“Does capital structure moderate the impact of the investment opportunity set and institutional ownership on firm value?”

AUTHORS	Bambang Sudiyatno Sri Sudarsi Witjaksono Eko Hartoto Ika Rosyada Fitriati

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Bambang Sudiyatno (Indonesia), **Sri Sudarsi** (Indonesia),
Witjaksono Eko Hartoto (Indonesia), **Ika Rosyada Fitriati** (Indonesia)

DOES CAPITAL STRUCTURE MODERATE THE IMPACT OF THE INVESTMENT OPPORTUNITY SET AND INSTITUTIONAL OWNERSHIP ON FIRM VALUE?

Abstract

The existence of a research gap compared to previous studies related to the effect of the relationship between institutional ownership and investment opportunity set on firm value in Indonesia is interesting to review. This study aims to reveal the relationship of these influences by adding capital structure as a moderating variable that serves to strengthen it against firm value. The research variables are the ratio of market value to book value of assets, institutional ownership, debt-to-equity ratio and free cash flow. The research timeframe is 2019–2021, using data taken from companies in the manufacturing sector in the Indonesian Capital Market (IDX). Data sampling was carried out using the purposive sampling method. Data analysis to determine the relationship of these effects and hypothesis testing were performed using multiple regression. The empirical research findings indicate that the investment opportunity set has a positive effect on increasing firm value, while capital structure has a negative effect on decreasing it. Institutional ownership and free cash flow do not determine firm value, so free cash flow does not serve as a control variable. The main finding of this study is revealing that capital structure plays a role in strengthening the effect of the relationship between investment opportunity sets on firm value.

Keywords capital, firm value, cash flows, ownership, investment, Indonesia

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Bambang Sudiyatno, Associate Professor, Dr (Finance and Banking), Department of Management, University of Stikubank Semarang, Indonesia. (Corresponding author)

Sri Sudarsi, Master, Senior Lecturer, Department of Management, University of Stikubank Semarang, Indonesia.

Witjaksono Eko Hartoto, Master, Senior Lecturer, Faculty of Economics, Department of Management, University of Semarang, Indonesia.

Ika Rosyada Fitriati, Lecturer, Department of Management, University of Stikubank Semarang, Indonesia.

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INTRODUCTION

The discussion of firm value has attracted many researchers, academics and practitioners and has become an interesting topic to study to date, because firm value is seen by investors as the achievement of company goals. Investors define the firm value as the entire assets held by a company during operations, specifically by examining the degree of stability and long-term growth of the stock price of the firm. Firm value also reflects the level of company wealth; a healthy company gives a signal to investors to work together to invest in building a bigger and growing company, so that the firm's value increases. It is important for investors to increase the value of the company, because this state shows their well-being.

The determinants of firm value can come from internal and external factors, management understands this, and factors that can be controlled by management are internal factors. Afridi et al. (2022) stated that firm owners, management skills, and the potency of company capital are internal factors that affect firm value. Company owners

play an important role in making strategic policies related to the future development of the company, where these policies are used as a basis for determining company policies and operational activities in order to achieve company goals (Frederica, 2019; Afridi et al., 2022).

Management plays an important role in achieving goals, because management is given the mandate and responsibility by the owner. Related to these duties and responsibilities, management must make an operational plan, and carry it out by establishing the company's operational policies. As stated by Reyna et al. (2012), in increasing firm value, management must plan operations and implement these plans in order to achieve company goals. Important policies that are the pillars of the company's operations include funding policies, investment policies and asset management policies. The funding policy relates to determining where the funds for the company's operations will be financed. Investment policy is related to financial decisions about what asset purchases should be made, for that management must be able to see profitable investment opportunities for the company. While the asset management policy is the process of allocating resources owned by the company to achieve goals.

On the other hand, financial support is also needed, companies need the support of adequate capital strength to be able to execute the operational policies they make (Kumar et al., 2020). The funding policy largely determines a company's financial strength base, because this policy impacts the composition and capital structure of the company. Therefore, finance is a very important factor for the success of a company in achieving its goals, investment opportunities can only be executed if the company has an adequate composition and capital structure. Due to the use of debt being able to lower agency costs, which has an effect on raising the firm value, the capital structure is a crucial component that can decide the firm value (Jensen & Meckling, 1976).

Several studies related to the capital structure of a company's value have been carried out previously with different findings, and these findings are used as the basis for conducting this research. Based on the findings of empirical research, the problem in this study is that there is still a research gap regarding the issue of the composition of the use of debt in influencing firm value.

1. LITERATURE REVIEW

A company's price to book value, which is established by the stock price at which it can be sold in accordance with the terms of the agreement with the buyer, is represented by the market price of its stocks. Firm value also reflects the level of prosperity of investors as shareholders and owners of the company. In the financial literature, shareholder prosperity is a general goal of a company, which is entrusted to the manager as the mandate holder of the owner. Due to this, researchers from all over the world continue to be interested in a firm's worth, since the findings of earlier studies continue to raise questions about the variables that affect firm value.

Research related to firm value has been carried out previously, including by Aggarwal and Padhan (2017), Nguyen and Bui (2020), and Nguyen et al. (2021), although the results are still different. The results of this study have provided a lot of important information about the effectiveness, and reflect a company's growth in the long term (Shah & Khalidi, 2020; Nguyen et al., 2021). Therefore, it is important to understand what factors determine the firm value and to what extent these factors are related. Capital structure, profitability, investment opportunity set, company size, company ownership and liquidity are internal fundamental factors that receive a lot of attention related to their relationship with firm value. According to Bahraini et al. (2021), capital structure positively affects corporate value. While Nguyen et al. (2021) discovered findings showing capital structure has no effect on business value, Sudiyatno et al. (2020) discovered empirical evidence to the contrary.

As described in agency theory that business activities are not always managed directly by the entity owner, the entity owner may appoint a manager as an agent to run a company's operations (Jensen &

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Meckling, 1976). The authority granted by the entity's owner also includes the right to adopt decisions that are consistent with those interests. One of the policies managers decide on is investment policy, and firm value is the impact of the implementation of investment policies set by management. This statement is reinforced by the opinion of Fama (1978), which states that firm value is solely determined by investment decisions. Therefore, investment decisions are important, because with these investment decisions, investment activities can be carried out, and through investment activities the company's goals can be achieved.

Myers (1977) originally developed the investment opportunity set in connection to the goals an organization must meet. According to Myers (1977), the IOS offers a more comprehensive picture of how the firm value, which serves as the company's primary purpose, would be affected by future expenditures. According to Gaver and Gaver (1993), the IOS depicts a company's worth, the extent of which depends on the scope of the company's anticipated future spending, which has been defined by management. As a result, the investment opportunity set may also provide data about the PBV as the company's principal purpose, based on the costs the company would incur in the future.

In corporate finance, the investment opportunity set plays an important role in relation to achieving company goals (Adam & Goyal, 2003). According to Kallapur and Trombley (1999), the calculation must utilize a proxy to identify the IOS because it is not a latent phenomenon that cannot be observed directly. Afridi et al. (2022), Ilmiyono et al., (2021), and Frederica (2019) all conducted prior studies on the IOS and discovered empirical evidence that the investment opportunity set positively affects firm value. According to Smith and Watts (1992) and Skinner (1993), businesses with high levels of corporate value, as measured by IOS, have a propensity to employ less debt in their capital structures. High IOS companies prefer to steer clear of releasing public debt using accounting-based arrangements. This outcome supports the agency theory's claim that a company with a high IOS avoid high-cost debt.

Shares owned by institutions, including insurance companies, banks, investment firms, mutual funds, securities firms, pension funds, non-bank financial institutions, and so on, are referred to as institutionally owned. Large institutional ownership can direct management actions to avoid management's opportunistic actions towards manipulating firm performance. This condition can reduce or minimize agency conflicts, as stated by Jensen and Meckling (1976). Institutional investors are able to effectively supervise managers in making decisions. Institutional investors are less likely to assume that managers are manipulating earnings, their presence can lower agency costs, which can raise firm value.

Murni (2015) discovered empirical evidence to support the notion that institutional ownership increases company value by looking at the historical link between institutional ownership and business value. However, no impact of institutional ownership on business value was discovered in the studies by Purba and Africa (2019), Setyabudi (2021), and Akmalia and Aliyah (2022). On the other hand, Kuwaiti academics Omran and Tahat (2020) found that institutional ownership had a beneficial effect on the utility of accounting information. These results support the strength of the upward trend in share prices.

Managers make an important contribution to the performance and credibility of a company by making investment decisions, financing and managing assets. Investment decisions and asset management determine the diversity of financial requirements for such financing. Therefore, the decision to determine the optimal source of funds and financing structure is important to optimize the firm value. The funding policy determines a company's capital structure. As explained by Oino and Ukaegbu (2015), capital structure is a financial picture derived from company activities that use debt and equity in optimizing firm value. The source of debt funds will increase a company's fixed costs, which result in an increase in company risk, but the most important objective of this policy is to determine the composition of the company's funding in order to maximize shareholder wealth or company value, so this is an important feature in the company (Moghadam et al., 2020). Therefore, understanding the theory and concept of capital structure helps managers determine the optimal capital structure that a company needs to increase firm value.

In their earlier studies, Aggarwal and Padhan (2017), Ha and Minh (2020), Desta and Mulyana (2021), Tampubolon et al. (2021), Jang and Utomo (2021), and Bahraini et al. (2021) all demonstrated a positive association between capital structure and business value. But the findings of studies by Sudiyatno, et al. (2020) and Setyabudi (2021) revealed empirical evidence of the adverse impact of DER on PBV. While no correlation between DER and PBV was identified in the studies by Purba and Africa (2019), Nguyen et al. (2021), Afridi et al. (2022), and Pustika et al. (2022).

Free cash flow, which is conceptually described as "the cash flow that remains after deducting the cash needed to invest in a project with a positive net present value," was initially established by Jensen (1986). Until now, there is no single definition of FCF (Rostamlu et al., 2016). Nahr and Nemati (2015) define free cash flow as a measure of performance measurement and reporting of the economic value of business units, because this is related to a company's ability to generate cash flow. Free cash flow has important implications for shareholder investors in assessing a company's financial health (Rostamlu et al., 2016). The distribution of FCF is one of the most significant agency challenges in the business, according to Bhundia (2012) and Jensen (1986). According to Jensen (1986), when an organization generates a large enough free cash flow, the conflict of interest regarding the dividend payout policy is very acute.

Free cash flow can be utilized for a variety of discretionary purposes, including paying down debt, making payments to shareholders, making acquisitions and growth-oriented capital expenditures. High free cash flow can be a favorable information signal for investors because it denotes that the company is performing well. Investors prefer companies with strong free cash flow because they believe these businesses will be more successful (Yousef & Ojah, 2022). Companies with strong free cash flow are more appealing to investors who are looking for profitable possibilities to put their extra money into the business (Ajmal et al., 2022). This situation can raise a firm's value shares, which increases as stock prices do.

Capital structure can be measured using the proportion of own capital or total assets. According to the POT, there is no optimal capital structure, because companies have an order of preference in fulfilling funding sources (Myers, 1977). According to this theory, the use of debt has an impact on reducing the value of a company. In contrast to the TOT, according to this theory debt plays a major role in building a capital structure to maximize firm value (Wiagustini et al., 2017). Thus, this theory implies that there is an optimal point that shows the optimal capital structure, and at this point the maximum use of debt so that additional debt will reduce the firm value.

2. AIM OF THE STUDY AND HYPOTHESES DEVELOPMENT

This study intends to investigate the function of DER in enhancing the impact of institutional ownership (IO) linkages and the IOS on PBV. In testing the effect of this relationship, FCF is placed as a control variable, and DER as a moderating variable. Based on the principles of agency theory and the findings of previous studies, the research hypotheses were developed to test this effect:

H_1: *Investment opportunities set enhances the value of a firm.*

H_2: *Institutional ownership has an impact on increasing firm value.*

H_3: *Free cash flow increases the value of a company.*

H_4: *Debt-to-equity ratio has an effect on the value of a firm.*

H_5: *DER ratio moderates IOS on firm value.*

H_6: *Debt-to-equity ratio acts as a mediator of institutional ownership of firm value.*

3. METODHOLOGY

Yearly financial reports of manufacturing companies are where secondary data are derived. From these financial reports, information is ob-

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Table 1. Final research sample

Source: Authors' elaboration.

No.	Criteria	Total
1	In 2019–2021, the number of manufacturing businesses listed in Indonesia	624
2	Manufacturing companies whose financial statements are incomplete in 2019, 2020 and 2021	(385)
3	The number of samples that meet the requirements	239

tained about a company's investment opportunities, institutional ownership, capital structure, cash flow, book value and stock market prices. Manufacturing businesses that are currently listed and operational in Indonesia for the years 2019 through 2021 make up the population of this study. Purposive sampling was utilized during the sampling.

The variables used in this study are firm values as the dependent variable. Meanwhile, investment opportunity set (IOS) and institutional ownership (IO) as independent variables, capital structure as a moderating variable, and free cash flow (FCF) as a control variable. Firm value is proxied by PBV which is based on market value. Likewise, according to Gul and Tsui (1997), IOS is a variable that cannot be observed, so a proxy is needed to be analyzed, although there is no reliable agreement for a growth proxy. Therefore, the measurement of IOS uses the form of financial ratios on the basis of market value and book value.

Domestic and international ownership of institutional shares are the two categories (Abedin et al., 2022). Institutional ownership is calculated as the percentage of ownership held by institutional investors. The calculation is done by dividing the number of shares owned by the number of shares outstanding. Meanwhile, FCF is placed as a control variable, which is measured by calculating the difference between operating cash flow and investment in operating capital. It is estimated that companies that have a large FCF will have higher opportunities to invest in the future by generating returns that are higher than the cost of capital, or generating a positive net present value.

Capital structure (CS), which gauges how well a company uses debt, is calculated as the ratio between the total book value of debt and equity (Nguyen et al., 2021). The debt-to-equity ratio is used as a moderating variable in this analysis with the potential to strengthen or diminish the association between institutional ownership and IOS and business value. Meanwhile, free cash flow (FCF) is placed as a control variable that functions to control causal relationships to obtain a complete and better empirical model.

Data analysis uses multiple regression with the following formula:

$$FV = a \cdot b_1 IOS + b_2 IO + b_3 CS + \\ + b_4 FCF + b_5 M_1 + b_6 M_2 + e, \quad (1)$$

where FV = Firm Value, IOS = Investment Opportunity Set, CS = Capital Structure, FCF = Free Cash Flow, M_1 = Moderation 1 $(IOS \cdot CS)$, M_2 = Moderation 2 $(IO \cdot CS)$, e = error term.

4. RESULTS

The characteristics of the data used are shown in Table 2. Research data uses a ratio scale so that the mean and standard deviation are always used.

Table 2. Descriptive statistics

Source: Calculation results with SPSS.

	N	Min	Max	Mean	Std. Deviation
FV	239	0.07	7.91	1.6266	1.63475
IOS	239	0.38	11.67	1.4368	1.35207
IO	239	0.00	0.99	0.6341	0.25274
CS	239	0.07	23.92	1.1327	1.88490
LnFCF	239	0.05	204.36	21.2950	25.71872
M1	239	0.03	24.39	1.4166	2.19120
M2	239	0.00	78.00	2.8269	10.93494
Valid N (listwise)	239				

As presented in Table 2, firm value describes the proportion of stock market prices with the lowest PBV of 0.07 and the highest of 7.91 with an average of 1.63 and a standard deviation of 1.63. Investment Opportunity Set (IOS) is at a low of 0.38 and a high of 11.67 with a mean of 1.44.

Institutional ownership (IO) has a mean of 0.63 and a standard deviation of 0.52 and varies from 0.00 to 0.99. Debt-to-equity ratio has a range of 0.07 to 23.92 with a mean of 1.13 and a standard deviation of 1.88. The free cash flow ranges are so wide, the smallest free cash flow is 0.05 and the largest is 204.36, with a mean of 21.29. While the minimum and maximum values for moderation 1 (M1 = IOS*CS) are 0.03 and 24.39, respectively, with an average of 1.42. Moderation 2 (M2 = IO*CS) has an average of 2.83, with a low of 0.00 and a high of 79.00.

The corrected R-square for the test on the coefficient of determination model is 0.71, or 71%, and the significance value for F (sig-F) is 0.000. As a result, the regression model utilized is good enough to match the data, with 71% of the variables being used having a legitimate influence on company value. Table 3 displays the results of regression calculations and t-tests to determine the impact and conclusions of the hypotheses.

Table 3. Regression results

Source: Calculation results with SPSS.

Model	Unstandardized Coeficient	t	Sig
	Beta		
(Constant)	0.431	2.396	0.017
IOS	0.679	10.335	0.000
IO	0.033	0.142	0.887
CS	–0.586	–5.466	0.000
FCF	0.001	0.398	0.691
M1(IOS*CS)	0.062	6.290	0.000
M2(IO*CS)	–0.003	–0.633	0.527

Note: Dependent Variable: FV (PBV).

Based on Table 3, it is clear that the IOS has a positive impact on firm value because its beta coefficient value is 0.679 and its t-value is 10.335 with a sig of 0.000 so that hypothesis 1 (H_1) is accepted. The beta coefficient of institutional ownership is 0.033 and t = 0.142 with a significance of 0.887, this means that institutional ownership has not effect, so hypothesis 2 (H_2) is rejected. Hypothesis 3 (H_3) is accepted because DER has a negative coefficient, specifically –0.586, and a value of t = –5.466 with a sig-t 0.000. A positive coefficient of 0.001 and a sig of 0.691 characterize the value of t FCF, which is 0.398. As a result, although FCF has a positive impact on company value, hypothesis 4 (H_4) is rejected because the effect is statistically negligible. Hypothesis 5 (H_5) is accepted because the M_1 beta coefficient, which serves as a symbol for the interaction of the IOS with the capital structure, is 0.602 with a value of t = 6.290 and a sig of 0.000. The interaction between institutional ownership and DER has a negative but not statistically significant impact, as evidenced by the fact that M_2, a symbol for it, has a beta coefficient of –0.003, a value of t = –0.633, and a sig of 0.527 so hypothesis 6 (H_6) is rejected.

5. DISCUSION

Table 3 shows how firm value is influenced by investment opportunities, institutional participation in company ownership, capital structure used, net cash flow generated by a company and the interaction between IOS and capital structure and institutional ownership with capital structure. Company value is directly correlated with the IOS; the more the investment potential, the greater the firm value. Because the IOS is strongly tied to a company's aims, which include enhancing the firm value, it follows that it is in line with those of the firm.

The results of this study are in line with Gaver and Gaver's (1993) assertion that investment opportunity set is a firm's value whose size depends on the size of the company's future expenditures, which have been determined by management. The results of this study provide empirical evidence that the market responded positively to IOS. The findings of this study corroborate those of Frederica (2019), Ilmiyono et al. (2021), and Afridi et al. (2022), who also discovered a beneficial effect. Institutional ownership has a little impact on a firm's value. These empirical results are at odds with claims made by Thanatawee (2014) that institutional investors with high ownership have strong incentives to watch a company, but institutional investors with small ownership have weak incentives. This statement implies that the large ownership of institutional investors has a strong influence to monitor a company, because they can easily move their investment to other investments if the firm's performance is poor. This condition can spur the company's management to improve its performance by increasing the firm

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value, but this does not happen. The findings of this study are also consistent with those of Purba and Africa (2019), Setyabudi (2021), and Akmalia and Aliyah (2022). This, however, conflicts with findings from studies by Murni (2015) and Ilmiyono et al. (2021) that revealed a favorable effect and a negative effect.

Firm value is negatively impacted by capital structure; this finding is in accordance with the pecking order policy (POT) concept as presented by Myers (1984). The finding that DER has a negative impact on firm value shows that the market reacts unfavorably to enterprises using debt; investors are turned off by corporations with high debt levels. Due to the increased risk associated with using debt as a source of funding, a firm's performance must be strong in order to maximize the high rate of return from the cost of capital. If this happens, the use of debt increases return on equity (ROE) and earnings per share (EPS), but if the opposite occurs, the use of debt decreases ROE and EPS. An increase in ROE can be a positive information signal that the market responds well to, and investors are interested in investing, the impact of which is to increase the stock market price.

The findings of this study are consistent with those of Dang et al. (2019), Sudiyatno et al. (2020), and Setyabudi (2021). This, however, conflicts with studies by González and Yun (2013), Aggarwal and Padhan (2017), Hirdinis (2019), and Desta and Mulyana (2021) that discovered a beneficial effect. Purba and Africa (2019), Nguyen et al. (2021), Afridi et al. (2022), and Pustika et al. (2022) found no evidence of a relationship between capital structure and firm value. This, however, conflicts with studies by González and Yun (2013), Aggarwal and Padhan (2017), Hirdinis (2019), Desta and Mulyana (2021), and Bahraini et al. (2021) that discovered a beneficial effect.

Free cash flow is not significant, this finding is not in accordance with the signaling theory concept, because the market does not respond to FCF information. As a result, investors are not interested in investing. Free cash flow does not act as a control variable in influencing firm value. The findings of this study are consistent with those of Yousef and Ojah (2022), which was conducted in Iraq and discovered that FCF has no impact on business value when considering the effectiveness of investment choices. However, Abughniem et al. (2020) discovered that FCF statistically has a negative influence on firm performance and market value per share, indicating that it also has an effect on boosting firm value.

The role of capital structure in strengthening the influence of investment opportunity sets on PBV is the key finding of this study. This means that debt ownership in companies with high investment opportunities has an impact on increasing PBV. The extent of investment opportunities for companies requires adequate sources of financing, one of which is debt. With these investment opportunities the company has the ability to benefit from growth prospects. Despite the fact that the findings of the analysis indicate a negative influence of DER on company value, the usage of debt will increase firm value when it is accompanied with investment opportunities from growth prospects. Capital structure strengthens the relationship between the influencing of the IOS in increasing business value. Another important result is that capital structure does not moderate the effect of institutional ownership on company value, the interaction between institutional ownership and DER has no effect on PBV.

CONCLUSION

This study aims to verify and assess the impact of investment opportunity set and institutional ownership on firm value, using organizational structure as a moderator and free cash flow as a control variable. The results of the discussion concluded that the IOS has a good influence on PBV. Value is positively and significantly impacted by the wide range of investment opportunities. While institutional ownership has no impact on firm value, the availability of a wide range of investment opportunities can offer useful information that can raise PBV. Institutional ownership cannot have an impact on PBV. This condition indicates that the role of institutional ownership is weak so it does not have an impact on PBV.

According to the empirical findings of this study, using debt decreases PBV. This condition shows that the capital market is not in normal conditions as a result of the influence of the global economic crisis and the COVID-19 pandemic. However, the use of debt provides profitable benefits for a company, which strengthens the relationship between IOS and the increase in PBV. The interaction between DER and IOS has an impact on increasing PBV, so DER acts as a moderator. As for institutional ownership, DER does not act as a moderator. This is indicated by the absence of the interaction effect of DER and institutional ownership on increasing firm value. Finally, FCF has no impact on firm value, so FCF does not act as a control variable on firm value. Investors did not react; this condition shows that a company's FCF information was not responded to by capital market players so that it did not have an impact on increasing firm value.

Although this study makes a contribution regarding the role of capital structure as a moderator variable that can add references to the financial literature, it still has limitations that need to be corrected in future research. First, the study period was only three years, and a lot of data was lost, namely from the initial data of 309 N samples that met the requirements according to needs, only 239 N samples remained. The large amount of missing data means that the data does not fully describe the empirical condition of manufacturing companies in Indonesia. Second, the object of the study is limited to manufacturing companies so that it cannot provide an overall picture of the companies listed in Indonesia (IDX). Future research is expected to increase the research period to 6 years so that more N sample data can be collected, thereby providing more real information related to manufacturing companies in Indonesia. Future studies can also add company size as a control variable in order to obtain a complete and better empirical model.

AUTHOR CONTRIBUTIONS

Conceptualization: Bambang Sudiyatno, Sri Sudarsi, Ika Rosyada Fitriati.
Data curation: Sri Sudarsi, Witjaksono Eko Hartoto.
Formal analysis: Bambang Sudiyatno.
Investigation: Bambangn Sudiyatno, Witjaksono Eko Hartoto.
Methodology: Bambang Sudiyatno.
Resources: Witjaksono Eko Hartoto
Software: Ika Rosyada Fitriati.
Validation: Bambang Sudiyatno, Sri Sudarsi, Ika Rosyada Fitriati.
Visualization: Witjaksono Eko Hartoto.
Writing – original draft: Bambang Sudiyatno.
Writing – review & editing: Sri Sudarsi, Ika Rosyada Fitriati, Witjaksono Eko Hartoto.

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