

## The Impact of Social Media on Corporate Values: Is Information Asymmetry matter?



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**ABSTRACT:** When deciding whether to invest in a business, investors evaluate the firm's value. The greater an investor's reliance, the more valuable the company. Among the factors that affect the value of a company is social media usage. This study seeks to empirically examine the impact of social media usage on corporate values as mediated by information asymmetry. This study utilizes secondary data. This study employed both purposeful sampling with several specified criteria and proportional stratified random sampling. Multiple linear regressions, path analysis, and the Sobel test were utilized in this study. According to the findings of this study, social media enhance corporate value. If social media does not affect information asymmetry, then information asymmetry can reduce firm value; therefore, the conclusion of this study would be that information asymmetry cannot be a mediator between social media and firm value because social media in Indonesia is still used to convey information to customers and investors are more interested in a company's website than its social media presence.

**KEYWORDS:** Firm values, Social media, Information asymmetry

### 1. INTRODUCTION

Investor refers to a party that invests in a business. The funding provided by investors' investments enables the company's operational activities to be carried out and enables the company to realize its objectives. The company's primary objective is to generate profits; if it is able to do so, its performance is deemed satisfactory. The outstanding performance of a company will be reflected in various ways, including the trading of its stock price. The high share price reflects the high value of the company (Rahmawati, 2015). It is possible to increase the value of a company by disseminating transparent information so that investors can learn about the company's condition and by eliminating biased information. Social media can be used to increase the value of a company. Social media can benefit anyone, including companies whose shares are going public. The company's CSR activities, awards received, and product innovation are revealed through social media. Companies can no longer claim that their product innovations are widely available in Indonesia and dominate the market if this is not the case due to social media. Consequently, the company cannot acknowledge CSR actions if this does not occur. With social media, investors can access information quickly and easily. When a company engages in deviant behavior, the public can easily learn about it, and it will have a significant impact on the company's value.

According to research conducted by Uyar, Boyar, and Kuzey (2018), companies can gain significant benefits from utilizing social media because social media is used to strengthen investor relationships. A further advantage of utilizing social media is marketing company products, delivering new products, or offering product discounts that can entice consumers to purchase company products. Since the profit generated is proportional to the number of products sold, many investors are interested in investing. Companies can use social media to effectively interact and distribute information, which will become a distinct advantage for the company and increase its value.

From 2016 to 2018, individuals utilized social media to satisfy their informational needs. The following table will describe social media users in 2016-2018 on popular social media platforms. Social media can be used to reduce the information asymmetry between two parties. Information asymmetry is a disparity in information between managers and investors, in which managers have more knowledge than investors (Kurinyepa, 2017). Managers who have access to more information than investors are able to take actions that benefit themselves. Suppose the company's information asymmetry is increasing. In this case, it will result in a decrease in the company's value because the greater the information asymmetry, the more biased the information conveyed will be, causing investors to lack confidence to invest and thereby decreasing the company's value (Dorminey, Dull, and Schaupp, 2015). A company's ability to quickly disseminate information to investors can be facilitated by

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the presence of social media, as the use of social media is integral to modern life. Through these social media accounts, investors can read, comment, and ask questions to obtain the necessary information to reduce information asymmetry (Wisnantiasri & Mutira, 2020).

This study establishes a connection between the dissemination of information via social media and corporate value. According to Mauder (2018), businesses use social media to interact with and disseminate information to investors, build and improve investor relations, and reduce information asymmetry so that investors can make informed decisions, thereby increasing the perceived value of the company in the eyes of investors. This study uses information asymmetry as a mediating variable to determine whether social media can influence firm value in the presence of information asymmetry.

The objective of the research conducted by Uyar, Boyar, and Kuzev (2018) is to establish the relationship between social media and company value. According to the findings of Uyar et al. (2018), social media participation has a positive and substantial effect on company value. Companies must use social media to effectively disseminate information in order to reduce information asymmetry. The company's adoption and number of social media platforms have no impact on the company's value.

Wisnantiasri and Mutira (2020) conducted a study to determine whether disclosures on Facebook and Twitter social media can reduce information asymmetry. According to Wisnantiasri and Mutira, companies attempt to disseminate information to investors through various channels, one of which is social media. Companies that consistently post and comment on social media are attempting to reduce information asymmetry by providing transparent information. Facebook can reduce information asymmetry, according to Wisnantiasri and Mutira's (2020) research, because Facebook is frequently used by users to obtain information, whereas Twitter in Indonesia is only used to upload personal items.

Gomes, Hatane, and Devie (2019) conducted an additional study to examine the effect of information asymmetry on firm value. Information asymmetries are information gaps between investors and managers. When information asymmetry occurs, information becomes skewed, causing investors to make erroneous investment decisions. Suppose that investors make poor investment decisions and perceive themselves to be harmed. In such a scenario, investors will feel dissatisfied and lose interest in investing in the same company, reducing its value. This can be overcome by providing a signal to investors through the disclosure of accounting information. The findings of Gomes et al. (2019), namely information asymmetry, have a negative impact on the value of a company. Inversely, the greater the information asymmetry, the lower the firm value.

On the basis of the gaps between the research conducted by Wisnantiasri and Mutira (2020), Gomes et al. (2019), and Uyar et al. (2018), it can be concluded that the use of social media cannot directly affect the value of a company. However, there is a mediating variable, namely information asymmetry, which causes researchers to want to prove the effectiveness of using social media, Facebook, and Twitter on company value, which is mediated by other variables, namely information asymmetry, as well as lack of research in Indonesia on the influence of social media on corporate value and the role of social media in reducing information asymmetry, which makes researchers interested in the topic.

Other studies have typically examined the impact of debt policy, firm size, profitability, dividend policy, and investment decisions on firm value (Mayogi, 2016; Rahmawati, 2015; Septia, 2015; Ayem and Nugroho, 2016). The reason for debt policy is a factor that affects the value of a company, as businesses strive to generate profits in order to pay off their debts. If the payment is made by the due date, the company's performance is strong (Mayogi, 2016). The following factor is company size, which can be interpreted as the size of the company's assets. It is believed that the greater the size of a company, the greater its reputation and profitability, resulting in large profits and prospects that can increase the company's value. Next is profitability; the higher the profit, the better the company's performance; and the company can do everything to develop its business, maintain its existence, and improve company performance, such as distributing dividends to investors, which makes the company attractive so that investors always want to invest in the company, thereby increasing the company's market value (Rahmawati, 2015), the subsequent factor is investment decisions, in which companies make investment decisions to support the company's future and signal to investors that there is a guarantee that the company can grow (Rahmawati, 2015). This study uses debt policy, company size, profitability, dividend policy, and investment decisions as control variables due to the fact that the aforementioned variables can also affect firm value.

This study is grounded in agency theory, which explains the existence of information gaps that can impact the value of a company. Twitter and Facebook were selected for this study because Twitter has more transparent disclosures (Lei, Li, & Luo, 2019) and Facebook has a large number of users in Indonesia based on the table of social media users. Particularly, Twitter and Facebook are regarded as the leading social media networks worldwide (Mauder, 2018)

This study provides empirical evidence as to whether social media can increase the value of a company by decreasing information asymmetry. This research is also anticipated to provide an overview of whether or not investors in Indonesia are interested in using social media to access issuer information as a basis for investment decisions.

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The structure of this article is as follows: Regarding an explanation of the significance of the research, the introduction outlines the theoretical foundations of agency theory and information asymmetry. The following section will discuss research methods and the outcomes of data analysis. In conclusion, the research findings and their implications for future study will be discussed.

### 2. LITERATURE REVIEW

#### 2.1 Agency Theory

According to Jensen and Meckling (1976), agency theory is a theory that explains the delegation of authority for decision-making by principals (investors) to agents. This delegation of authority occurs in business transactions (managers). The fact that there is both an agent and a principal contributes to the occurrence of a problem because both parties will look out for their own interests. Investors want managers to work well for the welfare of investors by generating profits in the company that will be distributed to investors in the form of dividends; however, investors do not fully know whether managers have worked well or not because investors have delegated authority to managers and cannot supervise managers' daily activities in carrying out their duties. Investors want managers to work well for the welfare of investors by generating profits in the company that will be distributed to investors in the form of dividends; however, investors do not fully know whether managers have worked well or (Kholmi, 2017). Investors only get results for what managers do in the form of financial statements that reflect the condition of the company, but sometimes managers manipulate what has been done, such as earnings management. Investors only get results for what managers do in the form of financial statements that reflect the condition of the company. The term for this issue is "information asymmetry," which describes the situation in which managers have an information advantage over investors. The presence of agency costs, or what is more commonly known as agency costs, should help to reduce the number of disagreements that arise between the parties.

It is not uncommon for the information conveyed to investors to be inconsistent with the actual condition of the company so that the company can give managers the right to invest in the company where he works so that managers are motivated to do their best to make the company's performance good so that profits increase and competition is increased. Managers have superior information compared to investors, so it is the manager's responsibility to provide information transparently to investors.

The dissemination of information to the general public via the various platforms made available by social media is one approach that can be taken to mitigate the effects of this information imbalance. Investors are now able to obtain more accurate information about the state of the company through the use of social media, which has an effect on the value of the company (Uyar, et al., 2018). There are many different forms of social media, one of which is Facebook and Twitter. This is due to the fact that both Facebook and Twitter have extensive networks and are widely utilized in Indonesia. By uploading information to social media platforms, businesses have the opportunity to reduce the information gap between themselves and potential investors, which can be accomplished through the use of social media platforms. Therefore, agency theory is applicable to this research in the sense that it can help reduce the information gap that exists between investors and managers.

#### 2.2. Firm Value

Mayogi (2016) contends that a company's achievements from the time the company was founded until the present day contribute to the firm's value. Therefore, one must put in a lot of effort in order for the company to have good value. When a company's value increases, it typically indicates that the returns it generates for investors also increase. A decision in investing, carrying out funding activities, and the way in which the company manages its assets can be measured by how high the price of shares is in the capital market. This can be used to determine the high value of the company as well as the welfare of the investors. Investment indicators have a significant impact on the value of a company. PBV (Price to Book Value), PER (Price Earning Value), and Tobin's Q are just some of the indicators that are used to measure the value of a company; however, for the purposes of this study, PBV (Price to Book Value) indicators are used to measure the value of a company. The Price to Book Value (PBV) ratio illustrates the relationship that exists between the current market price of a traded stock and its book value. PBV is utilized in order to determine whether or not the price of the stock is considered to be reasonable or unreasonable. to make a tally of them. Atmaja (2008: 417) suggests that there is a formula that can be used to determine PBV, and it is as follows:

$$PBV = \frac{\text{Share price}}{\text{Book value per share}} \quad (1)$$

#### 2.3 Asymmetry of the Information

An information gap occurs when one party has a greater information advantage than the other. This is referred to as information asymmetry (Kurinyepa, 2017). When compared to investors, managers of companies almost always have more up-

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to-date information than investors do. This is due to the fact that managers are directly responsible for managing the company, whereas investors are not (Scott, 2012: 126). Information asymmetry creates tension between managers and investors; consequently, information asymmetry needs to be reduced as much as possible so that neither party can gain access to the other's information. The efficiency of the stock market can be improved by reducing the information gap between buyers and sellers, which will make it easier to understand the state of the company. The condition of the company is communicated to investors in a way that is clear and provides them with the same information as the manager, which helps to reduce information inequality.

According to Scott (2012:21), there are two distinct categories of information asymmetry: moral hazard and adverse selection.

1. Conditions known as "moral hazards," in which one of the parties conducting a transaction will know what actions to take and what risks will be accepted while the other party does not and it is more profitable for himself in these conditions than in others.
2. Unfavorable or Adverse Selection. circumstances in which the agent is aware of both the current and the future circumstances of the company.

Web 2.0 technology is the underlying platform for the internet application known as social media. Accessing and operating these systems have become significantly different over the course of time as a result of changes to the underlying technical infrastructure that supports information technology. According to Carr and Hayes (2015), for the first time, people rarely accessed the internet via the world wide web. Instead, they accessed the internet more frequently using applications that were found on gadgets. As a result, people rarely accessed the internet via computers or laptops. Facebook, Twitter, and LinkedIn are examples of social media platforms that offer expansive and limitless network opportunities (Asur and Huberman, 2010).

Companies are interested in adopting social media as a means of disseminating information about the company because of the large number of people who use social media in their personal lives. Companies are increasingly using and uploading content on social media platforms in order to communicate with members of the public, particularly investors, which will influence the decision-making process of investors. The use of social media to disseminate information about companies expands their influence and reach, which results in an increase in the value of those companies as a result of simplified methods for marketing products, an improvement in the level of customer loyalty and satisfaction, and cost reductions in marketing, all of which contribute to an increase in revenue (Culnan, et al., 2010; Uyar, et al., 2018). The presence of social media also has a role in adding value to the company by reducing information asymmetry, which is another way that information asymmetry can be reduced. This is due to the fact that investors will be able to make the appropriate investment decisions if information is readily available to them. After all, companies are no longer able to spread false information because of the widespread availability of clear information and the widespread use of social media by businesses. This is because when businesses use social media, the information they share will be received and evaluated by the general public. If people spread information that isn't true, the value of the company will go down because it will be seen as trying to trick people, especially investors. This will cause the value of the company to decrease. The reach that is generated by social media can provide businesses with the opportunity to interact with stakeholders like investors (Kurinyepa, 2017). Investors are able to communicate with one another and share information regarding the purchasing, holding, or selling of company shares when using social media platforms, which is helpful for investors when it comes to making decisions. On the other hand, investors are able to learn about the most recent problems that are associated with the condition of the company in which they invest. The only way for investors to obtain information quickly is by using their mobile devices or laptops to access the social media accounts that each company has created.

### **2.4 Research hypotheses**

According to Kurinyepa (2017), appropriate usage of social media may assist firms in reaching out to additional investors who have yet to be informed thus far, reducing information asymmetry. According to Jensen and Meckling (1976), information asymmetry may be minimized if information about the company's condition is disclosed between managers, investors, and management, as referred to in agency theory (1976).

Efforts to eliminate management moral hazard, e.g. information asymmetry using information channels, precisely social media, are predicted to increase company value. The more transparent corporate information is conveyed to investors, the better the responsiveness. Therefore investors are supposed to enhance the value of their investment.

H1. Information asymmetry mediates the influence of social media use on firm value

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### 3. RESEARCH METHODS AND STATISTICAL RESULT

#### 3.1 Population and sample

The population in this study is manufacturing and non-financial companies listed in the Indonesian Stock Exchange (IDX website) for 2016-2018. The sampling technique used is the purposive sampling method with the following criteria:

1. Must be listed on the IDX in early 2016
2. Must publish financial report during 2016-2018
3. Official websites are connected directly to Facebook or Twitter
4. Social media Facebook and Twitter were created in 2016 or earlier
5. Facebook social media is a business account
6. Active on Facebook and Twitter during 2016-2018
7. Share prices are listed on the yahoo finance

Whereas for samples that do not use social media, the sampling technique is proportional stratified random sampling.

#### 3.2 Result

The following are the sample criteria and the samples used in this study seen in **Table 1**. This study uses 3 multiple regression equations to answer the research objectives. The equation used is as follows:

1. Regression model of social media variable (independent) and firm value (dependent)

$$PBV = \alpha + \beta_1 \text{SOSMED} + \beta_2 \text{SPREAD} + \beta_3 \text{DER} + \beta_4 \text{SIZE} + \beta_5 \text{ROE} + \beta_6 \text{DPR} + \beta_7 \text{PER} + \epsilon \quad (2)$$

2. Regression model for social media variable (independent) and information asymmetry (mediation)

$$\text{SPREAD} = \alpha + \beta_1 \text{SOSMED} + \beta_2 \text{DER} + \beta_3 \text{SIZE} + \beta_4 \text{ROE} + \beta_5 \text{DPR} + \beta_6 \text{PER} + \epsilon \quad (3)$$

3. Regression model for information asymmetry variable (mediation) and firm value (dependent)

$$PBV = \alpha + \beta_1 \text{SPREAD} + \beta_2 \text{DER} + \beta_3 \text{SIZE} + \beta_4 \text{ROE} + \beta_5 \text{DPR} + \beta_6 \text{PER} + \epsilon \quad (4)$$

Where:

$\alpha$	= Constant
$\beta$	= Correlation coefficient
SPREAD	= Information Asymmetry
PBV	= Firm Value
SOSMED	= Social Media
DER	= Debt to Equity Ratio
SIZE	= Company Size
ROE	= Profitability/Return on Equity
DPR	= Dividend Payout Ratio
PER	= Price Earnings Ratio
$\epsilon$	= Errors

Classical assumptions, such as normality, multicollinearity, autocorrelation, and heteroscedasticity, have been validated prior to the execution of multiple regression analysis. The One-Sample Kolmogorov-Smirnov Test was used to analyse the data that were gathered for this investigation. Before processing the data using SPSS version 26, the researcher used Microsoft Excel to do an initial test on the outliers. In the first equation, the researcher includes data that are considered to be outliers. In the second equation, the researcher removes any outliers and then applies the Lg10 (Natural Logarithm) transformation on the data on the SPREAD variable in order to normalise the distribution of the data. **Table 2** displays the findings of the tests conducted to verify the hypothesis.

**Table 2** shows that the independent variable social media (MEDSOS) has a positive effect on company value. This is shown in equation 1, which can be found in the table (PBV). In contrast, the independent variable social media (SOSMED) has no impact on the information asymmetry when it is used in equation 2. (SPREAD). Within the context of equation 3, the independent variable known as information asymmetry (SPREAD) has a negative impact on firm value (PBV).

Path analysis or influence testing needs to be performed in advance of carrying out the Sobel test.

The result of the path analysis or influence test is that social media can directly affect company value and indirectly, from social media to information asymmetry as mediation and then company value. The magnitude of the direct effect is 0.139, while the indirect effect is  $(0.056) \times (0.139) = 0.007784$ , or the total influence of social media on firm value is  $0.139 + (0.056) \times (-0.097) = 0.133568$

The mediation effect is shown by multiplying the coefficient ( $p_2 \times p_3$ ) of 0.007784. Whether it is significant or not, the Sobel test is carried out as follows:

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Standard error calculation of the indirect effect coefficient

$$\begin{aligned} Sp2p3 &= \sqrt{p3^2 Sp^2 + p2^2 Sp3^2 + Sp2^2 Sp3^2} \\ &= \sqrt{(-0.053)^2 (0.069)^2 + (0.050)^2 (0.036)^2 + (0.069)^2 (0.036)^2} \\ &= \sqrt{1.3373649 + 3.24 + 6.170256} \\ &= 3.278356433 \end{aligned}$$

Calculation of the statistical value of the influence of mediation

$$\begin{aligned} t &= p2p3 / sp2p3 \\ &= (0.050) (-0.053) / (0.069)(0.036) \\ &= -1,06682 \end{aligned}$$

Based on the calculation of the Sobel test, it can be seen that the t-value is less than 1.98 so it can be concluded that information asymmetry does not mediate in this study.

### 4. DISCUSSION

#### 4.1 The Impact of Social Media on the Value of the Business

The findings of this study's data processing indicate that social media (SOSMED) has a substantial impact, both positively and significantly, on the value of firms (PBV). Because of the close connection between social media and the value of a firm, we may conclude that both of them will increase proportionately to the former depending on how successfully the former uses social media to attract customers. Businesses are getting better at leveraging social media to boost corporate value by doing things like enhancing customer satisfaction, generating a good reputation, increasing sales, adding ways to promote products to cut marketing expenses, and ultimately making profits greater. (Alberghini, Cricelli, and Grimaldi, 2014; Uyar, Boyar, and Kuzey, 2018). One additional benefit of using social media is that it can provide a firm with a competitive advantage when compared to other companies (Nababan, 2020). As a result, consumers rather than investors are the primary focus of a company's usage of social media.

#### 4.2 The Impact of Social Media on the Information Asymmetry

According to the findings from the analysis of the data collected for this study, social media (SOSMED) did not influence the information asymmetry (SPREAD). The type of social media that was investigated for this study is not capable of bridging the information gap that exists in agency theory between principals and agents. It is possible that the researchers in this study did not differentiate between the use of different types of social media, such as Facebook and Twitter. As a result, it was not possible to determine which types of social media had influence and which did not have influence. This is one of the reasons why this distinction was necessary. According to Wisnantiasri and Mutira (2020), such as research states that Facebook social media negatively influences company value in the sense that the lower the information asymmetry, the higher the company value. The research also states that the value of the company is positively influenced when the information asymmetry is reduced. This is because investors will be influenced to make judgements regarding their investments based on the information that is broadcast through Facebook. Yet, the worth of the company is not affected by the social media platform Twitter because users often use Twitter to contribute their own content.

Another cause of information asymmetry between agents and principals that isn't affected by social media is the fact that platforms like Facebook and Twitter are primarily geared for customers rather than investors (Mauder, 2018). Twitter is the social media platform that is most commonly used to disclose general news, such as those pertaining to politics, the environment, and education. On the other hand, the website of a company is typically used to target potential investors with information regarding the company's finances.

#### 4.3 The Effect of Information Asymmetry on the Value of a Company

According to the findings of the analysis of the data in this study, information asymmetry (SPREAD) has a considerable impact, both positively and negatively, on business value (PBV). According to the findings of Gomes, et al. (2019) and Fosu, et al. (2016), information asymmetry and firm value have a negative correlation. This means that the lower the information asymmetry, the higher the firm value. This is consistent with the findings of Jensen and Meckling (1976), who stated that investors require transparent information about the condition of the company in order to make investment decisions. Suppose there is some information that has to be presented in a concise form. In that scenario, it will lead to investors making poor decisions regarding their investments and a loss of investor trust in the market, both of which would result in a decrease in the value of the company. The dissemination of information concerning financial reports, announcements of the general meeting of



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shareholders, and dividend distribution schedules is available to investors through a personal website company since this information is what attracts investors.

### 4.4 The Effect of Information Asymmetry as a Mediating Variable

After analyzing the data through path analysis and the Sobel test, it was determined that information asymmetry cannot contribute as a mediating variable between social media and firm value. This is due to the fact that investors in Indonesia are more likely to utilise the corporate website, which offers information pertaining to company finances, rather than social media platforms, which are primarily aimed at consumers.

## 5. CONCLUSION AND RECOMMENDATIONS

The following inferences can be made after taking into account the findings of the investigation and the insights gained:

The first hypothesis reveals that businesses that use social media for official purposes have the potential to increase their company value. This is due to the fact that social media provides consumers with information regarding product marketing and product innovation, which in turn allows company value to increase. Hence, consumers rather than investors are the primary focus of social media.

The second hypothesis shows that businesses that use social media are unable to reduce the information gap that exists between principals and agents. This is due to the fact that social media is primarily used to target customers, whereas company websites are primarily used to target investors. The use of social media platforms is still commonly used in order to upload things that are ordinary.

The third hypothesis posits that the value of a company will be higher if the information asymmetry between the agent and the principal is lower. This is due to the fact that investors will be less likely to invest money into a business if there is a gap in the amount of information available to each party. As a result, investors will be more susceptible to errors when choosing where to put their money, which will result in a lower value for the company.

Because the types of social media utilised by researchers are not distinguished, it is not possible to determine which social media does not mediate and which social media does mediate. As a result, information asymmetry does not serve as a mediator between the social media platforms Twitter and Facebook and the value of a company. Companies that use social media have the ability to directly increase their company value by introducing or marketing company products and adding product innovation. This increases the likelihood that customers will be interested in using these products, which in turn increases the company's profitability, which in turn increases the company's reputation, which in turn increases the company's value.

Future research can develop this research by categorizing the types of social media because there is a possibility that the intensity of social media use in a particular region or type of organization can influence the research results. Future research can use other indicators to measure profitability, such as ROA (Return on Assets), the firm value, such as Tobins' Q, and information asymmetry, such as dispersion analyst forecasts. Companies are expected to use social media to upload information regarding financial reporting so that information reaches investors more.

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# The Impact of Social Media on Corporate Values: Is Information Asymmetry matter?

## APPENDIX

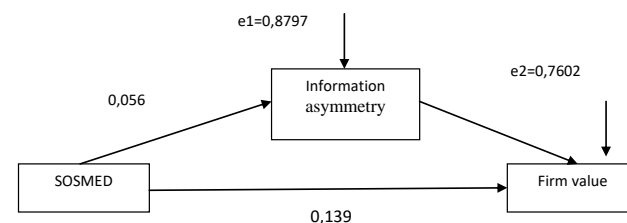
Table 1. Sample Criteria

Criteria	Firms
Listed on the IDX in early 2016	428
Does not meet the criteria:	
Official websites are not directly connected to Facebook or Twitter.	(331)
Facebook and Twitter made up more than 2016.	
Facebook is not a business account.	(23)
Not active on Facebook and Twitter during 2016-2018.	(2)
Share prices are not listed on yahoo finance.	(17)
	(1)
Sample	54
Firm-years	162

Table 2. Hypothesis Test Results

Dependent Variables	Independent Variables	$\beta$	Sig.	Test results
PBV	MEDSOS	0.260	0.032	Supported
	Control Variables			
	DER	-0.052	0.635	Not supported
	SIZE	-0.037	0.331	Not supported
	ROE	3,574	0.000	Supported
	DPR	0.912	0.004	Supported
	PER	0.033	0.000	Supported
	SPREADS	-0.053	0.143	Not supported
Lg10_SPREAD	Independent Variable			
	MEDSOS	0.050	0.467	Not supported
	Control Variables			
	DER	0.057	0.373	Not supported
	SIZE	-0.100	0.000	Supported
	ROE	-0.484	0.207	Not supported
	DPR	-0.353	0.052	Not supported
	PER	-0.001	0.874	Not supported
PBV	Lg10_SPREAD	-0.331	0.021	Supported
	Control Variables			
	DER	-0.030	0.781	Not supported
	SIZE	-0.054	0.155	Not supported
	ROE	3,608	0.000	Supported
	DPR	1.113	0.000	Supported
	PER	0.032	0.000	Supported

Table 3. Sobel Test



$$e1 = \sqrt{1-0.226} = 0.8797$$

$$e2 = \sqrt{1-0.422} = 0.7602$$



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