The Influence of Intellectual Capital on The Financial Performance of Family Companies and The Role of Family as a Moderation Variable (Case Study: Family Company Listed on The Indonesia Stock Exchange in 2019-2020)

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***Abstract*-This study aims to analyze and examine the influence of intellectual capital on the financial performance of family companies with the role of the family as moderating the influence relationship. Intellectual capital is estimated using the Value Added Intellectual Coefficient (VAIC) method developed by Ante Pulic. The company's financial performance is measured by Return on Assets (ROA), Return on Equity (ROE), and Asset Turnover Ratio (ATO). Family role variables were measured using Family Ownership (OWN), Family Board of Directors (BOD), and Family Chief Executive Officer (CEO). The population in this study is a family company that is listed on the Indonesia Stock Exchange (IDX) and has information regarding the final shareholders of the company. The sample used is 98 family companies. The analytical tool used is multiple linear regression with cross section data type. The research year takes and compares 2 different years. The year 2019 aims to reflect conditions before the covid-19 pandemic and 2020 reflects conditions during the covid-19 pandemic. The results showed that intellectual capital is a positive and significant variable affecting the financial performance of family companies in crisis conditions and before the crisis. The role of the family, which was expected to strengthen the influence of VAIC on financial performance, turned out to be the opposite in some indicators.**

***Keywords*:** intellectual capital, financial performance, family role

1. Introduction

According to KPMG (2021), as many as 75% of family companies in Asia Pacific experienced a decrease in revenue in 2020. As many as 95% of companies in Indonesia are family companies (CNN Indonesia, 2014). According to the Indonesia Stock Exchange (2020), as many as 98 family companies on the Indonesia Stock Exchange experienced a decrease in revenue by 70.41% and profit by 62.24% during the Covid-19 pandemic. A decrease in revenue indicates poor financial performance of the business. Financial performance that reflects profitability can be measured through Return On Assets (ROA) and Return On Equity (ROE) as well as A s sets Turnover Ratio (ATO) as productivity. To achieve good financial performance, intellectual capital efficiency is needed which is categorized into human capital, physical capital, and structural capital. The management of intellectual capital is in line with the theory of Resource Based View so that in family companies family roles are needed such as family ownership, family involvement, and family leadhership. These three major roles are

expected to be able to improve the company's performance through its financial performance. Therefore, this study focuses on analyzing the influence of intellectual capital on the financial performance of family companies and the role of family as a moderation variable (case study: family companies listed on the Indonesia Stock Exchange in 2019-2020).

2. Literature Review

2.1 Previous Research

Research by Ramirez et al Research (2020) found that intellectual capital, human capital, and structural capital have a significant positive effect on ROA. Family involvement negatively and significantly affects the profitability of the company. But family involvement can positively and significantly moderate the relationship between intellectual capital, structural capital and company performance. Ginesti et al (2018) show that Intellectual capital has a positive and significant effect on Return on Assets, Return on Equity, and Turnover Assets. Research by Bayraktaroglu and Baskak (2019) shows that the VAIC variable has a significant positive effect on ROA and ROE. Avci and Nassar's (2017) research shows that VAIC has a positive and significant effect on ROE before and after the crisis. VAIC has a significant effect on ROA in times of crisis. By Ginesti and Ossorio (2020) family roles have a positive and significant relationship to intellectual capital. By Maseda et al (2019) family ownership has a significant relationship to ROA. However, when family ownership ranges from 28.01 – 81.19, the performance value will decrease when there is an increase in family shares. According to Makhlouf et al (2018) the importance of the role of the family in managing a family business so that the business can run effectively because of the close relationship between family members.

2.2 Theoretical Foundation

2.2.1 Intellectual Capital

Intellectual capital in the form of reliable employee ability and thinking power is needed to manage physical and financial assets well to produce valuable products (Bangun, 2018). Value Added Intellectual Coeficient is the sum of Human Capital Efficiency, Structural Capital Efficiency, Capital Employed Efficiency, indicating the intellectual ability of the organization which can also be considered as BPI (Business Performance Indicators). The model modifies Pulic's VAIC which has been used in many studies and is called M-VAIC.

2.2.2 Family Business

Family companies can be grouped into 2 types. namely Family Owned Enterprise (FOA) and Family Business Enterprise (FBE). Indicators of determining family companies in addition to using Family Owned Enterprise (FOA) and Family Business Enterprise (FBE), there are 2 criteria for family companies, namely the founder or founding family has shares in the company at least 25% or there are family members who serve as the board of directors or board of commissioners in the company (Andres, 2008).

2.2.3 Resourced-Based View

Resource-Based View theory states that company performance is driven by unique resources owned by the company, both tangible resources and intangible resources (Soewarno and Tjahjadi, 2020).

2.2.4 Firm Financial Performance

The company's financial profitability will increase the income of its employees, produce good production units, and bring higher quality products to its customers (Taouab and Issor, 2019). Some types of profitability ratios that can be used are: (1) Return on Assets (ROA); (2) Return on Equity (ROE); (3) Asset Turn Over (ATO).

3. Research Framework

3.1 Analysis Model

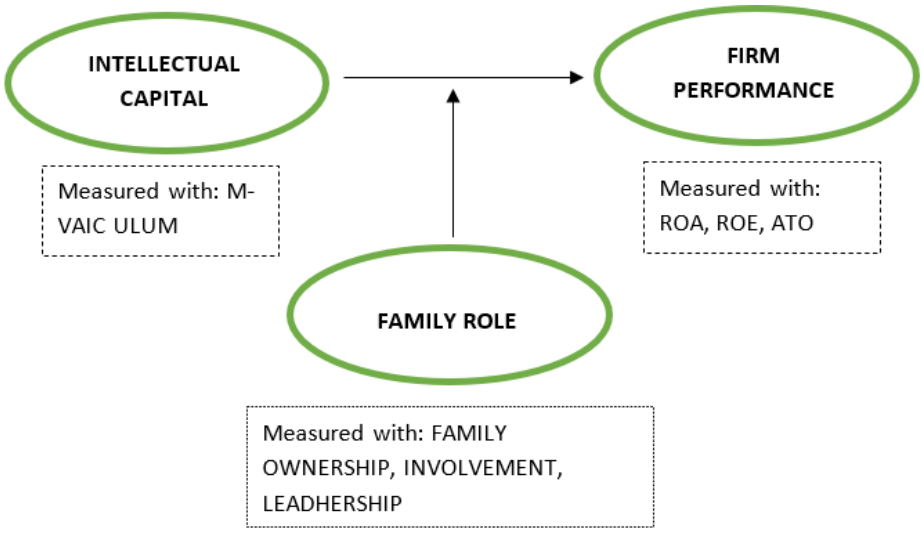

Figure 3.1 Research Model
Source: Author

3.2 Hypothesis

The hypotheses built in this study are as follows:

1. Intellectual capital has a positive and significant effect on financial performance in family companies in Indonesia in 2019 and 2020.
2. The role of the family is able to moderate or strengthen positively the relationship between the influence of intellectual capital on financial performance in family companies in Indonesia in 2019 and 2020.

4. Research Methods

4.1 Types of Research, Samples, and Data Collection

This study used a quantitative approach. Sampling based on purposive sampling techniques, namely family companies that have been listed on the Indonesia Stock Exchange (IDX) with a complete annual report from 2019-2020, except for the financial or funding sector, family shares amounting to more than 25% of the total shares, ownership of less than 25% but able to become major shareholders, and have ultimate shareholder data published through annual reports. The research data is secondary collected through the Indonesia Stock Exchange and the Stockbit Application as many as 98 family companies.

4.2 Operational Variables and Definitions

Table 4. 1 Operational Definition of Variables

Research Variables	Conceptual Definition	Indicators &; Measurement Methods	Operational Definition	Source
Return On Asset	Indicators that show how well a company is utilizing its assets to make a profit	ROA = Net Income / Total Assets	The ability of family companies to utilize assets to generate profits	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Return On Equity	An indicator that shows how well a company is utilizing equity to generate profits	ROE = Net Income / Total Equity	The ability of family companies to leverage equity already available from shareholders	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Asset Turnover Ratio	Indicators that indicate the company's ability to generate sales from its total assets	ATO = Total Sales / Total Assets	The company's ability to make efficiency by utilizing available assets	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Intellectual Capital	Indicators that show how much and efficiently intangible capital generates value for the company	VAIC = Human Capital Efficiency + Structural Capital Efficiency + Capital Employed Efficiency	How much intangible capital can create added value for family companies.	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Family Ownership	An indicator showing how much the family owns shares in the company	Percentage of Number of Family Shares	How much stock does the family have in the family company	Ginesti et al (2018), Poutziouris et al (2015)
Family Board of Director	Indicators showing the involvement of family members in the board of directors	Percentage of the number of family members in the board of directors	What percentage of family members are on the board of directors	Ginesti et al (2018), Poutziouris et al (2015)
Family CEO	Indicators that indicate the highest leader of the company is a family member or not k	The dummy variable is 1 if family, and 0 if not family	The state of the CEO is held by the family or not	Ginesti et al (2018), Poutziouris et al (2015)
Company Age	Indicators that show how long the company has been around	Company Age	How long does a family company exist	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Company Size	An indicator that shows how big a company is in terms of its total assets	Size = Total Assets	How big is a family company in terms of its total assets	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)
Leverage	An indicator showing the percentage of a company's assets financed by debt	LEV = Total Debt / Total Assets	How much of the company's assets are financed by debt	Suwarno &; Tjahjadi (2020), Singla (2020), Ginesti et al (2018)

The research analysis used classical asusmtion tests, t-statistics, F-statistics, coefficient of determination, and moderated regression analysis.

5. Results and Discussion

5.1 Analysis

5.1.1 Descriptive Statistics

Table 5.1 Descriptive Statistics of Research Data

Variable	Value	Year	
		2019	2020
ROA	Std Dev	0.05	0.07
	Avg	0.03	0.01
	Min	-0.12	-0.30
	Max	0.22	0.15
ROE	Std Dev	0.09	0.21
	Avg	0.05	-0.02
	Min	-0.30	-1.22
	Max	0.24	0.23
ACT	Std Dev	0.99	0.87
	Avg	0.90	0.77
	Min	0.04	0.02
	Max	7.69	4.88
VAIC	Std Dev	3.94	3.64
	Avg	1.62	0.71
	Min	-22.51	-13.60
	Max	12.12	8.19
OWN (%)	Std Dev	22.96	21.71
	Avg	64.47	62.75
	Min	6.30	4.78
	Max	100.00	92.37
BOD (%)	Std Dev	23.27	24.48
	Avg	37.49	38.72
	Min	0.00	0.00
	Max	100.00	100.00
CEO (1=Family, 0=Non-Family)	Std Dev	0.43	0.42
	Avg	0.76	0.78
	Min	0.00	0.00
	Max	1.00	1.00
LNSIZE	Std Dev	1.75	1.81
	Avg	28.53	28.55
	Min	25.23	25.13
	Max	32.25	32.73
AGE (Year)	Std Dev	13.34	13.34
	Avg	33.19	34.19
	Min	7.00	8.00
	Max	68.00	69.00
LEV	Std Dev	0.19	0.23
	Avg	0.44	0.43
	Min	0.07	0.07
	Max	0.86	0.84

Source: Research Data

The average ROA and ROE decreased in 2019 and 2020, which also showed a decrease in the company's profitability performance when facing the Covid-19 pandemic. The average ATO decreased in 2019 and 2020, which also showed a decrease in productivity performance when facing the Covid-19 pandemic. The average VAIC decreased in 2019 and 2020 which also showed a decrease in value-added efficiency resulting from the utilization of tangible and intangible assets owned by the company. In 2019, the highest family share ownership reached 100%, dominated by companies that had just entered the Indonesia Stock Exchange listing,

namely PT Makmur Berkah Amanda, PT Putra Rajawali Kencana, PT Lancartama Sejati, PT Pratama Widya, and PT Cipta Selera Murni. The lowest family shareholding is PT Inti Agri Resources whose percentage of outgoing ownership is only 6.3%. In 2020, the highest family share ownership was PT Suparma at 92.37% and the lowest was PT Industri dan Perdagangan Bintraco Dharma at 4.78%.

In 2019, the largest percentage of BOD was TAMA, PTPW, and RDTX while in 2020 there was one more company with a percentage of 100% BOD, namely SOTS. A 100% BOD percentage indicates that all members of the company's board of directors are held by family members. The percentage of 0% BOD in 2019 is companies with codes CSMI, ANJT, SIMP, ABMM, ALKA, DSSA, LSIP, INDR, CPIN, MKPI, BHIT. In 2020, they are ANJT, SIMP, ABMM, CSMI, ALKA, INDR, DSSA, LSIP, CPIN, MNCN, MKPI, BHIT. Companies with family CEOs as many as 76 companies and companies with CEOs from professionals as many as 22 companies. Companies with the largest total assets are BRPT in 2019 and INDF in 2020. Meanwhile, the companies with the lowest total assets are PGLI in 2019 and JAYA in 2020. The lowest leverage ratios are companies with IIKP code in 2019 and EAST in 2020. While the largest leverage ratio is the company with the code KONI in 2019 and PSDN in 2020.

5.1.2 Analysis Results

The equation generated from multiple linear regression and moderated regression analysis with cross section data types in 2019 and 2020 is as follows:

1. The effect of VAIC on ROA (2019)

   $ROA_i = -0.20739 + 0.00879\ VAIC_i + 0.00010\ OWN_i + 0.00013\ BOD_i + 0.00657\ CEO_i + 0.00841\ SIZE_i + 0.00006\ AGE_i - 0.07537\ LEV_i + \mathcal{E}_i$ ..... **(5.1)**

2. Family Role capabilities moderate the influence of VAIC and ROA (2019)

   $ROA\ i = -0.22157 + 0.02224\ VAIC_{and} + 0.00033\ OWN_i - 0.00005\ BOD_{and} + 0.03284\ CEO_i - 0.00009\ VAIC_{and}\ x\ OWN_i + 0.00005\ VAIC_{and}\ x\ BOD_i - 0.01234\ VAIC_{and}\ x\ CEO_i + 0.00786\ SIZE_{and} + 0.00024\ AGE_{and} - 0.07007\ LEV_{and} + \mathcal{E}_{and}$ ..... **(5.2)**

3. The effect of VAIC on ROE (2019)

   $ROE_i = -0.4895 + 0.0158\ VAIC_i + 0.0003\ OWN_i + 0.0002\ BOD_i + 0.0182\ CEO_i + 0.0173\ SIZE_i + 0.0004\ AGE_i + -0.0200\ LEV_i + \mathcal{E}_i$..... **(5.3)**

4. Family Role capabilities moderate the influence of VAIC and ROE (2019)

   $ROE\ i = -0.4093 + 0.0312\ VAIC_i + 0.0002\ OWN_{and} + 0.0001\ BOD_i + 0.0524\ CEO_i + 0.0001\ VAIC_{and}\ x\ OWN_i - 0.0001\ VAIC_{and}\ x\ BOD_i - 0.0169\ VAIC_{and}\ x\ CEO_i + 0.0137\ SIZE_{and} - 0.0006\ AGE_i - 0.0105\ LEV_{and} + \mathcal{E}_i$..... **(5.4)**

5. The influence of VAIC on ATO (2019)

   $ATO\ i = 0.0496 + 0.0241\ VAIC_{and} + 0.0065\ OWN_i - 0.0053\ BOD_{and} + 0.1599\ CEO_i - 0.0158\ SIZE_{and} + 0.0042\ AGE_{and} + 1.7946\ LEV_i + \mathcal{E}_i$..... **(5.5)**

6. Family Role Capabilities Moderate the Influence of the VAIC and ATO (2019)

$ATO_i = 0.3930 + 0.0206\ VAIC_{and} + 0.0052\ OWN_i - 0.0027\ BOD_{and} + 0.0579\ CEO_{and} + 0.0006\ VAIC_{and}\ x\ OWN_i - 0.0013\ VAIC_{and}\ x\ BOD_{and} + 0.0422\ VAIC_{and}\ x\ CEO_{and} - 0.0256\ SIZE_{and} + 0.0031\ AGE_i + 1.8031\ LEV_{and} + \mathcal{E}_i$ ..... **(5.6)**

7. The effect of VAIC on ROA (2020)

   $ROA_i = 0.2812 + 0.0114\ VAIC_i + 0.0004\ OWN_i - 0.0001 BOD_i + 0.0103\ CEO_i + 0.0099\ SIZE_i + 0.0000\ AGE_i - 0.0843\ LEV_i + \mathcal{E}_i$ ..... **(5.7)**

8. Family Role Capabilities Moderate VAIC and ROA Influence (2020)

   $ROA\ i = -0.2984 + 0.0178\ VAIC_{and} + 0.0004 OWN_{and} + 0.0001\ BOD_{and} + 0.0098\ CEO_i - 0.0001\ VAIC_{and}\ x\ OWN_i - 0.0001\ VAIC_{and}\ x\ BOD_i - 0.001\ VAIC_{and}\ x\ CEO_i + 0.0102\ SIZE_{and} - 0.0001\ AGE_i - 0.0840\ LEV_{and} + \mathcal{E}_i$ ..... **(5.8)**

9. The effect of VAIC on ROE (2020)

   $ROE_i = -0.8602 + 0.0239\ VAIC_i + 0.0012\ OWN_i + 0.0005\ BOD_i + 0.0277 CEO_i + 0.0309\ SIZE_i - 0.0012\ AGE_i + 0.3102\ LEV_i + \mathcal{E}_i$ ..... **(5.9)**

10. Family Role capabilities moderate the influence of VAIC and ROE (2020)

    $ROE_i = -0.9881 + 0.0686\ VAIC_i + 0.0016\ OWN_{and} + 0.0015\ BOD_{and} + 0.0264\ CEO_i - 0.0002\ VAIC_{and}\ x\ OWN_i - 0.0005\ VAIC_{and}\ x\ BOD_i - 0.0045\ VAIC_{and}\ x\ CEO_{and} + 0.0333\ SIZE_{and} - 0.0013\ AGE_i - 0.3131 LEV_{and} + \mathcal{E}_{and}$ ..... **(5.10)**

11. Effect of VAIC on ATO (2020)

    $ATO_i = 4.6761 + 0.0704\ VAIC_{and} + 0.0036\ OWN_i - 0.0107\ BOD_i - 0.0179\ CEO_i - 0.0612\ SIZE_{and} + 0.0070\ AGE_{and} + 1.8497\ LEV_{and} + \mathcal{E}_i$..... .... **(5.11)**

12. Family Role Capabilities Moderate the Influence of the VAIC and ATO (2020)

    $ATO_i = 4.6678 + 0.0233\ VAIC_{and} + 0.0034 OWN_i - 0.0107\ BOD_{and} - 0.0964\ CEO_{and} + 0.0007\ VAIC_{and}\ x\ OWN_i - 0.0009\ VAIC_{and}\ x\ BOD_i + 0.0569\ VAIC_{and}\ x\ CEO_i - 0.1601\ SIZE_{and} + 0.0071\ AGE_i + 1.4676\ LEV_{and} + \mathcal{E}_i$ ..... **(5.12)**

Table 5.2 Regression Results

VARIABLE/ YEAR	ROA		ROE		ACT	
	2019	**2020**	**2019**	**2020**	**2019**	**2020**
Constant	-0.2073*	0.2812*	-0.4895*	-0.8602	0.0496	4.6761*
VAIC	0.0087*	0.0114*	0.0158*	0.0239*	0.0241*	0.0704*
OWN	0.0001	0.0004	0.0003	0.0012	0.0065	0.0036
BE	0.0001	-0.0001	0.0002	0.0005	-0.0053	-0.0107*
CEO	0.0065	0.0103	0.0182	0.0277	0.1599	-0.0179
SIZE	0.0084*	0.0099*	0.0173*	0.0309	-0.0158	-0.1612*
AGE	0.0001	0.0000	0.0004	-0.0012	0.0042	0.007
LEV	-0.0753*	-0.0843*	-0.0200	0.3102*	1.7946*	1.4897*
Obs	98	98	98	98	98	98
R-Squared	0.6242	0.6497	0.5276	0.4682	0.1568	0.2577

Source: Research Data
* Significant at (α) 5%

The results in table 5.2 show that VAIC has a significant effect at the level of (α) 5% on *Return on Assets* (ROA), *Return on Equity* (ROE) and *Asset Turnover Ratio* (ATO) both in 2019 and 2020. So it can be concluded if the influence of VAIC on the company's financial performance was positive and significant in 2019 and 2020.

The second criterion is pure moderation, namely if the influence of family roles , namely Family *Ownership* (OWN), Family Board of Directors (BOD), and *Family CEO* in the first estimate does not have a significant effect on the company's financial performance (ROA, ROE, ATO) while the interaction *of Value Added Intellectual Coeficient* (VAIC) with *family roles* (OWN, BOD, CEO) in the second estimate has a significant effect on the company's financial performance as indicated by the variables Return on Asset (ROA), *Return on Equity* (ROE) and *Asset Turnover Ratio* (ATO). Pure moderation indicates that *the family role* variable (OWN, BOD, CEO) becomes a pure moderation variable without being an independent variable.

Table 5.2 shows the coefficient of determination of each model built. Regression of the influence of the independent variable on *Return on Assets* (ROA) in 2019 shows an R^2 determination value of 0.6242. So it can be concluded if the independent variable is able to explain the dependent variable by 62% and the rest is explained by other variables outside the model. Regression of the influence of the independent variable on *Return on Assets* (ROA) in 2020 shows an R^2 determination value of 0.6497. So, it can be concluded if the independent variable is able to explain the dependent variable by 64% and the rest is explained by other variables outside the model.

Regression of the influence of the independent variable on *Return on Equity* (ROE) in 2019 shows an R^2 determination value of 0. 5276. So it can be concluded if the independent variable is able to explain the dependent variable by 52% and the rest is explained by other variables outside the model. Regression of the influence of the independent variable on *Return on Equity* (ROE) in 2020 shows an R^2 determination value of 0.4682. So, it can be concluded if the independent variable is able to explain the dependent variable by 46% and the rest is explained by other variables outside the model.

Regression of the influence of the independent variable on the *Asset Turnover Ratio* (ATO) in 2019 shows an R^2 determination value of 0. 1568. So, it is concluded that the independent variable is able to explain the dependent variable by 15% and the rest is explained by other variables outside the model. Regression of the influence of the independent variable on the *Asset Turnover Ratio* (ATO) in 2020 shows an R^2 determination value of 0. 2577. So, it can be concluded if the independent variable is able to explain the dependent variable by 25% and the rest is explained by other variables outside the model.

Table 5.3 Moderation Variable Criteria

Year		2019			2020		
Firm Perform	***Family Role***	**Press. 1**	**Press. 2**	**Criterion**	**Press. 1**	**Press. 2**	**Criterion**
ROA	**OWN**	0.0001	-0.0001	Not Moderating	0.0004	-0.0001	Not Moderating
	BE	0.0001	0.0001	Not Moderating	-0.0001	-0.0001	Not Moderating
	CEO	0.0065	-0.0123*	***Pure Moderator***	0.0103	-0.0012	Not Moderating
ROE	**OWN**	0.0003	0.0001	Not Moderating	0.0012	-0.0003	Not Moderating
	BE	0.0002	-0.0001	Not Moderating	0.0005	-0.0006*	***Pure Moderator***
	CEO	0.0182	-0.0170	Not Moderating	0.0277	-0.0046	Not Moderating
ACT	**OWN**	0.0065	0.0001	Not Moderating	0.0036	0.0001	Not Moderating
	BE	-0.0053	-0.0013	Not Moderating	-0.0107*	-0.0010	Not Moderating
	CEO	0.1599	0.0422	Not Moderating	-0.0179	0.0570	Not Moderating

Source : Research Data
* Significant at (α) 5%

Based on its significance, in 2019, most moderation variables did not have a significant relationship to the dependent variable or were unable to moderate the effect of VAIC on *firm performance* (ROA, ROE, ROA). But

there is a *Family CEO* variable that is a *pure moderator* variable in moderating the effect of VAIC on *Return on Assets* (ROA). The negative direction shown by the regression coefficient suggests that family leadership in the family company weakens the influence of VAIC on ROA.

In 2020, most moderation variables also showed an insignificant or incapable effect of moderating the effect of VAIC on *firm performance*. However, there is one variable *Family Board of Director* (BOD) that is pure *moderator* in moderating the influence of VAIC on ROE. The negative direction shown by the regression coefficient indicates that the greater percentage of directors from family members in the company weakens the influence of VAIC on ROE.

5.1.3 Hypothesis Proof

1. *Value Added Intellectual* Variable *Coefficient* (VAIC) is expected to have a positive relationship and have a significant effect on the company's financial performance, namely Return on Asset (ROA), *Return on Equity* (ROE) and *Asset Turnover Ratio* (ATO). The estimation results are in accordance with existing hypotheses and in accordance with *the Resources Based View Theory* which states that a company's competitive advantage can be created through internal resources.
2. Moderation variables, namely Family *Ownership* (OWN), Family Board of Directors (BOD), and *Family* CEO (*CEO*), are expected to strengthen the relationship between the influence of VAIC on the company's financial performance, namely Return on Asset (ROA), *Return on Equity* (ROE) and *Asset Turnover Ratio* (ATO). The estimation results show that family roles largely have no moderating influence on the effect of VAIC with the company's financial performance. But there are some indicators that indicate the opposite result of the hypothesis. The CEO indicator in 2019 and BOD in 2020 showed results that weakened the relationship of VAVIC's influence on the company's financial performance.

5.2 Discussion

5.2.1 The Effect of VAIC on the Company's Financial Performance

Value Added Intellectual Coeficient (VAIC) as a proxy of the intellectual capital of family companies has a positive and significant influence on the financial performance of family companies as measured by Return on Assets (ROA) and Return on Equity (ROE) as proxies of company profitability and Asset Turnover Ratio (ATO) as a proxy of company productivity. The condition of VAIC had a positive and significant effect on the company's financial performance in 2019 and 2020. In 2019, there were 30% of companies that had a poor performance predicate, namely the energy and transportation sector by 50% of the entire sector sample, while the industrial sector that was in the best performance was infrastructure by 60% of the entire sector sample. In 2020 there was an increase in poor performance to 45%. Companies in the industrial sector and non-primary consumer goods experienced a decline in performance, increasing poor performance to 60% and 63%.

5.2.2 Family Role Moderation on the Effect of VAIC and Company Performance

Family Ownership has no moderating influence on VAIC and a company's financial performance, both in times of crisis and before the crisis. The role of the family in the form of family share ownership has no effect at all on the relationship of Value Added Intellectual Coeficient (VAIC) to company performance. The Family Board of Directors (BOD) had a negative influence before the crisis and became significantly negative during

the crisis on the company's financial performance on the Asset Turnover Ratio (ATO) indicator. Family leadership weakened VAC's influence on ROA in the pre-crisis period, suggesting that the CEO's initial state of the family as the company's controlling authority tended to make decisions not based on financial goals but socioemotional goals.

5.3 Manjerial Implications

Table 5. Managerial Implications

Variable	Before Research	After Research
ROA	1. The Company Experienced a Decrease in ROA during the COVID-19 pandemic	1. Resource Management Efficiency
	2. As many as 18% of family companies experienced a negative ROA in 2019	2. Optimization of Family Roles
	3. As many as 35% of family companies experienced a negative ROA in 2020	
ROE	1. The Company Experienced a Decrease in ROE during the COVID-19 pandemic	1. Resource Management Efficiency
	2. As many as 18% of family companies experienced a negative ROE in 2019	2. Optimization of Family Roles
	3. As many as 35% of family companies experienced a negative ROE in 2020	
VAIC	1. Efficient resource management is able to provide optimal performance	1. Internal Development Investment
	2. As many as 45% of family companies fall into the Bad Perform category	2. HR Recruitment / Special HR
	3. As many as 30% of family companies fall into the Bad Perform category	3. Strengthening Family Culture
FAMILY ROLE	1. Family Role (CEO 2019 and BOD 2020) Weakens the Influence of VAIC on the Company's Financial Performance	1. Socioemotional Reinforcement
		2. Legacy Governance
	2. Most Family Roles Have No Moderation Influence	1. Investment Opportunities in Family Business

Source: Research Data

The managerial implication offered is the optimization of resource management in accordance with the Resources Based View Theory indicated by the value of VAIC. The implications for improving VAIC are 3 ways, namely:

1. Investing in internal resources during a pandemic is a wise step in preparing companies to achieve competitive advantage.
2. HR Recruitment or Special HR Formation can be an alternative for companies.
3. Although it weakens the relationship of VAIC's influence on a company's financial performance, it is undeniable that family culture is a unique resource. These unique resources can be optimized by always creating a positive family culture.

There are 3 implications for optimizing family roles, namely:

1. Optimization of the socioemotional condition of the family by increasing the role of family company leaders to need to build trust across generations in preparation for succession in family business.
2. Family conflict will usually create nepotism or oligarchy. The Board of Commissioners acts as a supervisor to advise the board of directors. One way to avoid conflicts related to family businesses is the division of inheritance which is an important key to reducing conflict.

3. It is important for investors to look at the track record of leading families. Because there are 2 moderation variables that weaken the influence of VAIC and performance, namely Family CEO (CEO) before the crisis on the effect of VAIC on ROA and Family BOD (BOD) after the crisis on the effect of VAIC on ROE.

6. Conclusion and Suggestion

6.1 Conclusion

1. Intellectual capital as measured by Value Added Intellectual Coefficient (VAIC) has a significant and positive influence on the company's financial performance as measured by Return on Asset (ROA), Return on Equity (ROE), and Asset Turnover Ratio (ATO).
2. Most family roles cannot be moderating variables in the relationship between the influence of VAIC and company financial performance which is reflected by several indicators, namely Return on Asset (ROA), Return on Equity (ROE), and Asset Turnover Ratio (ATO). This situation shows that most of the family roles that exist in the company do not affect the relationship of VAIC's influence on the company's financial performance. However, 2 of the 18 moderation variables were able to become pure moderation variables, indicating that these variables weaken the influence of VAIC on the company's financial performance.

6.2 Suggestion

1. Based on the discussion and conclusion, VAIC had a positive and significant effect on the company's financial performance indicators before and during the crisis due to the COVID-19 pandemic. Family roles have a moderating effect, which weakens the relationship of VAC's influence on the financial performance of family companies. The suggestion for family companies is to fit the implications of this study.
2. The suggestion for future research is to be able to compare the estimated results between one crisis and another. So it will be known that the trend from the estimation results is consistent or not with one crisis discussed in this study.
3. Future research can also capture the possible influence of family roles with quadratic variables such as disclosure of the effect of family stock ownership that has been concentrated on the performance of family companies.

7. Reference

Andres, Christian (2008). Family Ownership, Financing Constraint, and Investment Decisions. *Working Paper*. *University of Bonn*.

Avci, E., & Nassar, S. (2017). Intellectual capital and its impact on firm performance of the Turkish financial sector before and after financial crisis. *PressAcademia Procedia*, *3*(1), 916-924.

Wake Up, N. (2018). The effect of inventory turnover, receivables turnover and intellectual capital on profitability in manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2014-2016 period (empirical research on manufacturing companies listed on the Indonesia Stock Exchange for the 2014-2016 period). *Journal of Economics*, *23*(2), 226-239. https://doi.org/10.24912/je.v23i2.370

Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. *Journal of Intellectual Capital*, *20*(3), 406-425. https://doi.org/10.1108/JIC-12-2017-0184

Ginesti, G., & Ossorio, M. (2020). The influence of family-related factors on intellectual capital performance in family businesses. *Journal of Management and Governance*, *25*(2), 535-560.

Ginesti, G., Caldarelli, A., & Zampella, A. (2018). Exploring the impact of intellectual capital on company reputation and performance. *Journal of Intellectual Capital*, *19*(5), 915-934. https://doi.org/10.1108/JIC-01-2018-0012

Makhlouf, M. H., Laili, N. H., Ramli, N. A., Al-Sufy, F., & Basah, M. Y. (2018). Board of directors, firm performance and the moderating role of family control in Jordan. *Academy of Accounting and Financial Studies Journal*, *22*(5), 1-15.

Poutziouris, P., Savva, C. S., & Hadjielias, E. (2015). Family involvement and firm performance: Evidence from UK listed firms. *Journal of Family Business Strategy*, *6*(1), 14-32.

Ramírez, Y., Dieguez-Soto, J., & Manzaneque, M. (2020). How does intellectual capital efficiency affect firm performance? The moderating role of family management. *International Journal of Productivity and Performance Management*, *70*(2), 297-324. https://doi.org/10.1108/IJPPM-03-2019-0119

Singla, H. K. (2020). Does VAIC affect the profitability and value of real estate and infrastructure firms in India? A panel data investigation. *Journal of Intellectual Capital*, *21*(3), 309-331. https://doi.org/10.1108/JIC-03-2019-0053

Soewarno, N., & Tjahjadi, B. (2020). Measures that matter: an empirical investigation of intellectual capital and financial performance of banking firms in Indonesia. *Journal of Intellectual Capital*, *21*(6), 1085-1106. https://doi.org/10.1108/JIC-09-2019-0225

Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. *European Scientific Journal*, *15*(1), 93-106.