The Determinants of Intellectual Capital Disclosure on Firm Value: The Evidence on the Financial Companies in Indonesia

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ABSTRACT

Objectives: Firm value is the price of the firm that can be sold with a price agreement that will be paid by the buyer. A high stock price will increase the value of the company and increase the prosperity of the investors. Therefore, to attract the attention of buyers of company shares, companies must provide the best and most detailed financial information possible. For information that can be disclosed in financial reports, namely intellectual capital. The presence of PSAK No. 19 concerning intangible assets marked the beginning of the phenomenon of intellectual capital in Indonesia. It turns out that although Intellectual Capital Disclosure has started to grow in Indonesia, the growth is still very small. Companies in Indonesia should be required to disclose their intellectual property, particularly in the financial industry. This is because the financial services sector which is highly dependent on information uses more intellectual capital in its operations than the industrial sector which relies more on tangible assets. As it is known, the disclosure of intellectual capital can provide an attraction for investors to increase the value of the company. This study aims to find out how factors such as firm age, leverage, profitability, and independent commissioners affect firm value through the disclosure of intellectual capital.

Methodology: This study uses a sample of financial sector companies listed on the Indonesia Stock Exchange in 2020-2021 with a total population of 105 companies and a total sample of 83 companies. This research uses panel data.

Finding: According to the findings of this study, business size, profitability, age, independent commissioners, and disclosure of intellectual capital have a beneficial impact on firm value of about 43%. However, leverage does not affect firm value. Furthermore, the mediation test results show that disclosure of intellectual capital is not able to mediate the relationship between the effect of firm size, leverage, profitability, and firm age on firm value. Only the influence of independent commissioners mediates firm value.

Conclusion: For future researchers, it is expected to increase the research period and add other factors that influence the disclosure of intellectual capital.

Keywords: Firm Age; Firm Size; Firm Value; Independent Commissioner; Intellectual Capital Disclosure; Leverage; Profitability

Submitted: 2023-03-16
Revised: 2023-06-05
Accepted: 2023-06-20

Article Doi: http://dx.doi.org/10.22441/jurnal_mix.2023.v13i2.001
INTRODUCTION

The purpose of establishing a company is to generate profits by maximizing the resources owned by the company (Sunaryo, 2020). The company is a business entity and a gathering place for labor, capital, natural resources, and entrepreneurship to get maximum profit, prospering company owners, and optimize company value which can be seen from its share price (Sungkono, 2019). Firm value is defined as the price that potential investors are willing to pay if a company is to be sold, company value can reflect the value of assets owned by the company such as securities (Massie et al., 2017). The increase in the value of the company affects the increase in share prices which is characterized by a high return on investment to shareholders. Increasing the value of the company can convince investors that investing in this company is profitable. This will attract investors to invest more. Firm value is the price available to be paid by potential investors if the company is to be sold. Firm value is very closely related to the state of the company (Gendro, 2017).

Firm value can be measured from stable stock prices and increases in the long run, high stock prices also tend to make the company value high. A financial manager has goals to be achieved in a company while the company's goal is to maximize shareholder wealth through increasing company value (Oktiwiati & Nurhayati, 2020). An increase in shareholder profits is an indication of higher company value (Wijaya, 2014). Company value is measured by the Price Earning Ratio (PER), this ratio is the ratio of share price divided by earnings per share. A good Price Earning Ratio should not be too high while not too low either. Complete criteria: The ideal PER value for undervalued stocks is below 15x. Value Investors like to collect stocks with a PER below 15x since a PER of more than 15x means it is too expensive (Ardatiya et al., 2022). Various factors influence company value including firm size, profitability, leverage, firm age, and the number of independent commissioners.

A large firm size suggests that the business is expanding and that investors may expect a higher rate of return. As a result, investors will get interested in the firm and its value will rise (Vernando & Erawati, 2020). Big firm size is also considered easy to attract investors to put additional funds into the company because investors saw the positive growth of the company (Goh et al., 2022; Saratian et al., 2020). As opposed to Ramdhonah (Ramdhonah et al., 2019) who claimed that the value of a firm decreased with size since larger corporations would not have the guts to undertake expansion-related expenditures before their debts were settled. Leverage management is crucial since tax protection is dependent on a high level of leverage utilization that can raise a company's worth (Nadhilah et al., 2022; Bagaskara et al., 2021). Contrary to the results of previous research by Rejeki (Soelton et al., 2019; Rejeki & Haryono, 2021), the addition of debt will result in increased interest costs and bankruptcy risk which is higher than the benefits to be obtained by the company. Therefore, an increase in debt will cause a decrease in the value of the company.

Yulianto's research (Widyasasi, 2020; Nofriyanti & Rahmi, 2022) found that companies that already have a good reputation are companies that have been around for a long time. Contrary to the research results of Kalbuana et al (Kalbuana et al., 2021) which stated that companies that had been established for a long time experienced slow growth so investors are less interested in investing which decreases the company's value. Research by Dewantari (Dewantari et al., 2020) found that a high level of profitability can increase investor confidence
to invest in the company. Contrary to Mercyana's (Mercyana Clarissa et al., 2022) and Primakus's research (Primarkus et al., 2019) showing that profitability can also reduce firm value. This can happen because in increasing profitability, companies will increase their operational activities so that the costs incurred from these activities will also increase.

Then the research conducted by Rahmawati (Rahmawati, 2021) concluded that the independent board of commissioners has a positive effect on company value. According to agency theory (Jensen & Meckling, 1976), an independent board of commissioners is considered the highest internal control mechanism responsible for monitoring top management policies. According to agency theory, the number of independent commissioners can make it easier to control top management and can improve the monitoring function which increases the company's value. However, Amaliyah's research (Amaliyah & Herwiyanti, 2019) shows that the role of the independent board of commissioners is less effective since it can be concluded that the independent board of commissioners is unable to increase company value. The number of independent commissioners cannot be used as a guarantee to increase the value of the company. This is possibly due to the existence of independent commissioners only as a formality to comply with regulations from the Financial Services Authority so independent commissioners do not carry out the monitoring function properly.

The gap in this study is the inconsistency of research results between the effect of firm age, leverage, profitability, and firm size on firm value. While the difference between this research and previous research is that this research adds an intervening variable, namely the disclosure of intellectual capital. According to Nugroho in Devy Nurfitasari (2018:01), Intellectual capital disclosure is knowledge, information, and wealth intellectual. ICD is able to find opportunities and manage threats that can affect the company. Therefore, it can affect the durability and competitive advantage of the company. Disclosure of intellectual capital by the company in the annual report is expected to reduce information asymmetry and increase investor confidence and employee loyalty.

Research in the area of intellectual capital has run into problems as a result of more complicated economic changes (Mawarsih, 2016). It is advantageous to disclose intellectual property in order to make annual reports more pertinent. The value of a firm rises as a result of increased openness and decreased information asymmetry which are both connected to the disclosure of excellent intellectual capital. Increased annual report relevance would help lessen information asymmetry, particularly through the disclosure of intellectual capital as it is impacted by different corporate features and is known to boost a firm's worth (Silitonga & Wulandari, 2018).

By conducting this research, it is hoped that disclosure of intellectual capital can contribute to the effect of company size, profitability, leverage, firm age, and independent commissioners on firm value in the banking sector of Indonesia.
LITERATURE REVIEW

Research Variables

1. Intellectual Capital Disclosure
   Ulum (Ulum et al., 2020) states that intellectual capital is the term given to a combination of intangible assets, property, intellectuals, employees, and infrastructure that enables companies to function. Disclosure of intellectual capital is valuable information for the company stakeholders (Susanto et al., 2019). Intellectual Capital Disclosure is regarded as highly appropriate to evaluate the business activity and company value but cannot entirely cover financial disclosure (Birindelli et al., 2020). According to Yates et al., in Ulum (Ulum et al., 2020) the intellectual component is divided into human capital, structural capital, and customer capital. Intellectual capital disclosure to date is a voluntary disclosure. The absence of official standards or regulations governing intellectual capital disclosure makes it difficult to identify what items are considered components of intellectual capital (Hatane et al., 2019).

   Employees' talents are the source of the firm's innovation, strategy, dreams, reengineering process, and everything that produces a good market perception for the company in the eyes of the market where companies may surpass the competition and sales (Bontis, et al in Lubis and Ovami) Human capital is crucial (Lubis & Ovami, 2020), Nasution and Ovami (Nasution & Ovarni, 2021)). Bukh et al. (Nikolaj Bukh et al., 2005) developed an intellectual capital reporting framework by classifying intellectual capital into 6 categories. This classification was used and later developed again by Branswijck and Everaert (Branswijck & Everaert, 2012). Intellectual capital items are classified into 6 categories, namely (1) human resources, (2) customers, (3) information technology, (4) processes, (5) research and development, (6) and strategic statements. The total number of items used in this study is as many as 83 items.

2. Firm Value
   Firm value is the perception of investors about the firm’s success rate which is closely related to the share price (Sutrisno, 2020). High demand for shares will increase the share price which means firm value also increases. According to Hasanah and Lekok (Hasanah & Lekok, 2019), the main purpose of firms is to increase the wealth of its shareholders. A high firm value is the desire of the shareholders because it indicates that the prosperity of shareholders is also high. Firm value is the collective value of investors about a company's performance (Indrarini, 2019). The price of shares traded on the stock exchange serves as a proxy for firm value for companies that issue shares on the capital market. The Price to Book Value (PBV) is a measure of the firm value in this research. According to Kieso, Weygandt, and Warfield (Kieso, 2011), Financial ratios can be used to assess whether a stock is worth buying or not. This ratio is calculated by comparing the market price to book value (PBV).

\[
PBV = \frac{\text{Market Price Per Share}}{\text{Book value per Share}}
\]
3. Firm Size
A firm's size is determined by its assets, number of sales, average total sales, and average total assets (Goh et al., 2019). Large firm size can describe future profit levels which is good information for investors. Big firm size may be a sign that a business is expanding and it can also be seen in the total asset value that is listed on the balance sheet. Businesses with significant overall assets demonstrate that they have matured. Firm size can indicate the size of the firm as measured by looking at the number of assets, the number of sales, and the market capital (Solihin et al., 2020). Investors will certainly be interested in investing in large companies.

\[
\text{Firm Size} = \ln \text{Total Asset}
\]

4. Leverage
The leverage ratio according to Fahmi (2020) is a measure of how much the company is financed with debt. Excessive debt will be dangerous for a company, especially if it is included in the category of extreme leverage (extreme debt). Companies that are trapped in high debt levels will experience difficulty getting out of the debt burden. The solvency ratio or leverage ratio according to Kasmir (2019) is the ratio used in measuring how much the company's assets are financed with obligations. This means how much debt the company has compared to its activity. In a broader sense, the leverage ratio is used to measure the ability of a company to fulfill all of its obligations, both short-term and long-term. If it is insolvent, the company will be dissolved (liquidation). The higher this ratio, the riskier it is to invest in the company. This also works vice versa since the smaller this ratio, the lower the risk to invest in the company (Anwar, 2019). The leverage ratio used in this study is the debt-to-asset ratio:

\[
DAR = \frac{\text{Total liabilities}}{\text{Total Asset}}
\]

5. Profitability
A ratio called profitability is used to evaluate a business's capacity for profit-making. The company's strong capacity to make money is then demonstrated by its good profitability. Usually, companies that have a high level of profitability tend to have low debt levels (Suherman, 2019). The amount of profit the business generates increases in direct proportion to its level of profitability. This ratio is used to assess how well management is managing the company's resources as seen by the earnings from sales and investments (Kasmir, 2019; Arief, 2021). According to Prihadi (2020), profitability is the ability to generate profit. In accordance with Kasmir, the measurement of profitability through ROA, ROE, and NPM is obtained by comparing net income to total assets.

\[
\text{ROA} = \frac{\text{Net Income}}{\text{Total Asset}}
\]

6. Firm Age
Debora (Debora, 2019) explains that the age of a company can be interpreted as the start of the company when it was founded and when the company itself can maintain the existence of a business. Old company age is synonymous with a lot of experience. In contrast with the age of a company that is still young. Mulyadi & Ariyanti, (Mulyadi &
Ariyanti, 2019) states that old companies must provide information about disclosure of intellectual capital to stakeholders. When disclosing information about a large company, the quality of the company is shown to outsiders of the company. Firm age is used to measure the company's ability to maintain its existence in the business world from the start until it reaches its goals. According to agency theory, a company's agent will typically provide more information to the principal because they have more expertise and can demonstrate the company's longevity and ability to thrive in the commercial world.

\[
\text{Firm Age} = \text{Final Year of Financial Statements Listed on the IDX} - \text{Company Established Year}
\]

7. Independent Commissioners
Joson & Susanti in Anggraeni (Anggraeni & Prasetyono, 2021) stated that an independent commissioner is a neutral party expected to be able to bridge the information asymmetry that occurs between shareholders and company managers. With the existence of an independent commissioner, problems that occur between shareholders and company managers can be overcome. Independent commissioners do not side with one of the stakeholders in each company. An Independent Commissioners' job is to regulate management behavior in carrying out company activities so that it can overcome information asymmetry that is occurring between the principal and the agent. Making greater disclosures is one method of protection that an independent commissioner can use (Yuniasih et al., 2012)

\[
\text{Independent commissioners} = \frac{\text{Total Independent commissioners}}{\text{Total Board of Commissioners}} \times 100\%
\]

**Conceptual Framework and Hypothesis**

The purpose of this study is to find out how the disclosure of intellectual capital can affect firm value in the Indonesian financial sector. Firm size, leverage, profitability, firm age, and independent commissioners are business attributes related to intellectual capital. The conceptual basis of this research is as follows:
Figure 1. Conceptual Framework

Figure 1 describes the conceptual framework of this study with the following hypotheses:

- H1: Firm size (SIZE) affects firm value (PBV)
- H2: Leverage (ROA) affects firm value (PBV)
- H3: Profitability (DAR) affects firm value (PBV)
- H4: Firm age (AGE) affects firm value (PBV)
- H5: Independent commissioners (IC) affect firm value (PBV)
- H6: Intellectual capital disclosure (ICD) affects firm value (PBV)
- H7: Firm size (SIZE) has an effect on firm value through intellectual capital disclosure (ICD)
- H8: Leverage (ROA) has an effect on firm value through intellectual capital disclosure (ICD)
- H9: Profitability (DAR) has an effect on firm value through intellectual capital disclosure (ICD)
- H10: Firm age (AGE) has an effect on firm value through intellectual capital disclosure (ICD)
- H11: Independent commissioners (IC) have an effect on firm value through intellectual capital disclosure (ICD)

METHOD

Research design
This study uses quantitative research methods by testing hypotheses. The data used is secondary data obtained through the website www.idx.co.id and the company's website by downloading the annual financial reports of financial sector companies listed on the Indonesia Stock Exchange. The source data obtained by the researchers came from the Website of the
Indonesian Stock Exchange through www.idx.co.id and www.yahoofinance.com. Meanwhile, data collection was done utilizing observation, documentation, and literature studies.

**Population and Sample**
Companies in the financial industry that are listed on the Indonesia Stock Exchange (IDX) in 2020–2021 are the study population, namely 105 companies. Purposive sampling, namely the selection of samples based on criteria determined by the researcher is the sampling technique used in this study. The criteria that must be met to be sampled are financial sector companies listed on the IDX, companies that have the complete data required in this study from 2020 to 2021, and companies that present their financial reports in rupiah units. Based on these criteria, the number of companies used is 83 companies with a research period of two years. Therefore, the number of samples used was 166 samples.

**Data Analysis Technique**
The data analysis technique in this study used panel data regression analysis with the Eviews version 12 application. Statistical tests were performed to establish the significance level of each independent variable's regression coefficient on the dependent variable. The step is as follows: (1) conduct descriptive statistical tests; (2) calculate the common effect model, fixed effect model, and random effect model for a panel of data; (3) conduct the Chow test, Hausman test, and Lagrange multiplier test to choose the panel data regression model; (4) The normalcy test, multicollinearity test, and heteroscedasticity test are used as they are components of the classical assumption test; (5) conduct Hypothesis test; (6) conduct Path Analysis, and (7) conduct the Sobel Test.

The following is the regression model in this study:

\[
Z = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + +\beta_5X_5 + \beta_6Y + \varepsilon \quad \ldots \quad (1)
\]

\[
Y = \alpha + \beta_7X_1 + \beta_8X_2 + \beta_9X_3 + \beta_{10}X_4 + \beta_{11}X_5 + \varepsilon \quad \ldots \quad (2)
\]

**RESULTS AND DISCUSSION**

**Descriptive statistical analysis.**

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Descriptive Statistical Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date : 05/27/23</td>
<td>Time : 00:23</td>
</tr>
<tr>
<td>Sample : 2020 2021</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>ROA</td>
</tr>
<tr>
<td>Mean</td>
<td>23.00769</td>
</tr>
<tr>
<td>Median</td>
<td>22.26972</td>
</tr>
<tr>
<td>Maximum</td>
<td>32.92521</td>
</tr>
<tr>
<td>Minimum</td>
<td>5.901977</td>
</tr>
<tr>
<td>Standard dev</td>
<td>7.697304</td>
</tr>
<tr>
<td>Observations</td>
<td>166</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023
The findings of the descriptive statistical tests performed on the 166 companies' data utilized in this study are shown in Table 1 for the period of 2020–2021.

a. The SIZE variable in this research data has a minimum value of 5.90 and a maximum value of 32.92 with an average of 23.01 at a standard deviation of 7.69. The average value (mean) is greater than the standard deviation, namely 23.01 > 7.69, meaning that the company sizes are well spread out. The highest company size occurs in the Pacific Strategic Financial Tbk company which is 34.14831 in 2021. This shows the highest size of the company's assets of Bank Central Asia Tbk is IDR 4.881 trillion. While the lowest company size is the Asuransi Jasa Tania company in 2020 which is 5.90. This shows the size of Asuransi Jasa Tania's assets is IDR 5.5 million because the company has sold its fixed assets.

b. The ROA variable in this research data has a minimum value of 0.082612 and a maximum value of 8.81 with an average of 0.85 at a standard deviation of 1.00. The average value (mean) is smaller than the standard deviation which is 0.85 > 1.00, meaning that the ROA values are spread less well. The highest ROA occurred in the BTN Tbk company in 2021 which shows that the company's return on assets is good. While the lowest ROA is in the BRI Tbk company in 2021 which shows that income profits are unstable, followed by a decrease in total asset turnover.

c. The DAR variable in this research data has a minimum value of 0.18 and a maximum value of 0.93 with an average of 0.34 at a standard deviation of 0.41. The average value (mean) is smaller than the standard deviation, namely 0.34 > 0.41, meaning that the DAR values are not well distributed. The highest DAR occurred in the Bank Permata Tbk company in 2020 which shows that the majority of the company's assets are funded by debt. While the lowest DAR is in the Bank Raya Indonesia Tbk company in 2021 which shows that the company's assets are majority funded by its capital. The lower the DAR ratio of a company, the better its financial performance. If it is higher, it is directly proportional to the risk that the company has.

d. The AGE variable in this research data has a minimum value of 3 and a maximum value of 124 with an average of 42.5 at a standard deviation of 18.5. The average value (mean) is greater than the standard deviation, namely 42.5 > 18.5, meaning that the AGE values are spread out quite well. The highest AGE occurred in the BTN Tbk company in 2021 which shows that the company has been established for 124 years. While the lowest AGE is in the BSI Tbk company in 2021 which shows the company has only been established for 3 years.

e. The IC variable in this research data has a minimum value of 0.25 and a maximum value of 0.75 with an average of 0.57 at a standard deviation of 0.104. The average value (mean) is greater than the standard deviation, namely 0.57 > 0.104, meaning that the IC values are spread out quite well.

f. The ICD variable in this research data has a minimum value of 0.313 and a maximum value of 0.51 with an average of 0.41 at a standard deviation of 0.05. The mean value (mean) is greater than the standard deviation, namely 0.51 > 0.41, meaning that the ICD values are spread out quite well. The highest ICD occurred in the company Adira Dinamika Multi Finance Tbk in 2021 which shows that 51% of companies meet the ICD category. While the lowest ICD is in the Asuransi Harta Aman Pratama Tbk company in 2021 which shows that 41% of companies meet the ICD category.
g. The PBV variable in this research data has a minimum value of 0.26 and a maximum value of 1.36 with an average of 0.85 at a standard deviation of 1.00. The average value (mean) is smaller than the standard deviation, namely $1.36 > 0.85$, meaning that the PBV values are spread out quite well. The highest PBV occurred in the BNI Tbk company in 2020 which shows that there is high market confidence in the company's prospects while the lowest PBV is in the Bank Danamon Tbk company in 2021 which shows low market confidence in the company's prospects. The higher the PBV ratio of a company means the higher the market confidence in the company's prospects. A higher PBV ratio of a company will result in an increase in company stock price.

Estimation Model Selection

The common effect model, fixed effect model, and random effect model are the three-panel data regression estimate models that may be utilized. Several tests, including the Chow test and the Hausman test, are needed in order to choose the best panel data regression estimate model.

Chow Test

<table>
<thead>
<tr>
<th>Regression Model</th>
<th>Probability Cross Section Chi-Square</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Regression 1</td>
<td>0.000</td>
<td>Fixed Effect Model</td>
</tr>
<tr>
<td>Model Regression 2</td>
<td>0.000</td>
<td>Fixed Effect Model</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

It is clear from the Chow test findings above that the likelihood of a chi-square cross-section is $0.000 < 0.05$. Therefore, the fixed effect is the model that was selected. To determine the precise model between the fixed effect and the random effect that will be employed in this study, the Hausman test must be performed if the chosen model has a fixed effect.

Hausman Test

<table>
<thead>
<tr>
<th>Regression Model</th>
<th>Probability Cross-Section Random</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Regression 1</td>
<td>1.3782</td>
<td>Random Effect Model</td>
</tr>
<tr>
<td>Model Regression 2</td>
<td>1.0019</td>
<td>Random Effect Model</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

Based on the results of the Hausman test above, shows that the chi-square cross-section is $1.3782 > 0.05$ and $1.0019 > 0.05$. Therefore, it can be concluded that the model used in this study uses a random effect model.
### Lagrange Multiplier Test

**Table 4. Lagrange Multiplier Test Result**

<table>
<thead>
<tr>
<th>Regression Model</th>
<th>Probability Breusch-Pegan</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Regression 1</td>
<td>0.000</td>
<td>Random Effect Model</td>
</tr>
<tr>
<td>Model Regression 2</td>
<td>0.000</td>
<td>Random Effect Model</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

The Lagrange Multiplier test calculation method used in this study is the Breusch-Pagan method. Based on the Breusch-Pagan probability value, it is seen that the value is <0.05, therefore, it is decided that the best model to use is the Random Effect Model.

### Hypothesis testing

**Direct Effect**

The results of the direct effect test from the Panel Data Regression Analysis on the structural model 1 are as follows:

**Table 5. Direct Effect**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>t-statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.401061</td>
<td>2.958592</td>
<td>9.214887</td>
<td>0.0000</td>
</tr>
<tr>
<td>SIZE → PBV</td>
<td>7.454957</td>
<td>1.427653</td>
<td>0.970398</td>
<td>0.0040</td>
</tr>
<tr>
<td>ROA → PBV</td>
<td>2.103732</td>
<td>7.634723</td>
<td>0.534194</td>
<td>0.0402</td>
</tr>
<tr>
<td>DAR → PBV</td>
<td>-4.093309</td>
<td>2.100711</td>
<td>-1.421455</td>
<td>0.2132</td>
</tr>
<tr>
<td>AGE → PBV</td>
<td>6.493852</td>
<td>7.879856</td>
<td>0.293396</td>
<td>0.0000</td>
</tr>
<tr>
<td>IC → PBV</td>
<td>9.461595</td>
<td>9.033324</td>
<td>0.753488</td>
<td>0.0515</td>
</tr>
<tr>
<td>ICD → PBV</td>
<td>0.122516</td>
<td>0.015273</td>
<td>7.830948</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

Based on Table 5 it can be explained:

1. The test results with the regression analysis of the panel data above show that the probability value in the SIZE variable (X1) of 0.0040 < 0.05. Therefore, H1 is accepted and it can be stated that SIZE influences PBV.
2. The test results with regression analysis of the panel data above show that the probability value in the variable ROA (X2) of 0.0402 < 0.05. Therefore, H2 is accepted, and it can be stated that ROA influences PBV.
3. The test results with the regression analysis of the panel data above show that the probability value in the variable DAR (X3) of 0.2132 > 0.05. Therefore, H3 is rejected, and it can be concluded that DAR does not influence PBV.
4. The test results with the regression analysis of the panel data above show that the probability value in the variable AGE (X4) of 0.0000 < 0.05. Therefore, H4 is accepted, and it can be concluded that AGE does not influence PBV.
5. The test results with the regression analysis of the panel data above show that the probability value on the IC variable (X5) of 0.0515 > 0.05. Therefore, H5 is rejected, and it can be concluded that IC does not influence PBV.

6. The test results with the regression analysis of the panel data above show that the probability value on the ICD variable (Y) of 0.0000 < 0.05, Therefore H6 is accepted, and it can be concluded that ICD influences PBV.

By testing the independent variable on the dependent variable, it can also be seen what percentage of the effect it has through the adjusted R-squared value. Following are the results of the adjusted r-squared test:

**Table 6. Adjust R-squared Result**

<table>
<thead>
<tr>
<th>Model Structure</th>
<th>Adjust R-squared</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE, ROA, DAR, AGE, IC, ICD → PBV</td>
<td>0.429152</td>
<td>0.509538</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

Based on the results of Table 6 above, it can be seen that the adjusted r-squared value is 0.429152 or 43% of the influence of the SIZE, ROA, DAR, AGE, IC, and ICD variables on PBV. In other words, 57% of the effect is determined by other variables not examined in this study.

**Indirect Effect**

The results of the indirect effect test from the Panel Data Regression Analysis on the 2nd structure model are as follows:

**Table 7. Indirect Effect Result**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>t-statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.418714</td>
<td>5.8419227</td>
<td>7.170345</td>
<td>0.0000</td>
</tr>
<tr>
<td>SIZE → ICD</td>
<td>7.163453</td>
<td>2.869358</td>
<td>2.506125</td>
<td>0.0242</td>
</tr>
<tr>
<td>ROA → ICD</td>
<td>1.971706</td>
<td>7.632355</td>
<td>2.581028</td>
<td>0.0209</td>
</tr>
<tr>
<td>DAR → ICD</td>
<td>-2.201744</td>
<td>1.997107</td>
<td>-1.103471</td>
<td>0.2872</td>
</tr>
<tr>
<td>AGE → ICD</td>
<td>3.052516</td>
<td>7.874260</td>
<td>3.871393</td>
<td>0.0015</td>
</tr>
<tr>
<td>IC → ICD</td>
<td>8.083509</td>
<td>4.552948</td>
<td>1.776274</td>
<td>0.0960</td>
</tr>
</tbody>
</table>

Sources: data processed, 2023

Based on Table 6 it can be explained:

1. The test results with the regression analysis of the panel data above show that the probability value in the SIZE variable (X1) of 0.0242 < 0.05 then it can be stated that SIZE influences ICD.

2. The test results with regression analysis of the panel data above show that the probability value in the variable ROA (X2) of 0.0209 < 0.05 then it can be stated that ROA influences ICD.

3. The test results with the regression analysis of the panel data above show that the probability value in the variable DAR (X3) of 0.2872 > 0.05 then it can be concluded that DAR does not influence ICD.
4. The test results with regression analysis of the panel data above show that the probability value in the variable AGE (X3) of 0.0015 < 0.05 then it can be concluded that AGE influences ICD.

5. The test results with the regression analysis of the panel data above show that the probability value on the IC variable (X5) of 0.0960 > 0.05 then it can be concluded that IC does not influence ICD.

To see the magnitude of the ratio of direct influence and indirect influence between variables, path analysis is then carried out. The following is a picture of the path analysis in this study:

Figure 4. Path Analysis

**Sobel Test Results**

The following is how it is calculated:

1. **The Effect of Firm Size on Firm Value through Intellectual Capital Disclosure**
   Calculating direct and indirect effects:
   Direct effects = \( p1 = 7.45 \)
   Indirect effects = \( p7 \times p6 = 7.16 \times 0.12 = 0.8592 \)
   Total effects = \( p1 + (p7 \times p6) = 7.45 + (7.16 \times 0.12) = 8.3092 \)

   Calculating with the Sobel test:
   \[
   S_{ab} = \sqrt{b^2S_a^2 + a^2S_b^2 + S_aS_b^2}
   \]
   \[
   S_{ab} = \sqrt{0.12^22.86^2 + 7.16^20.01^2 + 2.86^20.01^2}
   \]
   \[
   S_{ab} = \sqrt{0.00117786 + 0.00512656 + 0.00081769}
   \]
   \[
   S_{ab} = 0.844
   \]

   Calculating the statistical t value of the effect of intervening:
t = \frac{\text{Indirect Effects}}{\text{Standard error indirect effects}}

\begin{align*}
t &= \frac{0.8592}{0.844} \\
t &= 1.018
\end{align*}

Based on the calculations, a tcount of 1.018 was obtained. This number is less than t table 1.654, implying that intellectual capital disclosure is unable to mediate the influence of size on firm value. Therefore, \textbf{H7 is rejected.}

2. \textit{The Effect of Profitability on Firm Value through Intellectual Capital Disclosure}

Calculating direct and indirect effects:
Direct effects = p2 = 2.10
Indirect effects = p8 x p6 = 1.97 x 0.12 = 0.2364
Total effects = p2 + (p8 x p6) = 2.10 + (1.97 x 0.12) = 2.3364

Calculating with the Sobel test:
Sab = \sqrt{b^2Sb^2 + a^2Sb^2 + Sa^2Sb^2}
Sab = \sqrt{0.12^2 7.63^2 + 1.97^2 0.01^2 + 7.63^2 0.01^2}
Sab = \sqrt{0.8383 + 0.0038809 + 0.00582169}
Sab = 0.845

Calculating the statistical t value of the effect of intervening:

\begin{align*}
t &= \frac{\text{Indirect Effects}}{\text{Standard error indirect effects}} \\
t &= \frac{0.2364}{0.2797} \\
t &= 0.845
\end{align*}

Based on the calculations, a tcount of 0.2797 was obtained. This number is less than t table 1.654, implying that intellectual capital disclosure is unable to mediate the influence of leverage on firm value. Therefore, \textbf{H8 is rejected.}

3. \textit{The Effect of Leverage on Firm Value through Intellectual Capital Disclosure}

Calculating direct and indirect effects:
Direct effects = p3 = -4.09
Indirect effects = p9 x p6 = -2.20 x 0.12 = -0.264
Total effects = p3 + (p9 x p6) = -4.09 + (-2.20 x 0.12) = -4.354

Calculating with the Sobel test:
Sab = \sqrt{b^2Sb^2 + a^2Sb^2 + Sa^2Sb^2}
Sab = \sqrt{0.12^2 1.99^2 + -2.20^2 0.01^2 + 1.99^2 0.01^2}
Sab = \sqrt{0.05702544 + 0.000484 + 0.00039601}
Sab = 0.2406

Calculating the statistical t value of the effect of intervening:
4. The Effect of Age on Firm Value through Intellectual Capital Disclosure

Calculating direct and indirect effects:
Direct effects = p4 = 6.49
Indirect effects = p10 x p6 = 3.05 x 0.12 = 0.366
Total effects = p10 + (p4 x p6) = 6.49 + (3.05 x 0.12) = 6.856

Calculating with the Sobel test:
Sab = \sqrt{b^2Sa^2 + a^2Sb^2 + Sa^2Sb^2}
Sab = \sqrt{0.12^27.87^2 + 2.20^20.01^2 + 7.87^20.01^2}
Sab = \sqrt{0.89189136 + 0.000484 + 0.00619369}
Sab = 0.948

Calculating the statistical t value of the effect of intervening:

\[
t = \frac{\text{Indirect Effects}}{\text{Standar error indirect effects}}\]
\[
t = \frac{0.366}{0.948}\]
\[
t = 0.386\]

Based on the calculations, a t count of 0.386 was obtained. This number is less than t table 1.654, implying that intellectual capital disclosure is unable to mediate the influence of leverage on firm value. Therefore, H9 is rejected.

5. The Effect of Independent Commissioner on Firm Value through Intellectual Capital Disclosure

Calculating direct and indirect effects:
Direct effects = p11 = 9.46
Indirect effects = p5 x p6 = 8.08 x 0.12 = 0.9696
Total effects = p11 + (p5 x p6) = 2.10 + (8.08 x 0.12) = 10.4296

Calculating with the Sobel test:
Sab = \sqrt{b^2Sa^2 + a^2Sb^2 + Sa^2Sb^2}
Sab = \sqrt{0.12^24.55^2 + 8.08^20.01^2 + 4.55^20.01^2}
Sab = \sqrt{0.298116 + 0.00652864 + 0.00207025}
Sab = 0.554
Calculating the statistical t value of the effect of intervening:

\[
  t = \frac{\text{Indirect Effects}}{\text{Standard error indirect effects}}
\]

\[
  t = \frac{0.9696}{0.554}
\]

\[
  t = 1.750
\]

Based on the calculations, a tcount of 1.750 was obtained. This number is more than ttable 1.654, implying that intellectual capital disclosure is able to mediate the influence of independent commissioners on firm value. Therefore, **H11 is accepted.**

**Discussion**

1. **Effect of Firm Size on Firm Value**
   The findings of the above-mentioned testing of the seventh hypothesis demonstrate that business size affects firm value. The total assets possessed are an indication of a firm's size which is reflected in the size of the company. The worth of the business increases with the size of the business. Large growth rates in a firm will provide a good signal to investors, piquing their interest in the organization. Research by Aggarwal & Padhan (Aggarwal & Padhan, 2017), Dang et al. (Dang et al., 2021), and Nandita & Kusumawati (Asna Nandita & Kusumawati, 2018) is consistent with the findings of this study.

2. **Effect of Profitability on Firm Value**
   The results of the hypothesis test are considered valid based on the findings of the partial test. The findings show that profitability affects firm value. Profitability according to Kasmir (Kasmir, 2019) is a ratio for assessing the profit generated by a business by using its resources and capabilities, including income from sales operations and investment income. A high level of profitability can add value to the company. This study measures profitability using ROA which is viewed from the capital side and is quite attractive to investors. Since investors will only reap benefits if the company's profits are large and the capital expenditure is the same. The findings of this study are in line with research conducted by Sucuahi & Cambarihan (Sucuahi & Cambarihan, 2016), Dang, et al (Dang et al., 2021), and Aulia, Mustikawati & Hariyanto (Nur Aulia et al., 2020).

3. **Effect of Leverage on Firm Value**
   Leverage does not affect the value of the company. Leverage is a tool to measure how much company-to-creditors factor in financing company assets. A high level of company leverage means it is highly dependent on outside loans to finance its assets. Whereas companies that have a low level of leverage mean that they finance their assets more with capital alone. However, this is not one of the aspects that investors pay attention to while investing in the company. Since investors hope that they invest to get a return in this case it is likely that investors only see the returns they get without looking at the small size of the debt. The results of this study are in line with research conducted by Nandita & Kusumawati (A. Nandita & Kusumawati, 2018) and Dewi & Sulistiyo (Dewi & Sulistiyo, 2020).

4. **Effect of Firm Age on Firm Value**
   The evidence supports the fourth hypothesis which states that company age affects firm value. The findings of this analysis confirm those of Samisi and Ardiana's (Samisi &
Ardiana, 2013) study which found that company age had a favorable impact on firm value. This indicates that investors are more likely to place their trust in long-established businesses because they are thought to be able to generate higher profits and maintain their existence through the creation of initiatives that give them a competitive edge over less established businesses. Investors will respond favorably to these circumstances, increasing the company's worth in the process. In contrast, Hariyanto and Juniarti's (Hariyanto & Juniarti, 2014) research findings indicating firm age has a negative impact on firm value because aging businesses' productivity declines as a result of firm value. This data conflicts with the findings of this study.

5. Effect of Independent Commissioner on Firm Value
The results of hypothesis testing shows that the independent commissioner variable has a significant effect on firm value so it can be concluded that H5 is accepted. This is of course due to the presence of the board of commissioners independent level of supervision and control of the company will be seen to be better for company compliance with applicable laws and regulations, ensuring business strategy effective, good management of identified risks, and potential added value to the company. This will attract investors to invest shares in the company so that the value of the company will also increase. These results are in line with the corporate governance guidelines stating that independent commissioners are an important component to provide more value for the company (Aryani et al., 2018). This study is in line with research (Astrinika & Sulistyanto, 2018) which shows that the board's independent commissioners influence the value of the company.

6. Effect of Intellectual Capital Disclosure on Firm Value
The sixth hypothesis findings indicate that intellectual capital disclosure affects corporate value. In accordance with Ulum (Ulum et al., 2016), a business's worth is determined by its performance which is represented in share prices that are created by supply and demand on the capital market and reflect how the public perceives the success of the firm. It is established that the market places a greater value on a firm that is able to manage intangible assets in the form of intellectual capital that is contained inside it. Intellectual capital disclosure has a favorable impact on corporate value. Intellectual capital has been successful in adding value and giving businesses a competitive edge which in turn affects how much a company is valued on the market. This is supported by an earlier study (Tyso, 2016) which found that intellectual capital disclosure increases corporate value.

7. Effect of Firm Size on Firm Value through Intellectual Capital Disclosure
According to the H7 Sobel test results, it seems that firm value through the disclosure of intellectual capital is unaffected by the size of the company. This demonstrates that the value of the firm cannot necessarily grow with the disclosure of intellectual property. This is because intellectual capital does not typically have a direct impact on a company's worth. There are several reasons why disclosure of intellectual capital has no impact, namely, companies do not realize that the biggest asset to show the value of their company is by disclosing intellectual capital or companies are aware of the importance of intellectual capital but few companies are able to maximize their intellectual capital, companies reduce the extent of disclosure in an effort not to give a signal to competitors to maintain the competitive advantage that it already has. This is when large companies have employees with good innovation skills, competing
companies will be interested in recruiting these employees in return for higher salaries (Nugroho, 2012).

8. **Effect of Profitability on Firm Value through Intellectual Capital Disclosure**
   On H8 test findings, the Sobel test's findings demonstrate that corporate worth as determined by the disclosure of intellectual capital is unaffected by profitability. This demonstrates that the influence link between profitability and company value cannot be mediated by intellectual capital disclosure. A measure of a company's profitability is its capacity to create profit from both sales operations and investment income using its resources and skills. A high level of profitability does not diminish the company's worth. Profitability is assessed in terms of tangible assets that may be quantified in nominal numbers since ROA is used to determine profitability in this study. On the other hand, Intellectual capital is an intangible asset that has no bearing on stock value.

9. **Effect of Leverage on Firm Value through Intellectual Capital Disclosure**
   The H9 test shows that leverage does not affect the business value as measured by Intellectual Capital Disclosure. This shows that intellectual capital disclosure cannot operate as a mediator in the effect relationship between leverage and business value. The amount of leverage DAR is unrelated to the value of the company. This is whether or not the corporation reveals its intellectual property. The signaling hypothesis contends that companies communicate personal information in an effort to increase their value by disclosing their intellectual property. The study's findings go opposed to this theory.

10. **Effect of Firm Age on Firm Value through Intellectual Capital Disclosure**
    On H10 test findings, the Sobel test's findings demonstrate that firm age has no impact on firm worth as determined by Intellectual Capital Disclosure. This demonstrates that the impact link between firm age and company value cannot be mediated by intellectual capital disclosure. This is so that investors may accurately value the firm and lessen their uncertainty about prospects by having access to useful information about the company's intellectual capital (Nikolaj Bukh et al., 2005). This is in order to prevent intellectual capital disclosure from having an impact on the company's age and worth which are determined by the share price. There are several reasons that disclosure of intellectual capital does not affect the relationship between firm age and firm value, namely: First, age is not a reflection of experience and understanding in disclosing IC so the longer the age of a company does not mean the better the level of understanding and experience related to intellectual capital it has. This shows that disclosure of intellectual capital cannot be optimal. Second, the reputation-driven spirit, namely the motivation to boost company value and become a well-known company in stock market trading even though the company is new to the capital market scene (Ulum et al., 2016).

11. **Effect of Independent Commissioner on Firm Value through Intellectual Capital Disclosure**
    The H11 findings of the Sobel test demonstrate that Intellectual Capital Disclosure by the independent commissioner has an impact on business value. This demonstrates that the influence link between independent commissioners and business value can be mediated by Intellectual Capital Disclosure. This is due to an effort to boost a company's worth, an independent commissioner will work to raise the openness of corporate information to financial report users.
Many studies have been conducted by previous researchers to look at the effect of company size, profitability, leverage, firm age, and independent commissioners on firm value. However, research is rarely conducted that makes disclosure of intellectual models a mediating variable. From the results of this study, it was found that disclosing intellectual capital is not considered important in Indonesia because there are no permanent rules governing the importance of intellectual capital to be recognized. Even though it can provide various benefits for both internal and external parties of the company, in practice disclosing intellectual capital is constrained by several obstacles which makes it difficult to do. Castilla-Polo and Gallardo-Vazques (Castilla-Polo & Gallardo-Vázquez, 2016) found that some of the things that are the direct reasons companies refuse to disclose intellectual capital are complexity, identification, and measurement.

Based on PSAK 19, not all intellectual capital can be disclosed in the company's financial statements. Anggraini (Anggraini, 2013) conducted a mapping of intellectual capital disclosure in banking companies listed on the Indonesia Stock Exchange and found that there was no systematic and consistent framework for disclosing intellectual capital but certain specific patterns could be found. Disclosure of intellectual capital is mostly done in the company's annual report in the form of non-numeric and informative narratives. Disclosure of intellectual capital is a descriptive of the events that have been experienced by the company.

CONCLUSION
This research examines issues affecting the disclosure of intellectual property of financial industry companies listed on the IDX for the period 2020–2021. After the discussion in the research above, it is known that firm size, profitability, firm age, independent commissioners, and disclosure of intellectual capital have an effect on firm value of 43% and leverage has no effect on firm value. While the relationship through the disclosure of intellectual capital shows only independent commissioners affect the value of the company. From the results of descriptive statistics, it can be seen that the highest Intellectual Capital Disclosure (ICD) value is 0.65 or 65% fulfilled index of 83 indicators of the intellectual capital disclosure index. This shows the lack of awareness of companies in Indonesia about the importance of intellectual capital in creating and maintaining competitive advantage and shareholder value. Even though the results of a global survey revealed that intellectual capital is the type of information most widely considered by investors. this was not disclosed by management which causes the "information gap" (Bozzolan et al in (Silitonga & Wulandari, 2018)). The limitations of this study are the study period is only two years, the determinant factors used do not affect intellectual capital disclosure, and there are no standard provisions specifically on how to measure the intellectual capital disclosure index which can be used as a reference. Therefore, the determination of the index and indicators in the same category can be different for each researcher. For future researchers, it is expected to increase the research period and add other factors that influence the disclosure of intellectual capital.

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http://dx.doi.org/10.22441/jurnal_mix.2022.v13i2.001


