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How the Ownership Structure and Firm Size Effect on Intellectual Capital Disclosure? A Case Study Before and During COVID-19

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Abstract

This study aims to identify, analyze and obtain empirical evidence regarding the effect of ownership structure consisting of managerial ownership, institutional ownership, and foreign ownership as well as firm size on intellectual capital disclosure before and during COVID-19. In addition, this study also tests whether there are differences in intellectual capital disclosures made before and during COVID-19. The sample in this study were banking sub-sector companies listed on the Indonesia Stock Exchange in 2018-2021 which were divided into two groups, namely before COVID-19 and during COVID-19. This study adopts the ICD In model from Ulum (2015) which has been modified by adding several items that are in accordance with applicable regulations in Indonesia. The data analysis technique used was multiple linear regression and paired sample t-tests for different tests using Evies 12 student version software. The results of the study show that prior to COVID-19 managerial ownership, institutional ownership, and foreign ownership had no effect on intellectual capital disclosure. Firm size had a positive effect on intellectual capital disclosure before COVID-19. During COVID-19, managerial ownership had a negative effect, institutional ownership had a negative effect and foreign ownership had no effect on intellectual capital disclosure. Firm size has a positive effect on intellectual capital disclosure during COVID-19. This study also found that there was no difference in intellectual capital disclosure before and during COVID-19.

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1 Introduction

The banking sub-sector is one sector that utilizes the potential of its human resources rather than its physical assets (Fitriasari & Sari, 2019). In addition, the banking industry also has very strict regulations so it tends to present more information to the public (Putri & Herawaty, 2019). For companies where most of their assets are in intangible assets such as the banking sub-sector, the absence of information regarding intellectual capital has the potential to be misleading (Putra et al., 2021). Disclosure of bank intellectual capital is also an important element in its annual report, meshing is not presented explicitly in the annual report (Tulung et al., 2018). Based on research conducted by Tulung et al. (2018), the level of disclosure of intellectual capital in 2015 reached a percentage of 52% which was higher than the results of previous research in 2010, which was 34%. This increase shows that the banking sub-sector has realized the importance of disclosing intellectual capital.

The COVID-19 pandemic that hit the whole world including Indonesia has caused economic uncertainty. Trading on the Indonesia Stock Exchange has also been affected by the COVID-19 pandemic. Figure 1.1 shows a graph of the quarterly Sectoral Stock Price Index for companies listed on the Indonesia Stock Exchange for 2019-2020 which can be accessed via www.idx.co.id. Based on the graph, it shows that in the first quarter of 2020 (Q1 2020) when the COVID-19 case was first discovered in Indonesia, the stock price index for all sectors experienced a decline. The sector with the highest Price Index is the financial sector, while the sector with the lowest Price Index is various industries. In the following quarters, the stock price index for the financial sector continued to increase, even though it was still negative. This shows that trade performance for the financial sector due to COVID-19 has started to improve.

The performance of the financial sector, especially banking, can also be illustrated in Figure 1.2. The graph shows that the total banking assets, loans and Third-Party Funds (DPK) in the first quarter of 2020 experienced positive growth even though there was a tendency to slow down compared to the previous period. This shows that the performance of the banking sub-sector in the first quarter of 2020 was good. This means that the banking sub-sector has been able to develop strategies to create a competitive advantage, one of which can be through voluntary disclosure of information such as intellectual capital disclosure (Kim et al., 2016; Sugosha & Artini, 2020; Andini & Sukartha, 2020).

The resource dependence theory was put forward by Pfeffer and Salancik in 1978. The resource dependence theory starts from the premise that organizations are closely related to their environment and depend on external resources to operate and survive. The theory of resource dependency can explain how an organization manages dependence on external resources and its efforts to create a competitive advantage. Companies will have a greater competitive advantage than other companies if they have their own characteristics. In this study, the company's competitive advantage can be reflected in the disclosure of information regarding intellectual capital that is carried out. According to the view of resource dependence theory, disclosure is made to reduce information asymmetry, supporting the creation of intangible resources from an internal and external perspective (Salvi et al., 2020).

Apart from the theory of resource dependence, the importance of disclosing information regarding intellectual capital can also be explained through agency theory. The agency theory put forward by Jensen & Meckling (1976), explains the agency relationship between principal and agent. The relationship constitutes a contract when the agent is assigned by the principal to perform a service on the principal's behalf. Research by Ulfah et al. (2021), stated that the composition of company ownership can trigger agency problems due to information asymmetry between principals and agents. Agency theory is able to explain the ways that can be done to reduce the occurrence of information asymmetry, namely by making voluntary disclosures such as intellectual capital disclosure.

Intellectual capital disclosure is influenced by the composition of ownership in the company. The ownership structure according to Fahdiansyah et al. (2018), is the distribution of share ownership in a company. This ownership structure itself is divided into several types, namely institutional ownership, company management ownership (managerial), and foreign ownership. Managerial ownership is the proportion of shares owned by executive management in the company (Putra et al., 2021). Institutional ownership is ownership of company shares owned by institutions or institutions such as insurance companies, banks, investment companies, and other institutional owners (Mardian & Nurcholisah, 2020). Foreign Ownership is the number of shares owned by foreigners or foreign parties (Putra et al., 2021).

Previous studies regarding the relationship between company ownership structure and intellectual capital disclosure obtained various results. Research by Alfraih (2018), explains the positive direct relationship between ownership structure and intellectual capital disclosure. However, the opposite results were found by research by Ulfah et al. (2021), which states that managerial ownership has a negative effect on intellectual capital disclosure. Research on the relationship between institutional ownership and intellectual capital disclosure was conducted by Margie (2018); Ulfah et al. (2021), obtained the result that institutional ownership has a negative effect on intellectual capital disclosure. Research by Ulfah et al. (2021), obtained the result that foreign ownership has a negative effect on intellectual capital disclosure. Meanwhile, Serly's (2018), research explains that the variable foreign ownership has no significant relationship to voluntary disclosures by companies.

In addition to variations in company ownership structure, intellectual capital disclosure is also influenced by firm size. Firm size is a size, scale or variable that describes the size of a company based on several conditions, such as total assets, market value, shares, total sales, total income, total capital and others (Putra et al., 2021). Based on the agency theory by Jensen & Meckling (1976), large companies tend to bear higher agency costs than smaller companies. To reduce agency costs, companies need to disclose more information, including voluntary information such as intellectual capital disclosure (Anna et al., 2018). Research by Anna et al. (2018); Margie (2018), state that firm size has a positive and significant effect on disclosure of company intellectual capital. However, different results were found in Nurdin et al.'s (2019), study. who obtained the results of firm size having a negative effect on intellectual capital disclosure.

This study refers to research conducted by Ulfah et al. (2021), who examine the composition of ownership of intellectual capital disclosure in Indonesia. The indicators used to measure intellectual capital disclosure refer to research by Khan et al. (2013), which consists of 29 items including internal capital, external capital and human capital. This study attempts to re-analyze the ownership structure of intellectual capital disclosure using the Intellectual Capital Disclosure Index developed by Ulum (2015). There are 36 disclosure items in the Intellectual Capital Disclosure Index which include human capital, structural capital and relational capital. The Intellectual Capital Disclosure Index uses a four-way numerical coding system developed by Petty & Guthrie (2000). This method does not only identify the extent of intellectual capital disclosure from the aspect of quantity but also the quality of disclosure. In addition, this study also adds a variable firm size which is also suspected of influencing intellectual capital disclosure. As a result of the COVID-19 phenomenon which attacked the whole world including Indonesia, it caused the company's performance to be affected including the banking sub-sector. So in this study then attempts to make a comparison regarding the effect of ownership structure and firm size on intellectual capital disclosure in the banking sub-sector before COVID-19 and during COVID-19.

Literature review and hypothesis development

Research by Ulfah et al. (2021), analyzed the ownership composition of intellectual capital disclosure in 323 public companies listed on the Indonesia Stock Exchange (IDX). The results of the study show that ownership composition has a negative effect on intellectual capital disclosure by companies. This means that if the percentage of managerial ownership in a company is high, the disclosure of intellectual capital tends to be lower. The theory of resource dependence (resource dependence theory) is able to explain how an organization manages dependence on external resources and its efforts to create a competitive advantage. According to the view of resource dependence theory, disclosure is made in order to reduce information asymmetry (Salvi et al., 2020). Furthermore, agency theory explains that information asymmetry may occur between principals and agents due to different interests. Therefore, if high managerial ownership in the company results in management disclosing little information because the company does not have an intense relationship with external parties. The results of a consistent study regarding the negative effect of managerial ownership on intellectual capital disclosure were also put forward by Rahayuni et al. (2018); Wijayani et al. (2019); Putri & Herawaty (2019); Erjon & Rashid (2021). The phenomenon of the COVID-19 pandemic as a global disaster that affects the world economic order, of course, also influences company performance. The company's different conditions due to COVID-19 certainly make companies also choose different strategies in creating business continuity, including regarding disclosures made.

H_{1a}: Managerial ownership had a negative effect on intellectual capital disclosure before COVID-19
H_{1b}: Managerial ownership has a negative effect on intellectual capital disclosure during COVID-19

Putri & Herawaty's (2019), research shows the results that institutional ownership has a positive effect on disclosure of intellectual capital. This research was conducted in banking companies in the 2014-2018 period. The theory of resource dependency is able to explain how an organization manages dependence on external resources and its efforts to create a competitive advantage. This competitive advantage can be created through the disclosure of intellectual capital. Furthermore, according to agency theory, institutional shareholders play an important role in reducing agency conflicts (agency problems) that have the potential to arise between principals and agents. The presence of these institutional shareholders in a company is considered to be able to control every strategic decision and action taken by company managers effectively. Institutional shareholders as principals who delegate their authority to manage the company to agents use annual reports to monitor management performance so that institutional investors need relevant and complex information for decision-making (Putri & Herawaty, 2019). Furthermore, Ulfah et al. (2021), confirm the position and agree on the experience of institutional investors and oversight capabilities regarding corporate management fees that contribute to governance and intellectual capital disclosure. Similar research results were also found by Putra et al. (2021); Rahayuni et al. (2018).

H_{2a}: institutional ownership had a positive effect on intellectual capital disclosure before COVID-19
H_{2b}: institutional ownership has a positive effect on intellectual capital disclosure during COVID-19

Putra et al.'s (2021), research, states that foreign ownership has a positive effect on intellectual capital disclosure. Higher foreign ownership causes a greater level of disclosure of intellectual capital by companies. Based on resource dependency theory and agency theory, foreign investors tend to have higher information asymmetry, which is caused by language barriers, local cultural knowledge, and geographical differences. In addition, foreign-based companies have qualified employee skills, modern technology, and extensive information networks, making it possible to make broader and better disclosures. According to Ulfah et al. (2021), foreign investors pay attention to management evaluation judgments and maintain high standards of information disclosure due to more regional and international market experience. Therefore, it is expected that foreign investors will demand more voluntary disclosures, including intellectual capital disclosures. Research that supports that foreign ownership has a positive effect on intellectual capital disclosure, namely research by Putra et al. (2021); Farida (2019); Tangke (2020).

H_{3a}: Foreign ownership had a positive effect on intellectual capital disclosure before COVID-19
H_{3b}: Foreign ownership has a positive effect on intellectual capital disclosure during COVID-19

Research by Margie (2018), shows that firm size has a significant and positive influence on the disclosure of intellectual capital. The scale of firm size can affect the extent of information disclosure in financial reports (Wedayanti & Wirajaya, 2018). Agency theory also explains that the agency costs that must be borne by large companies are far greater than those of smaller companies. Efforts that can be made to reduce these costs are by disclosing more information, including voluntary information such as intellectual capital disclosure. With intellectual capital disclosure, shareholders and other stakeholders will know more about the company's actual activities, potential, and performance. This will reduce information asymmetry and agency costs so that larger companies will be encouraged to make intellectual capital disclosure more broadly (Anna et al., 2018). Consistent results were also found in the studies of Mukhibad & Setyawati (2019); Suyono (2019).

H_{4a}: Firm size had a positive effect on intellectual capital disclosure before COVID-19
H_{4b}: Firm size has a positive effect on intellectual capital disclosure during COVID-19

According to data from the Central Bureau of National Statistics, since the COVID-19 case was first confirmed in Indonesia in March 2020, Indonesia's economic growth has fallen to a level of 2.97%. In other words, there was a decline in the national economic growth of 2.05% when compared to 2019 which recorded economic growth of 5.02%. In line with the decline in national economic growth which triggered an economic recession in 2020, various business sectors in Indonesia began to experience economic turmoil (Nawangsari et al., 2021). In the banking sub-sector, there were also differences in performance before and during COVID-19 as presented in the research by Soko & Harjanti (2022); Sullivan & Widoatmodjo (2021). Of course, this crisis condition also influences the company's strategy, so voluntary disclosure is a consequence as well as one of the company's competitive strategies in maintaining its share price (Suhendar & Hakim, 2021). According to the theory of resource dependency, a company's strategy in overcoming crises by disclosing intellectual capital information can also create a competitive advantage. Agency theory is able to explain the ways that can be done to reduce the occurrence of agency problems due to information asymmetry. This method is by making disclosures which include voluntary disclosures such as intellectual capital disclosure. Companies also tend to increase their level of disclosure during times of crisis (Nawangsari et al., 2021). This is because companies want to capture the momentum of the crisis to increase legitimacy and influence public perceptions.

H_5: There are differences in intellectual capital disclosure before and during the COVID-19 pandemic

2 Materials and Methods

This research was conducted on banking sub-sector companies listed on the Indonesia Stock Exchange in 2018-2021 which provided annual report data via the website www.idx.co.id or the website of each company. This year's range was then divided into two groups, namely before the COVID-19 pandemic, namely 2018 and 2019, and during the COVID-19 pandemic, namely 2020 and 2021. The banking sub-sector was chosen because based on the Sectoral Stock Price Index it shows that the financial sector after the quarter first 2020, when the first confirmed case of COVID-19 in Indonesia was constantly increasing. This constant increase then raises the question of whether there were differences in the disclosure of intellectual capital before and during COVID-19 by banking sub-sector companies which were allegedly influenced by the ownership structure and firm size.

The scope of research in this study is intellectual capital disclosure in the banking sub-sector which was listed on the Indonesia Stock Exchange before COVID-19, namely in 2018-2019, and during COVID-19, namely in 2020-2021. The factors that influence intellectual capital disclosure are the ownership structure and firm size. The population in this study were all banking sub-sector companies listed on the Indonesia Stock Exchange in 2018-2021 which were divided into two groups, namely before COVID-19 in 2018 and 2019 and during COVID-19, namely in 2020 and 2021. The sampling method used in this research is non-probability sampling with a purposive sampling technique. The criteria considered in determining the sample in this study are banking sub-sector companies whose annual reports contain all data related to intellectual capital disclosure, ownership structure, and total assets during 2018-2021.

The data analysis technique used in this study is multiple linear regression and the Paired Sample t Test using the Eviews 12 for student application. Regression analysis is used to analyze the effect of ownership structure consisting of managerial ownership, institutional ownership, and foreign ownership as well as firm size on intellectual capital disclosure contained in Hypothesis 1, Hypothesis 2, Hypothesis 3, and Hypothesis 4. Meanwhile, the Paired Sample t Test is used to analyze the differences in intellectual capital disclosure before and during COVID-19 as stated in Hypothesis 5.

3 Results and Discussions

Multiple linear regression test results

Multiple linear regression analysis was used to determine the effect of the independent variables, namely managerial ownership (X1), institutional ownership (X2), foreign ownership (X3), and firm size (X4) on the dependent variable, namely intellectual capital disclosure (Y). The calculation of multiple linear regression coefficients was carried out by means of regression analysis through the Eviews 12 for student software, the results of which are presented in Tables 1 and 2 below:

Table 1
Multiple linear regression test results before COVID-19

Variable	Coefficient	Probability
C	-0,178	0,054
Managerial ownership	-0,246	0,096
Institutional Ownership	-0,0004	0,981
Foreign Ownership	-0,012	0,413
Firm size	0,019	0,000

Secondary Data, 2022

Effect of managerial ownership on intellectual capital disclosure (H_{1a})

The managerial ownership variable has a negative regression coefficient of 0.246 with a significance level of 0.096. sig. the value which is greater than the significant level α = 0.05 indicates that H1a is rejected. This means that managerial ownership has no effect on intellectual capital disclosure in banking sub-sector companies before COVID-19. The results of this study have not been able to confirm the research by Ulfah et al. (2021), who obtained the result that the higher the percentage of share ownership by management, the lower the level of disclosure of intellectual capital. The results of this study also have not been able to confirm the theory of resource dependence which states that organizations will manage dependence on external resources and strive to create competitive advantage. According to the view of resource dependence theory, disclosure is made in order to reduce information asymmetry (Salvi et al., 2020). High managerial ownership in the company results in management tending to disclose little information because the company does not have an intense relationship with external parties.

The results of the hypothesis test show that managerial ownership has no effect on intellectual capital disclosure before COVID-19, meaning that companies with large or small managerial ownership do not affect the disclosure of intellectual capital. These results are in line with the research of Suyono (2019); (Putra et al., 2021), which state that companies with large or small managerial ownership both have the same motivation to disclose intellectual capital. Although companies with large managerial ownership do not necessarily disclose complete intellectual capital. Companies that have a managerial ownership percentage of 0%, such as PT Bank MNC Internasional Tbk and PT Bank Permata Tbk in 2018 disclosed quite high intellectual capital, which has a score of 30 out of a cumulative total score of 67. In contrast, PT Bank Jago Tbk, which was previously named PT Bank Artos Indonesia Tbk in 2018 has a managerial ownership percentage of 24% and the lowest intellectual capital disclosure, namely a score of 20 out of a total cumulative score of 67.

Effect of institutional ownership on intellectual capital disclosure (H_{2a})

The institutional ownership variable has a negative regression coefficient of 0.0004 with a significance level of 0.986. sig. the value which is greater than the significant level $\alpha = 0.05$ indicates that H2a is rejected. This means that institutional ownership has no effect on the intellectual capital disclosure of banking sub-sector companies before COVID-19. The results of this study have not been able to confirm the results of previous studies by Putri & Herawaty (2019); Putra et al. (2021); Rahayuni et al. (2018). The results of this study also have not been able to confirm the resource dependency theory which explains how organizations manage dependence on external resources and their efforts to create competitive advantage. This competitive advantage can be created through the disclosure of intellectual capital. Furthermore, according to agency theory, institutional shareholders play an important role in reducing agency conflicts (agency problems) that have the potential to arise between principals and agents. The presence of these institutional shareholders in a company is considered to be able to control every strategic decision and action taken by company managers effectively. However, the results of this study support the results of research by Serly (2018); Suyono (2019); Ulfah et al. (2021), who also obtained institutional ownership results that had no effect on intellectual capital disclosure. Companies that have a percentage of 0% institutional ownership, such as PT Bank Mestika Dharma Tbk in 2018 and 2019 have an intellectual capital disclosure score of 26 out of a total cumulative score of 67. In contrast, companies that have a high percentage of institutional ownership, namely PT Bank Neo Commerce Tbk in 2018 whose percentage of institutional ownership is 95.2% have an intellectual capital disclosure score of 24 out of a cumulative total score of 67.

Effect of foreign ownership on intellectual capital disclosure (H_{3a})

The foreign ownership variable has a negative regression coefficient of 0.012 with a significance level of 0.413. sig. the value which is greater than the significant level $\alpha = 0.05$ indicates that H3a is rejected. This means that foreign ownership has no effect on the intellectual capital disclosure of banking sub-sector companies prior to COVID-19. The results of this study have not succeeded in confirming research from Putri & Herawaty (2019), which shows the results that institutional ownership has a positive effect on the disclosure of intellectual capital. The results of this study also have not been able to confirm the theory of resource dependence and agency theory. Resource dependency theory explains how organizations manage dependence on external resources and their efforts to create competitive advantage through the disclosure of intellectual capital. Furthermore, according to agency theory, institutional shareholders play an important role in reducing agency conflicts (agency problems) that have the potential to arise between principals and agents. The presence of these institutional shareholders in a company is considered to be able to control every strategic decision and action taken by company managers effectively. However, the results of this study are in line with the results of Suhendar & Hakim's (2021), study which also obtained the results that institutional ownership has a negative effect on voluntary disclosure. The reason for the negative influence of institutional ownership on voluntary disclosure is the lack of institutional investor power in terms of company control. In addition, institutional investors also relatively prioritize aspects of the profits they get, without the need to feel bothered by interfering with the company's internal conditions. As a result, higher institutional ownership actually makes companies less willing to make voluntary disclosures (An et al., 2015; Abeysekera, 2011; Siregar & Utama, 2008; Sensoy, 2017).

Effect of firm size on intellectual capital disclosure (H_{4a})

The firm size variable has a positive regression coefficient of 0.019 with a significance level of 0.000. sig. the value which is smaller than the significant level α = 0.05 indicates that H4a is accepted. This means that firm size had an effect on the intellectual capital disclosure of banking sub-sector companies before COVID-19. Firm size is a picture of the size of a company. This study uses the natural logarithm of total assets (Ln total assets) to measure the size of the company. Based on the results of the hypothesis testing, the firm size variable before COVID-19, namely in 2018 and 2019, had a positive regression coefficient of 0.019 with a significance level of 0.00. sig. the value which is smaller than the significant level α = 0.05 means that hypothesis H4a which reads "firm size has a positive effect on intellectual capital disclosure before COVID-19" is accepted. This means that firm size had a positive effect on intellectual capital disclosure in banking sub-sector companies before COVID-19. The larger the size of a company, the more information about intellectual capital is disclosed (Abhayawansa & Guthrie, 2016; Muttakin et al., 2015; Beattie & Thomson, 2007).

The results of this study confirm the agency theory. Furthermore, agency theory explains that the agency costs that must be borne by large companies are far greater than those of smaller companies. Efforts that can be made to reduce these costs are to disclose more information, including voluntary information such as intellectual capital disclosure. With intellectual capital disclosure, shareholders and other stakeholders will know more about the company's actual activities, potential and performance. This will reduce information asymmetry and agency costs so that larger companies will be encouraged to make intellectual capital disclosure more broadly (Anna et al., 2018). This research is in line with the results of research conducted by Margie (2018); Mukhibad & Setyawati (2019); Suyono (2019), which show that firm size has a significant and positive influence on intellectual capital disclosure.

Table 2
Multiple linear regression test results for COVID-19

Variable	Coefficient	Probability
C	0,123	0,054
Managerial ownership	-0,237	0,024
Institutional Ownership	-0,035	0,022
Foreign Ownership	-0,0004	0,997
Firm size	0,010	0,000

Secondary Data, 2022

Effect of managerial ownership on intellectual capital disclosure (H_{1b})

The managerial ownership variable has a negative regression coefficient of 0.237 with a significance level of 0.024. sig. the value which is smaller than the significant level α = 0.05 indicating that managerial ownership has a negative effect on intellectual capital disclosure in banking sub-sector companies during COVID-19, so H1b is accepted. The results of this study were able to confirm previous research by Ulfah et al. (2021), whose results show that the composition of managerial ownership has a negative effect on intellectual capital disclosure carried out by companies. The results of this study are also able to confirm the resource dependence theory which explains how organizations manage dependence on external resources and their efforts to create competitive advantage. According to the view of resource dependence theory, disclosure is made in order to reduce information asymmetry (Salvi et al., 2020). The phenomenon of the COVID-19 pandemic as a global disaster that affects the world economic order, of course, also influences the company's strategy in creating business continuity, including regarding disclosures made. The high percentage of managerial ownership in the company causes management to disclose little information because the company does not have an intense relationship with external parties. The results of previous studies examining the negative effect of managerial ownership on intellectual capital disclosure were also put forward by Rahayuni et al. (2018); Wijayani et al. (2019); Putri & Herawaty (2019); Erjon & Rashid (2021).

Effect of institutional ownership on intellectual capital disclosure (H_{2b})

The institutional ownership variable has a negative regression coefficient of 0.035 with a significance level of 0.022. sig. the value which is smaller than the significant level α = 0.05 indicating that institutional ownership has a negative effect on intellectual capital disclosure in banking sub-sector companies during COVID-19, so H2b is rejected. The results of this study have not succeeded in confirming research from Putri & Herawaty (2019), which shows the results that institutional ownership has a positive effect on the disclosure of intellectual capital. The results of this study also have not been able to confirm the theory of resource dependence and agency theory. Resource dependency theory explains how organizations manage dependence on external resources and their efforts to create competitive advantage through the disclosure of intellectual capital. Furthermore, according to agency theory, institutional shareholders play an important role in reducing agency conflicts (agency problems) that have the potential to arise between principals and agents. The presence of these institutional shareholders in a company is considered to be able to control every strategic decision and action taken by company managers effectively. However, the results of this study are in line with the results of Suhendar & Hakim's (2021), study which also obtained the results that institutional ownership has a negative effect on voluntary disclosure. The reason for the negative influence of institutional ownership on voluntary disclosure is the lack of institutional investor power in terms of company control. In addition, institutional investors also relatively prioritize aspects of the profits they get, without the need to feel bothered by interfering with the company's internal conditions. As a result, higher institutional ownership actually makes companies less willing to make voluntary disclosures.

Effect of foreign ownership on intellectual capital disclosure (H_{3b})

The foreign ownership variable has a negative regression coefficient of 0.0004 with a significance level of 0.997. sig. the value which is greater than the significant level α = 0.05 indicates that H3b is rejected. This means that foreign ownership has no effect on intellectual capital disclosure in banking sub-sector companies during COVID-19. The results of this study have not succeeded in confirming the research by Putra et al. (2021), which states that foreign ownership has a positive effect on intellectual capital disclosure. Higher foreign ownership causes a greater level of disclosure of intellectual capital by companies. The results of this study also have not been able to confirm the theory of resource dependence and agency theory. The resource dependency theory explains that companies disclose information in order to create an organizational competitive advantage. According to agency theory, foreign investors tend to have higher information asymmetry, which is caused by language barriers, local cultural knowledge, and geographical differences. According to Ulfah et al. (2021), foreign investors pay attention to management evaluation judgments and maintain high standards of information disclosure due to more regional and international market experience. Therefore, it is expected that foreign investors will demand more voluntary disclosures, including intellectual capital disclosures. However, the results of this study are in line with Serly's (2018), research which states that foreign ownership does not have a significant positive effect on company voluntary disclosures.

Effect of firm size on intellectual capital disclosure (H_{4b})

The firm size variable has a positive regression coefficient of 0.010 with a significance level of 0.00. sig. the value which is smaller than the significant level α = 0.05 indicates that H4b is accepted. This means that firm size has an effect on intellectual capital disclosure in banking sub-sector companies during COVID-19. The results of this study are also able to confirm Margie's (2018), research which shows that firm size has a significant and positive influence on the disclosure of intellectual capital.

Agency theory (agency theory) also explains that doing more information disclosure can reduce agency costs (agency cost). Disclosure of such information can also be in the form of disclosure of information that is voluntary, such as intellectual capital disclosure. The COVID-19 conditions that occurred in 2020 and 2021 also certainly influenced the company's strategy, so voluntary disclosure became a consequence as well as one of the company's competitive strategies in maintaining its share price (Suhendar & Hakim, 2021). Companies also tend to increase the

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level of disclosure during times of crisis, because companies want to capture the momentum of the crisis to increase legitimacy and influence public perceptions (Nawangsari et al., 2021).

Determination coefficient test results

The coefficient of determination test shows how much the independent variables used in the study can explain the dependent variable. The value of the coefficient of determination is between 0 (zero) and 1 (one). The value of R2 which is getting closer to 1 (one) means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. The R2 value in this study is presented in Tables 3 and 4 below.

Table 3
Results of the determination coefficient test before COVID-19

R-squared	0.558

Secondary Data, 2022

Based on Table 3, the R2 value is 0.558, which means that 55.8% of the variation in changes in intellectual capital disclosure before Covid-19 can be explained by the variables of managerial ownership, institutional ownership, foreign ownership, and firm size. While the remaining 44.2% is influenced by other variables outside the model.

Table 4
Test results for the coefficient of determination during COVID-19

R-squared	0.518

Secondary Data, 2022

Based on Table 4, the R^2 value is 0.518, which means that 51.8% of the variation in changes in intellectual capital disclosure during COVID-19 can be explained by the variables of managerial ownership, institutional ownership, foreign ownership, and firm size. While the remaining 48.2% is influenced by other variables outside the model.

Model feasibility test results (F test)

The model feasibility test aims to determine whether all the independent variables included in the model have a joint effect on the dependent variable. If the significance value of the F test ≤0.05, the regression model used is considered feasible to be tested. The results of the model feasibility test in this study are presented in Tables 5 and 6 below.

Table 5
Model feasibility test results before COVID-19

F-statistic	20.935
Prob(F-statistic)	0.000

Secondary Data, 2022

Based on Table 5, it shows that the F statistic is 20.935 with a p-value of 0.000 which is less than 0.05, meaning that the model in this study is feasible to test and it can be concluded that there is an influence between the independent variables, namely managerial ownership (X1), ownership institutional (X2), foreign ownership (X3) and firm size (X4) to the dependent variable namely intellectual capital disclosure (Y) simultaneously before COVID-19.

Table 6
Model feasibility test results during COVID-19

F-statistic	16.397
Prob(F-statistic)	0.000

Secondary Data, 2022

The results of the F test showed that the significance value of the F test is 0.000 which is less than 0.05, which means that the model in this study is feasible to test and it can be concluded that there is an effect between the independent variables, namely managerial ownership (X1), institutional ownership (X2), ownership foreign exchange (X3) and firm size (X4) on the dependent variable, namely intellectual capital disclosure (Y) simultaneously during COVID-19

Paired sample t-test

The Paired Sample t-Test is used to test two paired samples whether they have significantly different averages or not.

Table 7
Paired sample t-test

Probability t-test	0,541

Secondary Data, 2022

Differences in intellectual capital disclosure before and during COVID-19

Based on Table 7, it shows that the probability value on the t-test is 0.541 which is greater than the value $\alpha = 0.05$. So it can be concluded that there is no significant difference in the intellectual capital disclosure of banking sub-sector companies listed on the Indonesia Stock Exchange before and during the COVID-19 pandemic. The COVID-19 pandemic that hit the whole world including Indonesia has caused economic uncertainty. Of course, this crisis condition also influences the company's strategy, so voluntary disclosure is a consequence as well as one of the company's competitive strategies in maintaining its share price (Suhendar & Hakim, 2021). Investor sentiment towards banking companies included in the financial sector on the Indonesia Stock Exchange at the time of COVID-19 was quite good as seen from the Sectoral Stock Price Index for the financial sector which has constantly increased since the first quarter of 2020, although it is still negative. In addition, the total banking assets, loans, and Third-Party Funds (DPK) in the first quarter of 2020 experienced positive growth even though there was a tendency to slow down compared to the previous period. This shows that the performance of the banking sub-sector in the first quarter of 2020 was good (Putra et al., 2019; Li et al., 2012; Salvi et al., 2020).

The results of this study have not succeeded in confirming the theory of resource dependence. Based on the theory of resource dependency, the company's strategy in overcoming crises by disclosing intellectual capital information can also create a competitive advantage. This study also has not been able to confirm previous research by Nawangsari et al. (2021), which states that companies also tend to increase the level of disclosure during times of crisis. This is because companies want to capture the momentum of the crisis to increase legitimacy and influence public perceptions. This means that the banking sub-sector has been able to develop strategies to create competitive advantage, one of which can be through voluntary disclosure of information such as intellectual capital disclosure, not only during times of crisis.

4 Conclusion

The effect of ownership structure and firm size on intellectual capital disclosure before and when COVID-19 obtained results that have theoretical implications in a voluntary disclosure. The results of the study show that before COVID-19, namely in 2018 and 2019, only firm size had a significant effect on intellectual capital disclosure. Whereas during COVID-19, namely in 2020 and 2021 managerial ownership, institutional ownership of firm size has a significant effect on intellectual capital disclosure. The results of the study also show that there are differences in intellectual capital disclosure before and during COVID-19.

The results of this study have implications for the theory of resource dependence and agency theory. The theory of resource dependency explains how an organization manages dependence on external resources and its efforts to create competitive advantage through voluntary disclosure, one of which is the disclosure of intellectual capital. Agency theory explains the potential for information asymmetry between principals and agents according to agency theory as a result of differences in interests. Conflicts of interest due to information asymmetry can be reduced through voluntary disclosure of information such as intellectual capital disclosure.

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The test results on the effect of ownership structure and firm size on intellectual capital disclosure before and during COVID-19 obtained the result that before COVID-19, namely in 2018 and 2019, only firm size had a significant effect on intellectual capital disclosure. Whereas during COVID-19, namely in 2020 and 2021 managerial ownership, institutional ownership of firm size has a significant effect on intellectual capital disclosure. The results of the study also show that there is no difference in intellectual capital disclosure before and during COVID-19. The results of this study have practical implications for interested parties such as users of financial information and investors. The results of this study can be used as input for users of information such as investors in making investment decisions.

Conflict of interest statement
The authors declared that they have no competing interests.

Statement of authorship
The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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