the control variables, asset tangibility (TANG) shows a significant effect with a t-count of 3.008075 and a p-value of 0.0028, and retained earnings (RETAINED) with a t-count of 3.743511 and a p-value of 0.0002. Meanwhile, the control variables that do not have a significant effect on leverage are firm size (FIRMSIZE) with t-count 1.543989 and p-value 0.1235, profitability (ROA) with t-count 0.230722 and p-value 0.8177, trade credit (NTCS) with t-count 1.140734 and p-value 0.2547, and financial expenses (FINEXP) with t-count 0.515508 and p-value 0.6065.

Table 10. Partial Results (T-Test) Model 2 panel data regression

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Dependent Variable: FAMCONTROL
Method: Panel EGLS (Cross-section random effects)
Date: 04/07/25 Time: 12:31
Sample: 2019 2023
Periods included: 5
Cross-sections included: 73
Total panel (balanced) observations: 365
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.300488	0.588111	2.211296	0.0276
FAMILY	0.171166	0.031670	5.404609	0.0000
TANG	-0.004245	0.083406	-0.050891	0.9594
FIRMSIZE	-0.025585	0.020144	-1.270107	0.2049
ROA	-0.000157	0.005706	-0.027444	0.9781
NTCS	0.000164	4.18E-05	3.929037	0.0001
FINEXP	0.000320	0.002194	0.145942	0.8840
RETAINED	0.015100	0.018452	0.818350	0.4137

Source: Eviews 13, 2025

Based on Table 10, the importance of the independent variables on the dependent variable can be analyzed through the p-value and t-count, with a degree of freedom (df) of 357 (df = 365 - 7 - 1) and a t-table of 1.9666. Hypothesis two (H2) states that family ownership (FAMILY) has a significant positive influence on family control (FAMCONTROL); the T-test results show a t-count of 5.404609 > 1.9666 and a p-value of 0.0000 < 0.05, both of which indicate a statistically significant effect, while the regression coefficient of +0.171166 indicates a unidirectional relationship, where the higher the family ownership, the stronger the family control of the company, so **H2 is supported/accepted**. From the regression results, only the trade credit variable (NTCS) shows a significant effect on FAMCONTROL, with a t-count of 3.929037 > 1.996 and a p-value of 0.0001 < 0.05; In contrast, other control variables, namely asset tangibility (TANG) with a t-count of 0.05891 and a p-value of 0.9594, firm size (FIRMSIZE) with a t-count of 1.270107 and a p-value of 0.2049, profitability (ROA) with a t-count of 0, 027444 and p-value 0.9781, financial expenses (FINEXP) with t-count 0.145942 and p-value 0.8840, and retained earnings (RETAINED) with t-count 0.818350 and p-value 0.4137, do not show a significant effect; therefore, only NTCS has a partially significant effect on family control.

Table 11. Partial Results (T-Test) Model 3 panel data regression

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Dependent Variable: LEV
Method: Panel Least Squares
Date: 04/07/25 Time: 12:29
Sample: 2019 2023
Periods included: 5
Cross-sections included: 73
Total panel (balanced) observations: 365

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.911408	5.957819	-1.160057	0.2470
FAMILY	-0.346460	0.154535	-2.241945	0.0257
FAMCONTROL	0.631764	0.256925	2.458938	0.0145
TANG	1.951105	0.430075	4.536658	0.0000
FIRMSIZE	0.069541	0.203312	0.342038	0.7326
ROA	0.013725	0.024985	0.549311	0.5832
NTCS	-0.000322	0.000187	-1.719324	0.0866
FINEXP	0.000102	0.009698	0.010519	0.9916
RETAINED	-0.237368	0.103624	-2.290657	0.0227

Source: Eviews 13, 2025

Based on Table 11, the importance of the independent variables on the dependent variable can be analyzed through the p-value and t-count, with a degree of freedom (df) of 355 (df = 365 - 9 - 1) and a t-table of 1.9666. Hypothesis four (H4) states that family control (FAMCONTROL) has a significant adverse effect on leverage (LEV), but **H4 is not supported/rejected** because the regression coefficient of FAMCONTROL is positive 0.631764, which indicates a unidirectional relationship between family control and the use of long-term debt. The greater the family control, the higher the debt utilization. The result remains statistically significant with t-count 2.458938 > 1.9666 and p-value 0.0145 < 0.05. From the regression results, only the control variables of asset tangibility (TANG) and retained earnings (RETAINED) show a significant effect on leverage, with a t-count of 4.536658 and a p-value of 0.0000 for TANG and a t-count of 2.290657 and a p-value of 0.0227 for RETAINED. In contrast, the other control variables, (FIRMSIZE) with t-count 0.342038 and p-value 0.7326, profitability (ROA) with t-count 0.549311 and p-value 0.5832, trade credit (NTCS) with t-count 1.719324 and p-value 0.0866, and financial burden (FINEXP) with t-count 0.010519 and p-value 0.9916, do not show a significant effect. Thus, only TANG and RETAINED have a significant partial effect on leverage.

Overall F-test

Table 12. Simultaneous Results (F Test) Model 1 panel data regression

Weighted Statistics			
R-squared	0.124476	Mean dependent var	-0.507882
Adjusted R-squared	0.107309	S.D. dependent var	0.522360
S.E. of regression	0.493538	Sum squared resid	86.95791
F-statistic	7.250861	Durbin-Watson stat	1.045007
Prob(F-statistic)	0.000000		

Source: Eviews 13, 2025

The F-test in Model 1 tests the immediate impact of the independent variable (family ownership) and control variables (asset tangibility, firm size, profitability, trade credit, financial expenses, and retained earnings) on the dependent variable (leverage). The results of the F test in Table 12 show the Prob (F-statistic) value of 0.0000 <0.05, indicating that all of these variables simultaneously significantly affect leverage.

Table 13. Simultaneous Results (F Test) Model 2 panel data regression

Weighted Statistics			
R-squared	0.113459	Mean dependent var	0.070374
Adjusted R-squared	0.096076	S.D. dependent var	0.107862
S.E. of regression	0.102549	Sum squared resid	3.754351
F-statistic	6.526960	Durbin-Watson stat	1.249831
Prob(F-statistic)	0.000000		

Source: Eviews 13, 2025

The F-test in Model 2 tests the immediate impact of the independent variable (family ownership) and control variables (asset tangibility, firm size, profitability, trade credit, financial expenses, and retained earnings) on family control (Z). The results of the F test in Table 13 show the Prob (F-statistic) value of 0.0000 <0.05, indicating that all of these variables simultaneously significantly affect leverage.

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Table 14. Simultaneous Results (F Test) Model 3 panel data regression

Cross-section fixed (dummy variables)			
R-squared	0.873397	Mean dependent var	-2.150784
Adjusted R-squared	0.837161	S.D. dependent var	1.093623
S.E. of regression	0.441312	Akaike info criterion	1.396737
Sum squared resid	55.11613	Schwarz criterion	2.272879
Log likelihood	-172.9046	Hannan-Quinn criter.	1.744927
F-statistic	24.10299	Durbin-Watson stat	1.400108
Prob(F-statistic)	0.000000		

Source: Eviews 13, 2025

The F-test in Model 3 tests the direct effect of the independent variable (family ownership), the mediating variable (family control) and the control variables (asset tangibility, firm size, profitability, trade credit, financial expenses, and retained earnings) on the dependent variable (leverage). The results of the F test in Table 14 show the Prob(F-statistic) value of 0.0000 < 0.05, indicating that all of these variables simultaneously have a significant effect on leverage.

Coefficient of Determination (R2)

Table 12 shows Model 1, which has an adjusted R-square value of 0.1073. These results indicate that family ownership, asset tangibility, firm size, profitability, trade credit, financial expenses, and retained earnings can explain the leverage variable by 10.73%, while other variables explain the remaining 89.27%.

Model 2 is shown in Table 13, demonstrating an adjusted R-square value of 0.0960. These results indicate that family ownership, asset tangibility, company size, profitability, trade credit, financial expenses, and retained earnings can explain the family control variable by 9.60%. In contrast, alternative variables **explain the remaining 90.4%.**

Table 14 shows Model 3, which has an adjusted R-square value of 0.8371. These results indicate that family ownership, family control, asset tangibility, company size, profitability, trade credit, financial expenses, and retained earnings can explain the leverage variable by 83.71%. The remaining 16.29% are explained by variables other than this study**'s.**

Indirect Effect

The indirect effect between the independent and dependent variables through the mediating variable was tested using the Sobel test. The assessment is based on the role of the mediating variable in the relationship, which is considered significant if the Sobel test yields a value greater than 1.96 and p less than 0.05.

Table 15. Calculator Sobel tests the indirect effect of Family ownership on Leverage mediated by Family control

	Input:		Test statistic:	Std, Error:	p-value:
a	0,171166	**Sobel test:**	2,23818469	0,04831438	0,02520901
b	0,631764	**Aroian test:**	2,20710324	0,04899477	0,02730685
S	0,031670	**Goodman test:**	2,27061736	0,04762428	0,02317015
sb	0,256925				

Source: Kalkulator Online Sobel test

Based on the Sobel test calculation in Figure 1, the regression coefficient a shows the effect of Family ownership on Family control of 0.171166, accompanied by a standard deviation (Sa) of 0.031670. The regression coefficient b shows the impact of family control on leverage of 0.631764, with a standard deviation (Sb) of 0.256925. The Sobel test results showed a Z value of 2.2381> 1.96 and p = 0.0252 < 0.05. Based on these results, family ownership indirectly affects leverage through family control, which has been proven to mediate the relationship.

DISCUSSION

The effect of family ownership on leverage

Hypothesis one **(H1) is not supported/rejected** based on statistical results that show insignificance between family ownership and the leverage of family enterprises. Family-owned businesses vary in their debt usage decisions, with some preferring debt and others tending towards equity. González et al (2013) explain that this insignificance arises from the family's aversion to risk and preference for debt. Research by Crespí & Martín-Oliver (2015) shows that capital structure decisions are influenced by risk preference and business strategy. With the mediating variable of family control, the effect of family ownership on leverage becomes negative and significant, supporting the agency theory that family companies have lower debt. Similar results were also found in research by Muñoz-Bullón et al (2023) and Ntoung et al (2020), who additionally discovered that the larger the family share ownership, the lower the use of debt, reflecting efforts to maintain non-financial values.

The effect of family ownership on family control

Hypothesis two **(H2) is supported/accepted** based on statistical results that show significance, where family ownership significantly positively affects family control in family companies. The larger the family shareholding, the greater their influence in determining the CEO position filled by family members. Conversely, small shareholdings reduce family influence to protect non-financial aspects or Socio-emotional wealth (SEW). According to

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Sirmon & Hitt (2003), families with majority share ownership tend to place family members in important positions, such as CEO, to maintain their SEW. Families want to ensure strategic decisions are in line with their values. SEW theory reveals that companies' families pursue economic benefits and strive to exert control and influence over the company as a form of SEW preservation (Gómez-Mejía et al., 2007). Research by Torchia et al (2021) also found similar results that the higher the percentage of shares owned by family members, the stronger the family's ability to maintain control in formulating corporate strategy by appointing family members as chairman of the board of directors or CEO.

The effect of Family control on Leverage

Hypothesis three **(H3) is not supported/rejected** because family control substantially influences leverage. in family-owned businesses, contrary to the initial hypothesis, which states an adverse effect. This positive effect indicates that the family, as the owner, prefers funding through debt rather than issuing shares to outsiders. This strategy is taken to maintain control over the company without reducing ownership rights (Murni et al., 2022).

This finding aligns with the Socioemotional wealth (SEW) theory that asserts family companies tend to increase the use of debt to maintain family control (Poutziouris, 2011). Research by Chen et al (2021) revealed that companies with family members serving as CEOs tend to have higher leverage levels due to the owners' preference for debt-based funding. In addition, research conducted by Khan et al (2023) demonstrates that family-owned businesses with a good reputation are more trusted by creditors, which lowers the expense of borrowing and encourages families to use debt as the primary source of financing.

The effect of family ownership on leverage mediated by family control

Hypothesis four **(H4) is supported/accepted**, predicated on the Sobel test results shown in Figure 1; the z-value of 2.2381 > 1.96 and the p-value of 0.0252 < 0.05 indicate a substantial indirect impact of family ownership on leverage through family control, so hypothesis H6 is accepted. This occurs because the direct impact of family ownership on leverage is not significant, but becomes negative and significant when the mediating variable (family control) is included, making family control an effective mediator with a full mediation type.

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This finding emphasizes the importance of family control in financing decisions. High family ownership but without adequate control, may weaken the effect on leverage. High control reduces agency conflicts (Jensen & Meckling, 1976) and is aligned with the family's vision (Schulze & Kellermanns, 2015). This makes leverage decisions more strategic (Chua et al., 2015).

This study aligns with Chua et al (2015) and Schulze & Kellermanns (2015) which showed that family CEOs can facilitate the connection between family ownership and funding decisions, reflecting conservative and long-term decision-making. These two studies support that family CEOs effectively mediate between family ownership and leverage while ensuring firm stability.

CONCLUSION

This study investigates the effects of family ownership on leverage through contemplation of family control as a mediating variable in family companies registered on the Indonesia Stock Exchange from 2019 to 2023. The findings indicated that family ownership has no significant effect on leverage but has a positive effect on family control. Family control is proven to completely mediate the impact of family ownership on leverage. Research limitations include the accuracy of family ownership data and identifying family members who serve as CEOs. Suggestions for future research are to use more complete and accurate data and to expand the scope of study objects, including non-family companies. Family companies are also advised to improve information transparency in annual reports, and capital market authorities are expected to encourage better information disclosure.

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