

R&D Intensity, Intellectual Capital Disclosure and Financial Business Performance: The Role of Foreign Ownership

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ABSTRACT

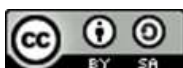
This research aims to examine and analyse the role of foreign ownership on financial business performance with R&D intensity and intellectual capital disclosure as intervening variables. The research sample was pharmaceutical firms that listing in Indonesia Stock Exchange in 2019-2022; 9 pharmaceutical firms that accomplish the requirements of this research. Data were analysed by using the Structural Equation Modelling/SEM method with SmartPLS program. This research found that intellectual capital disclosure, R&D intensity had a positive effect on ROE. Foreign ownership has no effect on ROE. R&D intensity and foreign ownership have a positive effect on intellectual capital disclosure, foreign ownership has a positive effect on R&D intensity. The limitations of the research are time constraints and single sector studies. In the future, other industries may examine the role of foreign ownership, R&D intensity, and disclosure of intellectual capital on their financial business performance.

Keywords: *foreign ownership, R&D intensity, intellectual capital disclosure, financial business performance*

INTRODUCTION

Financial business performance is a material to review how high the profit that a company can earn using profitability, one of which is the Return on equity or ROE ratio to measure financial business performance, by measuring the company's ability to manage its equity to achieve profit. Through high ROE it can signal that investors will receive high returns. Financial business performance is crucial because it is an appraiser to review a company's ability to manage its resources excellently to face business competition. The current era of industry 4.0 is marked by the rapid development of knowledge supported by technology. This makes the business environment more competitive and transitions from the original labor-based business to knowledge-based business (Setianto & Purwanto, 2014). Indonesia's competitiveness was observed in the 44th position per 63 countries in 2022 in the Institute for Management Development World Competitive Year Book 2022 (IMD, 2022) report. In order for the company to survive in the competitiveness of a knowledge-based business, the company is required to expand its potential which does not only lie in tangible assets, but also the added value that can be generated by managing other resources and is useful for improving company performance.

Based on resource based theory, intellectual capital in the company's annual report is a form of added value that is useful for creating a competitive advantage.



Intellectual capital disclosure is a strategic information that investors get because it helps reduce skepticism about future opportunities and facilitate a more precise evaluation of the company, which can be recognized as one of the possible answers to expand transparency by reducing data asymmetry between data providers and data users (Bukh & Johanson, 2003). Through intellectual capital disclosure, it can be an effort to separate information that is not usually disclosed in the company's balance sheet (White et al., 2007). The role of intellectual capital is important because intellectual capital is one of the advantages and also shows better financial business performance (Soewarno & Ramadhan, 2020).

Although the practice of intellectual capital disclosure in Indonesia is still voluntary (Emilia & Ovami, 2021), this phenomenon has begun to develop since the emergence of PSAK 19 regarding intangible assets. Based on IAS 38 in PSAK 19, it is defined as an intangible asset as a non-monetary asset without a physical form. In 2022 US . The Chamber International IP index tenth edition released that Indonesia has an intellectual property index with a score of 30.42% which is an increase of 0.26% from the previous year, although the score obtained is relatively low when compared to other ASEAN countries such as Thailand (35.78%), Vietnam (38.72%), Brunei (41.08%), Philippines (41.58%), Malaysia (51.90%), and Singapore (84.44) this can be concluded that Indonesia already has an awareness of the importance of intellectuals Capital. Increasing intellectual capital disclosure is an effort that is needed by the company to maintain the company's performance and attract investors, because the company's performance is no longer only determined by the amount of tangible assets owned, but also determined by intellectual capital which is the true value for the company and one of the factors for investors to consider to determine their investment decisions.

R&D is one part of intellectual capital and plays a role in improving financial business performance. The provision of intensive taxes to industrial companies conducting R&D in Indonesia has started since 2003 based on the Decree of the Minister of Finance Number 769 of 1990 (KMK-769). Intensive giving can encourage R&D activities in the company. The company will spend funds on R&D in innovating new knowledge to develop products, creating new products, discovering new knowledge that is useful for the future. Through R&D activities, it helps companies in creating long-term value (Aisyah & Sudarno, 2014). The high intensity of R&D will provide a positive response by investors (Yuliana, 2012). Increasing R&D activities is a strategic step for the company to innovate by developing products, meeting consumer needs, creating competitiveness and improving the company's financial business performance (Vithessonthi & Racela, 2016).

Foreign ownership is the composition of company shares held by individuals, legal entities, the government, and other parts that are not local status. Foreign ownership is an impact factor on financial business performance (Widichesty & Arief, 2021). The high proportion of foreign ownership is suspected to be able to increase performance, because managerial is more centralized and efficient to guide the company's operational activities so that the target to optimize profits can be targeted (Chaerunisa & Hapsari, 2018). The higher the number of foreign investors in the company, the higher the performance of the company invested, because they have good management, technology systems and innovations and can have a positive influence on the company (Wiranata & Nugrahanti, 2013). Foreign ownership also has a serious concern for R&D activities (Widi & Barry, 2020) so that the company will continue to innovate to attract investors and improve financial business performance.

The selection of research objects uses pharmaceutical sector companies with the consideration of companies included in High IC-intensive industries or it can be said

that companies that make great use of intellectual capital in their operational activities and companies with high R&D intensity. At the end of 2022, the pharmaceutical sector in Indonesia had received a spotlight related to the case of syrup drugs that resulted in acute kidney failure affecting hundreds of children in Indonesia. Martin Manurung as the deputy chairman of Commission VI of the House of Representatives of the Republic of Indonesia assessed that Kimia Farma as one of the SOEs engaged in the pharmaceutical sector needs to improve from various aspects, including in terms of product quality, downliner quality to service quality. Although Kimia Farma is not involved in the syrup drug case, it certainly affects the public's trust in pharmaceutical products in Indonesia, so the company needs to restore its integrity (DPR, 2022). From this case, it encourages pharmaceutical companies in Indonesia to restore the trust of the public and investors which can be done through intellectual capital disclosure and continue to innovate through R&D activities which are expected to have an impact on good financial business performance.

Based on the above explanation, the researcher will further examine the relationship between foreign ownership and financial business performance and ROE proxies. In addition, this study also uses intellectual capital disclosure and R&D intensity as mediation variables.

METHOD

The population of this study is companies listed on the Indonesia Stock Exchange with the target of research for pharmaceutical sector companies in 2019-2022 as many as 11 companies. The sampling technique uses *the purposive sampling method* with the aim of obtaining a representative sample and in accordance with the criteria formed, namely (1) Pharmaceutical companies listed on the Indonesia Stock Exchange in 2019-2022, (2) Pharmaceutical companies that have complete financial statements in 2019-2022, (3) Pharmaceutical companies that are not *delisted* from the Indonesia Stock Exchange in 2019-2022. The sample of this study is 9 companies with a total of 36 observations during 2019-2022.

Financial business performance

The *variable financial business performance* is measured based on the profitability ratio. Profitability refers to how much profit can be achieved from the effectiveness of a company's performance. In *financial business performance research*, it is proxied by the ROE/*return on equity ratio* where this ratio is calculated from the company's income to the capital invested by shareholders. ROE is calculated using the following formula:

$$ROE = x 100\% \frac{\text{Laba bersih setelah pajak}}{\text{Ekuitas pemegang saham}}$$

Foreign ownership

Foreign ownership is the share of shares owned by individuals, legal entities, the government and other parts that have foreign status to all outstanding shares in the company (Aisyah & Sudarno, 2014). The measurement of *foreign ownership* is proxied as follows:

$$FOR = \frac{\text{jumlah saham kepemilikan asing}}{\text{jumlah saham yang beredar}}$$

R&D Intensity

R&D intensity is a company's strategy in creating long-term value. The intensity of R&D is calculated using the formula:

$$IRND = \frac{\text{Total Pengeluaran R\&D}}{\text{Total Penjualan}}$$

Intellectual capital disclosure

Intellectual capital is an *intangible asset* that includes information and science resources that function to compete with other companies and can improve the performance and value of a company in the eyes of the public. *Intellectual capital disclosure* is measured using the *content analyst* technique in a simple form. If the company discloses items that are in accordance with the *intellectual capital disclosure index*, it will be given a score of 1. If the company does not disclose the assigned item then it is given a score of 0. Each item score is summed up to obtain the total disclosure score for each company. The percentage of the disclosure index is calculated using the formula:

Keterangan:

ICDi = Indeks pengungkapan *intellectual capital*
 di = 1 apabila disebutkan dalam *annual report*,
 0 apabila tidak disebutkan dalam *annual report*
 M = Jumlah item pengukuran (78 item)

$$ICDi = x 100\% \frac{\sum di}{M}$$

The study used a *disclosure index* with 78 items developed by (Bukh *et al.*, 2005). The system of assigning the number codes 0 and 1. *Intellectual capital disclosure* is divided into six categories, namely:

Table 1.
Komponen *Intellectual capital disclosure*

INFORMATION	ITEM	CODE
Employees (27 items)	Employees by age	E-1
	Employees by seniority	E-2
	Employees by gender	E-3
	Employees by nationality	E-4
	Employees by department	E-5
	Employees by job function	E-6
	Employees by education level	E-7
	Employees turnover rate	E-8
	Comment on changes in the number of employees	E-9
	Comment on the health and safety of employees	E-10
	Employees absenteeism rate	E-11
	Employees interviews	E-12
	Competency development policy statement	E-13
	Programs and activities of competency development	E-14
	Education/training expenses	E-15
	Education/training expenses by number of employees	E-16
	Employees expenses by number of employees	E-17

	<i>Recruitment policies</i>	E-18
	<i>A separate indication firm has a HRM department, division or function</i>	E-19
	<i>Job rotation opportunities</i>	E-20
	<i>Career opportunities</i>	E-21
	<i>System of remuneration and incentive</i>	E-22
	<i>Pension</i>	E-23
	<i>Insurance policy</i>	E-24
	<i>Dependency on key personnel</i>	E-25
	<i>Revenue per employees</i>	E-26
	<i>Value added per employees</i>	E-27
<i>Customers (14 items)</i>	<i>Number of customers</i>	C-1
	<i>Sales by customers</i>	C-2
	<i>Annual sales per segment/product</i>	C-3
	<i>Average purchase size by customer</i>	C-4
	<i>Dependence on major customers</i>	C-5
	<i>Customer involvement in firm's operations</i>	C-6
	<i>Customer relations</i>	C-7
	<i>Education/training of customers</i>	C-8
	<i>Customers to employees ratio</i>	C-9
	<i>Value added per customer or segment</i>	C-10
	<i>Absolute market share (per cent) of the firm in its industry</i>	C-11
	<i>Relative market share (not expressed as percentage) of the firm</i>	C-12
	<i>Breakdown of market share (percent) by country, segment, product</i>	C-13
	<i>Repurchase</i>	C-14
<i>Information Technology (5 items)</i>	<i>IT investment</i>	IT-1
	<i>Existing IT systems</i>	IT-2
	<i>Software assets owned or developed by the firm</i>	IT-3
	<i>IT facilities description</i>	IT-4
	<i>IT expenses</i>	IT-5
<i>Processes (8 items)</i>	<i>Information and communication within the firm</i>	P-1
	<i>Efforts related to the working environment</i>	P-2
	<i>Work from home</i>	P-3
	<i>Share knowledge and internal information</i>	P-4
	<i>Sharing external knowledge and information</i>	P-5
	<i>Measure internal or external processing failures</i>	P-6
	<i>Discussion of fringe benefits and corporate social programs</i>	P-7
	<i>Environmental approvals and statements/policies</i>	P-8
<i>Research & Development (9 items)</i>	<i>Statements of policy, strategy and/or objectives of R&D activities</i>	RD-1
	<i>R&D expenditures</i>	RD-2

items)	<i>Ratio of R&D expenses to sales</i>	RD-3
	<i>R&D invested into basic research</i>	RD-4
	<i>R&D invested into product design and development</i>	RD-5
	<i>Details of future prospects regarding R&D</i>	RD-6
	<i>Existing patent details of the company</i>	RD-7
	<i>Number of patents and licenses, etc</i>	RD-8
	<i>Information about pending patents</i>	RD-9
Strategic statements (15 items)	<i>Description of the new production technology</i>	SS-1
	<i>Company quality performance statement</i>	SS-2
	<i>Information about the firm's strategic alliances</i>	SS-3
	<i>Objectives and reason strategic alliances</i>	SS-4
	<i>Comments on the effects of strategic alliances</i>	SS-5
	<i>Description of the supplier and distributor network</i>	SS-6
	<i>Image and brand statement</i>	SS-7
	<i>Corporate culture statements</i>	SS-8
	<i>Statements about best practices</i>	SS-9
	<i>Organizational structure of the firm</i>	SS-10
	<i>Utilization of energy, raw materials and other input goods</i>	SS-11
	<i>Environment investment</i>	SS-12
	<i>Description of community involvement</i>	SS-13
	<i>Information about corporate social responsibility and objectives</i>	SS-14
	<i>Description of employees contract</i>	SS-15

Source: (White et al., 2007)

Data analysis method uses Structural Equation Modelling (SEM) to test the direct effect of exogenous variables on endogenous variables and to test the indirect effect of exogenous variables on endogenous variables using mediation variables.

Result

Descriptive statistical analysis

Table 2.

Descriptive Statistical Analysis Results

VARIABEL	MIN	MAX	MEAN	DEVIASI
<i>Financial business performance</i>	0.002	0.262	0.107	0.073
<i>Foreign ownership</i>	0.100	0.990	0.454	0.356
<i>Intensitas R&D</i>	0.000	0.020	0.005	0.006
<i>Intellectual capital disclosure</i>	22.000	59.000	44.563	9.437

Descriptive results of the *financial business performance* variables of pharmaceutical companies listed on the IDX for the 2019-2022 period, as measured by ROE, obtained a minimum value of 0.002 for PT Kimia Farma in 2019 and showed a maximum value of 0.262 for PT Organon Pharma Indonesia in 2020. The average

obtained is 0.107 with a standard deviation value of 0.073. This means that the deviation value is smaller than the mean, the data spread is correct.

The *foreign ownership* variable obtained a minimum value of 0.100 and a maximum value of 0.990. The average obtained is 45.4%, this can be said to be foreign ownership in pharmaceutical companies in Indonesia is quite high.

The R&D intensity variable has a minimum value of 0.000 with a maximum value of 0.020. The result of the deviation value was 0.006. This means that the standard deviation is greater than the mean, so there is a slight deviation from the distribution of the data set.

The *intellectual capital disclosure variable* with a minimum value of 22,000 and a maximum value of 59,000. The average obtained is 44,563, which means that the practice of *intellectual capital disclosure* in pharmaceutical companies in Indonesia is quite high. The standard deviation value was obtained at 9,437. A deviation value that is smaller than the mean is said to be the spread of the data not far from the mean or precise in the calculation.

Parametric statistical analysis

Testing of *intellectual capital disclosure* indicators

The *disclosure* index with 78 items as shown in table 1. After tabulation by updating the code using the numbers 0 and 1. Furthermore, the 78 *items of intellectual capital disclosure* were extracted into six indicators (average score) consisting of *Employees, Customers, Information Technology, Process, Research and Development and Strategic statements*. This indicator then tests its validity and reliability level to determine the extent to which it is able to represent *intellectual capital disclosure* as shown in Table 3. The indicator is said to have good validity and reliability if the *loading factor* and *alpha cronbach values* are at least 0.6.

Table 3.
Validity and Feasibility of *Intellectual Capital Disclosure* Indicators

<i>Intellectual capital disclosure</i> Indicators	Loading Factor	Cronbach Alpha
<i>ICD Customer</i>	0.780	0.904
<i>ICD Employeeess</i>	0.674	
<i>ICD IT</i>	0.809	
<i>ICD Process</i>	0.845	
<i>ICD R&D</i>	0.954	
<i>ICD Strategic Statements</i>	0.866	

4.2 Uji Goodness of fit test

Table 4.
Coefficient of Determination

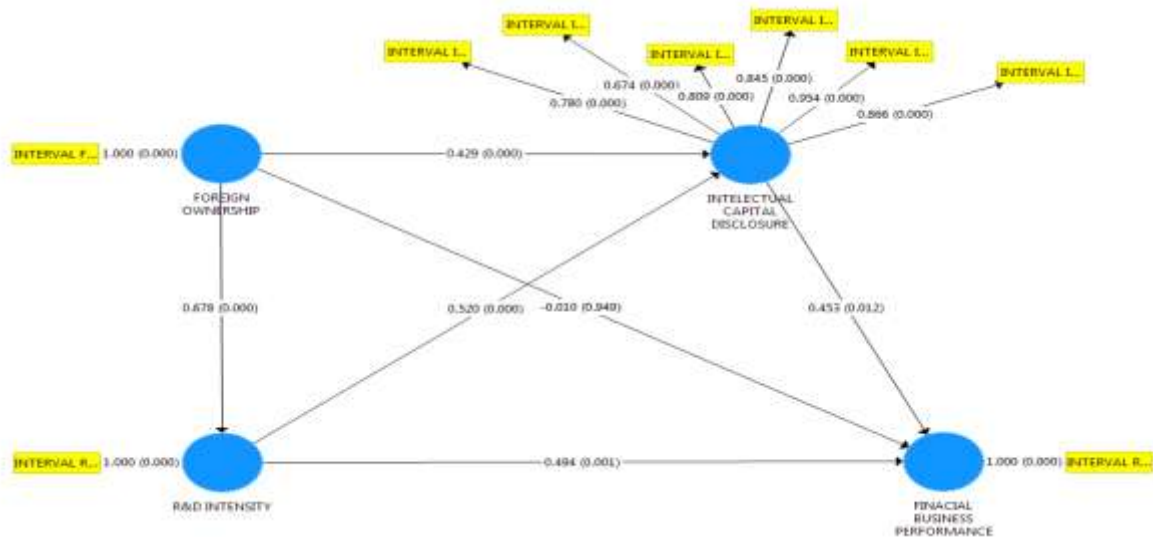
	R Square
<i>Financial Business Performance</i>	0.800
<i>Intellectual Capital Disclosure</i>	0.757
<i>R&D Intensity</i>	0.460

The results of the determination coefficient show the suitability of the data with the model. It represents the proportion of variance in the dependent variable that can be explained by the independent variable in the model. In other words, it measures the strength of the relationship on a scale from 0 to 1, or 0% to 100%. A higher R-square value indicates that there is more variability in the dependent variable that can be explained by the independent variable.

Based on table 4 below, the value of *Q square* is calculated as follows:
 $Q\ Square = 1 - (1 - Rsquare1) * (1 - Rsquare2) * (1 - Rsquare3) = 0.9737$ or 97.37%.

The *Q Square value* can be categorized as high and indicates that the model being tested has compatibility with the data.

Uji Hypothesis



	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P values
FOREIGN OWNERSHIP_ -> FINANCIAL BUSINESS PERFORMANCE	-0.010	0.006	0.151	0.063	0.949
FOREIGN OWNERSHIP_ -> INTELLECTUAL CAPITAL DISCLOSURE	0.429	0.428	0.119	3.595	0.000
FOREIGN OWNERSHIP_ -> R&D INTENSITY	0.678	0.674	0.090	7.500	0.000
INTELLECTUAL CAPITAL DISCLOSURE -> FINANCIAL BUSINESS PERFORMANCE	0.453	0.459	0.180	2.516	0.012
R&D INTENSITY -> FINANCIAL BUSINESS PERFORMANCE	0.494	0.468	0.153	3.228	0.001
R&D INTENSITY -> INTELLECTUAL CAPITAL DISCLOSURE	0.520	0.523	0.118	4.421	0.000

Based on the table of results of *the path coefficient* effect test, it can be explained as follows:

Intellectual capital disclosure affects financial business performance

The value of the coefficient of the influence of *intellectual capital disclosure* on *financial business performance* measured by ROE is 0.453 with a *p value* of 0.012. These results show that there is a positive influence between *intellectual capital disclosure* and *financial business performance*. This indicates that the higher the level of *intellectual capital disclosure*, the more profitability the company will increase. In line with *resource based theory* where *the intellectual capital* owned by pharmaceutical companies is able to create a competitive advantage that becomes a *value added* company, not only that is reviewed from *signalling theory*, the level of *intellectual capital disclosure* which is a positive signal for investors, so that it can increase profitability and the level of investor confidence in the company. The results of this study are in accordance with the research conducted by (Herdyanto & Nasir, 2013) and (Faza & Hidayah, 2014) concluding that *intellectual capital* has a significant positive effect on ROE.

R&D intensity affects intellectual capital disclosure

The value of the coefficient of the influence of R&D intensity on *intellectual capital disclosure* was 0.520 with a *p value* of 0.000. The results showed a positive influence between R&D intensity and *intellectual capital disclosure*. This shows that the intensity of R&D affects in increasing *intellectual capital disclosure*. According to *signalling theory*, some information is expected to be able to give a positive signal to investors that pharmaceutical companies are doing good industrial practices. The high intensity of R&D is a positive signal for investors because the company is able to manage *its intellectual capital* well. This research proves that companies with a high R&D intensity will carry out wider *disclosure* about R&D activities which is one of the elements of *intellectual capital*. The results of this study are in accordance with the research conducted (Alfariza & Hermawan, 2021).

R&D intensity affects financial business performance

The value of the coefficient of the influence of R&D intensity on *financial business performance* is 0.494 with a *p value* of 0.001. The results obtained show that there is a positive influence between R&D Intensity on *financial business performance*. Investments made by companies for R&D activities increase innovations that can increase the company's profitability (Warusawitharana, 2015). *Resource based theory* shows that companies that have valuable resources and capabilities that are impossible to replicate and cannot be replaced will have an advantage over other companies in terms of performance improvement (Ghaffar & Khan, 2014). This research is consistent with the research conducted (Chadys et al., 2018), where companies increase the intensity of research and development, which can have a positive influence on the company's profitability.

Foreign ownership affects intellectual capital disclosure

The value of the coefficient of *foreign ownership* influence on *intellectual capital disclosure* is 0.429 with a *p value* of 0.000. These results show that there is a positive influence of *foreign ownership* on *intellectual capital disclosure*. Due to differences in management techniques, *corporate governance mechanisms*, and organizational culture, *foreign ownership* will have higher standards for companies compared to locals. The high proportion of *foreign ownership* in companies often faces

information asymmetry, based on *agency theory*, companies will take the initiative to disclose in-depth information in order to reduce *agency costs*. *Foreign ownership* is also more *concerned* with increasing the company's long-term value (Aisyah & Sudarno, 2014) which can be reviewed from the management of *the company's intellectual capital* such as human resources, matters related to *customers*, information technology owned, *processes* both internal and external to the company, R&D activities and corporate strategy are presented in the *annual report* (White et al., 2007). This research is consistent with research conducted by (Mujiani et al., 2020) and (Salsabilah et al., 2020).

Foreign ownership affects R&D Intensity

The value of the influence coefficient *of foreign ownership* affects the intensity of R&D is 0.678 with a *p value* of 0.000. These results show that there is a positive influence *of foreign ownership* on R&D intensity. *Foreign ownership* has a serious concern for increasing long-term value for the company which can be reviewed through the magnitude of the company's R&D intensity. The results of this study are consistent with studies conducted by (Widi & Barry, 2020) and (Chandra & H, 2019) with similar results.

Foreign ownership affects financial business performance

The value of the influence coefficient *of foreign ownership* on *financial business performance* is -0.010 with a *p value* of 0.949. These results show that there is a negative influence between *foreign ownership* on *financial business performance* but not significant. In this case, the sixth research hypothesis (H6) is rejected. These results contradict the research that has been conducted by (Wiranata & Nugrahanti, 2013) and (Chaerunisa & Hapsari, 2018). Based on observations, pharmaceutical companies in Indonesia with a fairly high average *foreign ownership* of 45.4% are not necessarily effective in influencing *financial business performance* because *foreign ownership* is not the only one that moves stock prices significantly. This gives the understanding that the size or size of *the composition of foreign ownership* in the company has no effect on increasing or decreasing *financial business performance*. From the results obtained, this study is in line with research conducted by (Zulkarnain & Kusuma, 2018) with similar results.

CONCLUSION

This study examines the influence of *foreign ownership*. The number of companies representing the criteria as a sample is 9 companies with a total of 36 observations for the 2019-2022 period. The data analysis method was carried out with *Structural Equation Modelling/SEM* using the SmartPLS tool. Hypothesis tests and analyses carried out by researchers, it can be concluded that the results of the research are as follows:

- H1 accepted, *intellectual capital disclosure* has a positive effect on *financial business performance*
- H2 is accepted, R&D intensity has a positive effect on *intellectual capital disclosure*
- H3 accepted, R&D intensity has a positive effect on *financial business performance*
- H4 accepted, *foreign ownership* has a positive influence on *intellectual capital disclosure*
- H5 is accepted, *foreign ownership* has a positive influence on R&D Intensity

- H6 rejected, *foreign ownership* has no effect on *financial business performance*

The limitation in this study lies in the sample of this study is only limited to pharmaceutical companies located in 1 country, namely Indonesia and only took 4 observation periods from 2019-2022. Researchers can then expand the sample such as LQ45 listed industries, manufacturing, banking and other sectors so that the results of the research can be generalized. For further researchers, they can consider using research objects from more than 1 country.

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