


## RESEARCH ARTICLE

# Does the origin region of institutional shareholders influence water disclosure in Indonesian companies?

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**Abstract**

This study investigates the association between institutional shareholders and the extent of water disclosure in Indonesian companies based on the origin region of institutional investors, namely domestic, Asian, Western, and tax haven countries. Data are taken from 489 non-financial companies listed on the Indonesia Stock Exchange (IDX) for the period of 2014 to 2019. The developed hypotheses are tested using panel data with the ordinary least squares (OLS) method. This study reveals the level of water disclosure in Indonesian companies is relatively low. The higher percentage of shares are owned by institutional shareholders from domestic, Asian, and tax haven countries result the lower level of water disclosure. On the other hand, institutional shareholders from Western countries are the driver of water disclosure practices in Indonesian firms. The findings of this study provide the empirical evidence for policymakers, investors, and other stakeholders on the role of institutional shareholders in promoting water-related disclosure practices in developing countries like Indonesia.

**KEYWORDS**

developing country, Indonesia, institutional shareholders, listed companies, water disclosure

## 1 | INTRODUCTION

Water is essential for life, but it is not as widely understood or protected compared to other natural resources (Fogel & Palmer, 2014). Nowadays, attention toward water is increasing since freshwater is scarce. Climate change and population growth create more pressure on water sources, leading to water shortages (Christ & Burritt, 2017). Water scarcity threatens ecosystems and human health, and in extreme cases, it can result in human fatalities, operational delays, and business failures (Burritt et al., 2016; Wedawatta & Ingirige, 2012). Companies in all countries can no longer use water resources with a “business as usual” mentality to maintain water availability (Burritt et al., 2016; Yu et al., 2020). The industry is deemed a significant contributor to water scarcity because it uses a large amount of water for its business operations (Larson et al., 2012).

Nowadays, businesses are under pressure from stakeholders to take responsibility for water because it is crucial for the quality of life

(Northey et al., 2019; Weber & Saunders-hogberg, 2018). Companies are advised to have water management activities because such efforts are critical to ensure water sustainability. Stakeholders want companies to be transparent concerning their water responsibility activities. This implies that stakeholders press companies to create disclosure practices to address the pressure and information needs. Hazelton (2013) argues that access to water information is a part of human rights. This statement implicitly explains that corporations must practice disclosure to fulfill human rights. Shareholders, as primary stakeholders, have a positive perception of environmental disclosure and want the company to be accountable for its environmental impact (de Villiers & Alexander, 2014).

Previous studies examining the determinants of corporate disclosure provide empirical evidence that disclosure practices are significantly driven by shareholders (Nurleni et al., 2018; Ullah et al., 2019). Of the types of shareholders, institutional shareholders have a higher interest in social responsible activities. An institutional investor is

typically a large investor and is perceived to have an influential monitoring role in company management (Habbash, 2016; Ullah et al., 2019). Although institutional shareholders have no desire to control the company (Salehi et al., 2017), they accept playing an active role in corporate governance and long-term performance, such as corporate social responsibility (CSR) (Qa'dan & Suwaidan, 2019). This kind of shareholder requests the manager to provide a higher level of disclosure practices to monitor the company (Habbash, 2016; Ntim & Soobaroyen, 2013). In the CSR-related disclosure literature, scholars have widely discussed the role of institutional shareholders in disclosure practices (i.e., Alnabsha et al., 2018; Nurleni et al., 2018). Institutional shareholders significantly influence company behavior (Kabir et al., 2020). Boubaker et al. (2017) provide empirical evidence that institutional investors with long investment horizons have a positive association with CSR scores.

In terms of water disclosure, previous studies have analyzed the impact of ownership structure used as a proxy for shareholder influence (Burritt et al., 2016; Yu et al., 2020). However, there is no research examining the effect of the type of shareholder on water disclosure, such as institutional shareholders. To fill this gap, this study investigates the institutional shareholder effect on water disclosure practices. Unlike previous studies, this investigation takes into account the origin region of an institutional investor. This is because different countries have different cultures and values regarding corporate responsibility practices (Ismail et al., 2018; Nagata & Nguyen, 2017). Hence, it can be assumed that different regions of investors result in different pressures on water-related disclosure. This study categorizes the regions into four groups: domestic, Asia, Western, and tax haven.

This study focuses on analyzing water disclosure practices among Indonesian companies for three main reasons. First, institutional investors own a significant percentage of shares traded on the Indonesia Stock Exchange (IDX), which suggests their significant influence on management decisions and performances. Institutional investors held 73.15% of the company's shares traded on the IDX (CNN Indonesia, 2015). Previous research has also shown that institutional ownership significantly impacts corporate CSR-related practices in Indonesia (Nurleni et al., 2018). Second, Indonesia is experiencing a decline in freshwater supply while the water demand continues to increase due to population and economic growth, which has been exacerbated by the effects of climate change (VOI, 2021). Finally, while corporate responsibility practices and disclosures are mandatory in Indonesia, regulations do not provide indicators or guidance for responsible practices and disclosures, allowing companies to voluntarily choose their CSR category and disclose their performance (Cahaya et al., 2012).

Our results, based on the data from non-financial companies that listed in IDX, document that there is a negative relationship between domestic institutional investors and the extent of water disclosure. We also find that institutional investors from Asia and tax haven countries has negative association with water disclosure in Indonesian companies. These findings indicate that the higher percentage of shares held by domestic, Asia, and tax haven

countries reduce the level of disclosure related water information. On the other hand, this study find the positive association between Western investors and water disclosure, indicating that they put pressure to companies to be more accountable and transparent regarding business' impacts to water.

This study offers insights into the role of institutional shareholders in promoting corporate water responsibility practices in Indonesia, a country that is facing a water crisis due to various factors such as climate change and population growth. The findings of this study could inform policymakers, investors, and other stakeholders on the importance of institutional shareholders in promoting water-related disclosure practices in developing countries like Indonesia. This research could also provide useful information for companies to improve their water management practices and disclosures, which can lead to better water sustainability outcomes.

The remainder of this paper is arranged as follows. Section 2 presents the theoretical argument and literature review. Section 3 offers hypotheses development. This is followed by the discussion of the research method in Section 4. Afterwards, we report and discuss our empirical findings with robustness check and further analysis in Section 5. Section 6 then concludes the study.

## 2 | THEORETICAL ARGUMENT AND LITERATURE REVIEW

This study adopts stakeholder theory as firm's management is expected to conduct activities expected by stakeholders and to report those activities to stakeholders (Guthrie et al., 2004). This theory has widely used by scholars to discuss corporate reporting practices (i.e., Ching & Gerab, 2017; Nyahas et al., 2018; Qu et al., 2013). A stakeholder is a group or individual who can affect or is affected by a firm's goals (Roberts, 1992). Stakeholder power is the first dimension of the three-dimensional model developed by Ullmann (1985). It means that the manager is recommended to assess the importance of meeting stakeholder demands to achieve the firm's goals (Roberts, 1992). When stakeholders control resources, a company should respond to satisfy stakeholders' needs (Ullmann, 1985). Corporate responsibility practice and disclosure can help maintain a good relationship between the company and stakeholders. Clarkson (1995) then classifies stakeholders into two groups based on the firm's dependence on them: primary and secondary stakeholders. The primary stakeholder group describes those without whose participation the corporation could not survive as a going concern. The secondary stakeholder group is defined as those who influence or are influenced by the company but are not essential for business sustainability.

There is a debate whether companies should pay attention to all stakeholders as a moral obligation or focus on specific stakeholders. Clarkson (1995) argues that companies need to focus on the interests of primary stakeholders. If the primary stakeholders are dissatisfied and withdraw from the company's system, the corporation cannot



continue its business. On the other hand, Guthrie et al. (2004) explain that all stakeholders have the right to be provided with information about the company's impact on them, even if they do not use it. Thus, this debate has led to the emergence of two branches of stakeholder theory: normative or ethical and managerial or positive (Nyahas et al., 2018).

Of the two branches of stakeholder theory, we suggest that managerial stakeholder theory is appropriate for this study to explain the relationship between institutional shareholder and water disclosure. It is based on three reasons. First, this branch allows managers to pay attention to a limited group of critical stakeholders for the firm, as it is impossible to satisfy the demands of an unlimited list of stakeholders (Nyahas et al., 2018). We suggest that institutional shareholder is one of firm's primary stakeholders because it provides critical financial resources to the company. Company's survival will be threatened if it fails to satisfy shareholders' demands. Second, the majority of shares of Indonesian firms is owned by institutional investors so that they have stronger ability to influence company's decisions including disclosure practices. Third, we suppose that the influence of institutional investors depend on their origin region. For instance, previous studies argue that investors from Western countries tend to demand higher disclosure level because they have greater experience and knowledge on sustainability practices and disclosures (Oh et al., 2011; Sari et al., 2021). On the other hand, Nagata and Nguyen (2017) argue that domestic investors do not want to provide significant influence as they are closer to managers. In addition, investor from tax haven countries may not interested in transparency practices as tax haven countries are strongly related to financial criminal actions (Christensen, 2011; Otusanya & Adeyeye, 2021; Rose, 2021). It can be supposed that the managers may prioritize the demands from Western investors than others.

In the water disclosure literature, stakeholder theory has been adopted to examine the association between stakeholders and water disclosure. However, the number of published studies about water disclosure is lower than other sub-environmental disclosure aspects (Zhang et al., 2021). Burritt et al. (2016) use stakeholder theory to investigate stakeholder's influence on corporate water disclosure in Japanese firms. This study finds that larger companies tend to disclose more water information. Higher water risk industry provide more information about water than the lower water risk industry. This study also finds that there is negative association between ownership concentration and water disclosure. Zhou et al. (2018) examine all companies that participated in the Carbon Disclosure Project (CDP) water program from 2010 to 2013 and find that self-regulation mechanisms encourage companies to participate in water disclosure. The self-regulation mechanism consists of four aspects: water management, water policy, water action, and water performance evaluation. The stringency of environmental laws in a country and water use intensity are also significant drivers of water disclosure.

Yu et al. (2020) analyze the effect of company and shareholder characteristics on water disclosure using stakeholder theory. This study investigates 347 US companies and find that creditors

significantly influence companies on water disclosure practices. Similar to Burritt et al. (2016), water-sensitive companies disclose more information in association with water action. Bockholder ownership tends to increase corporate water disclosure because they have greater power to control and pressure the manager to show corporate transparency on water issues. Wicaksono and Setiawan (2022) examine the level of water disclosure in agriculture industry across the globe. This study finds that government, foreign ownership, and international operation are significant drivers of water disclosure. Wicaksono and Setiawan (2023) investigate the level of water disclosure in Asian mining companies and find that environmental regulation stringency, media exposure, and international operation have positive and significant influence on water disclosure. Salsabila and Adhariani (2023) examine water disclosure in Indonesian companies and find that gender diversity does not provide significant influence on the extent of water disclosure.

These previous studies have documented the relationship between corporate characteristics and governance variables and water disclosure. However, there is no study investigating the effect of the origin region of shareholder on water disclosure. This examination is important because different region location of investor has different value, culture, and political dimension that affect shareholder's behavior and decision (Nagata & Nguyen, 2017; Wicaksono et al., 2023). As this study uses Indonesian firms as samples where their shares are dominantly owned by institutional shareholders, we test the effect of the origin region of institutional shareholder on water disclosure.

## 3 | HYPOTHESES DEVELOPMENT

### 3.1 | Domestic institutional shareholders

Domestic investors are firm's shareholder located in the same country as company. Hence, this shareholder may not experience significant asymmetry problems compared to foreign shareholders (Wicaksono et al., 2023). It is because domestic shareholder can easily collect corporate information, whereas foreign shareholder has difficulties to gather information due to geographical separation (Haniffa & Cooke, 2005; Sari et al., 2021). Oh et al. (2011) argue that preferences, time horizon, and information asymmetry cause different behavior and influence between domestic and foreign shareholder on corporate decision including disclosure practices. Foreign investors are considered as an active investor because they do not hesitate to confront managers and express their criticism (Ahmadjian & Robbins, 2005; Nagata & Nguyen, 2017). On the other hand, domestic investors tend to be closer to managers so that they are reluctant to express their voices in decision-making processes (Nagata & Nguyen, 2017). In addition, domestic institutions do not want to influence corporate governance especially in the country with weak investor protection (Aggarwal et al., 2011). Ilyas et al., (2022) also argue that this investors do not play strong monitoring role because it is costly and potentially harm their business relationship. It can be assumed

that domestic institutional shareholders are not interested to engage in social activities and disclosures. Ahmadjian and Robbins (2005) explain that domestic investors are able to resist the influence of foreign investors, although foreigners press the managers to provide corporate information to reduce asymmetry information problems. Based on the explanation above, we suppose that the level of water disclosure is lower when domestic institutional shareholders own higher portion of firm's shares. Therefore, the following hypothesis is investigated:

**Hypothesis 1.** There is a negative association between domestic institutional shareholders and water disclosure.

## 3.2 | Foreign institutional shareholders

Currently, the Government of Indonesia actively invites foreign investors to invest their money in Indonesia including Indonesian firms to foster national economy growth. Hence, there is possibility that companies' behavior and performance including disclosure practice in Indonesian firms are influenced by foreign investors. Full list of countries of foreign investors in Indonesia are presented in National Single Window for Investment (NSWI) organized by Indonesian Capital Investment Coordinating Board (BKPM) (<https://nswi.bkpm.go.id>). Previous studies indicate that CSR-related disclosure of Indonesian companies is significantly influenced by foreign investors (Cahaya et al., 2017; Hanifa & Cahaya, 2016). Because institutional shareholders own significant amount of Indonesian firms' shares, this study also investigate the effect of foreign institutional investors on water disclosure. Unlike prior studies, we suppose that the effect of foreign investors on corporate disclosure may be driven by the origin region of foreigners which have different cultures, values, and political issues. Hence, we investigate the effect of origin region of foreign institutional shareholders. This study derives foreigners into three groups based on the region where the investor come from, namely Asian, Western, and tax haven. The hypotheses development of these regions are discussed below.

### 3.2.1 | Asian institutional shareholders

Indonesia receives foreign investment which come from Asian countries such as Singapore, Hongkong, and China. These countries are classified as developed countries which are more concerned with global accountability and sustainable business practices. Previous studies indicate that foreign investor from developed countries actively press managers to show stewardship activities and disclosures including water disclosure (Sari et al., 2021; Wicaksono et al., 2023). In addition, these countries has water regulation that encourage their people and industries to concern on water sustainability. China, for instance, has adopted stringent legislation because of its limited water resources. Water

in China is regulated by the 1988 Water Law. It governs the use of water resources to achieve national economic development and people welfare (Zhang et al., 2021). Chinese investors largely focus on environmental, social, and governance (ESG) practices so that they are encouraged to comply with host's country minimum requirement of ESG practices (Mingey et al., 2023). It can be said that the investors will provide the pressure to companies' management to show sustainable business activities and disclosures. Because Indonesia receives investment from developed countries in Asia, which has higher awareness on sustainability and has strict water regulation, we suppose that they will actively influence Indonesian firms' management to show water stewardship activities and disclosures. Therefore, this study proposes the following hypothesis:

**Hypothesis 2.** There is a positive association between Asian institutional shareholders and water disclosure.

### 3.2.2 | Western institutional shareholders

Indonesia also receives investments from Western countries such as the United States (US), the United Kingdom (UK), and European countries. Hence, there is a possibility that Western management style may be implemented in Indonesian companies. According to Oh et al. (2011), the trend of CSR implementation in many Asian countries has primarily been influenced by Western style. Furthermore, Amran and Devi (2008) reveal that investors from Western countries such as the US and UK place sustainable development as a high priority. Institutions in Europe and the US are widely recognized for their expertise and familiarity with CSR practices and disclosures. These countries have long understood the importance of companies implementing CSR strategies to benefit society (Soh et al., 2014). Additionally, Giannarakis (2014) states that the US is a pioneer in CSR practices and reporting, giving them a better understanding of the meaning and objectives of CSR for the environment and society. Therefore, institutions in Western countries tend to provide more non-financial information in their reports (Matten & Moon, 2008). This is supported by Bhatia and Makkar (2020), who find that CSR practices in Western countries are higher than those in other countries.

The influence of Western investors may be stimulated by sustainability-related regulations and commitments in their countries. For example, In the European Union (EU) context, the EU Water Framework Directive is established to protect inland surface water, transitional water, coastal water, and groundwater. Its purpose is to prevent and reduce pollution, promote sustainable water use, and mitigate the effects of floods and droughts (European Parliament, n.d.). In addition, the EU is strongly promoting sustainable finance to support economic growth by reducing pressures on the environment (European Commission, n.d.). Hence, investors from European countries including institutional investors are requiring investee to disclose ESG-related information (Park & Jang, 2021). In addition, there is increasing attention from US investors about ESG and sustainability

practices. It is because society is more interested in social issues and US investors want to protect and increase potential return through sustainability practices and disclosures (PricewaterhouseCoopers, 2023). According to above explanations, investors from Western countries expect investee to create the higher level of sustainability-related disclosures such as water disclosure. Hence, the following hypothesis is proposed.

**Hypothesis 3.** There is a positive association between institutional shareholders from Western countries and water disclosure.

### 3.2.3 | Institutional shareholders from tax haven countries

Tax haven countries such as British Virgin Islands (BVI), Cayman Islands, Seychelles, Bermuda, and Mauritius make any investments in Indonesian companies and national projects. Since the Panama Paper is released, tax haven countries are well understood as the countries with lower tax rate and they maintain confidential information such as company ownership and financial information. In addition, tax haven countries allow foreigners to establish institutions without a physical building, including a corporate structure, which can enable individuals or groups to set up shell companies to hide their assets and reduce taxes in their origin country (Singh, 2010). This can also be used to invest in companies where the same owner owns both, thereby maximizing profit with lower taxes (Agyenim-Boateng, 2021). Tax haven countries are often associated with criminal practices such as corruption and money laundering because of their low level of transparency (Christensen, 2011; Otusanya & Adeyeye, 2021; Rose, 2021). In terms of disclosure practices, law in BVI imposes no specific disclosure requirement so that BVI companies free to create their disclosures for the market including ESG disclosure practices (Pape, 2021). It can be said that investors from tax haven countries may not encourage sustainability activities and disclosures. Garanina and Aray (2020) find that institutional investors registered in tax haven countries tend to create the lower level of CSR-related disclosure. Therefore, this study proposes the following hypothesis:

**Hypothesis 4.** There is a negative association between institutional shareholder from tax haven countries and water disclosure.

## 4 | RESEARCH METHOD

### 4.1 | Data and sample

The research sample consists of 489 companies listed on the IDX. This study uses this sample for four reasons. First, freshwater in Indonesia is gradually decreasing due to climate change and high demand from the population and industry (VOI, 2021). Second, institutional

shareholders hold 73.15% of the outstanding shares of Indonesian listed companies (CNN Indonesia, 2015). Third, this study only focuses on listed companies since they receive more attention from stakeholders such as shareholders, the government, and the public. Fourth, listed companies are more regulated than unlisted companies in terms of social responsibility practices. Therefore, listed companies are assumed disclose higher levels of responsibility activities in their reports. However, we do not include financial institutions in our samples because their business activities do not have significant impacts to water (Yu et al., 2020).

The data for this study are obtained from company reports, such as annual reports and sustainability reports (if available) from 2014 to 2019. The Indonesian government release Law No. 27 about land and water conservation law in 2014. This regulation is addressed to preserve land and water to achieve social welfare. All water users are expected to play an active role in land and water conservation activities. This law also emphasizes on monitoring procedures regarding planning, organizing, and training on land and water conservation. These activities are supervised by the government by involving the society. As industries are major water user, this regulation encourages companies to take into account water conservation to preserve water quantity and quality. Therefore, water conservation activities are important to meet the regulation and water disclosure is necessary to provide information to all stakeholders.

### 4.2 | Variable definition

This study investigates the relationship between institutional investors' origin region and water disclosure in Indonesian companies. The main objective is to examine the effect of institutional shareholders on water disclosure in these companies. The definition of the variables used in the research is discussed in Table 1.

#### 4.2.1 | Dependent variable

Water disclosure is the dependent variable used in this study. A water disclosure index is constructed and used to assess the level of water disclosure reported by Indonesian listed companies. The construction of the water disclosure index is based on the water disclosure parameters developed by Morikawa et al. (2007). The checklist consists of 24 water disclosure items covering both quantitative and qualitative parameters. To measure this dependent variable, a content analysis technique is assigned to measure water disclosure practices. In terms of index construction, the company report is carefully read to ensure that no water-related information is missed. This study applies a dichotomous approach to scoring water disclosure, assuming that every water disclosure parameter is equally weighted (Zaid et al., 2020). A score of 1 is given if the item of water disclosure is disclosed, and 0 if it is not reported (Muttakin & Subramaniam, 2015; Said et al., 2009). Following Burritt et al. (2016), a composite of these scores is employed as a water disclosure index with a value ranging from 0 to 24. This study also

**TABLE 1** Variable definition.

Notation	Definition	Description
<i>Dependent variable</i>		
WDI	Water disclosure index	Total disclosed parameter of water disclosure
<i>Independent variable</i>		
DOM	Domestic Institutional shareholder	Percentage of shares owned by the domestic institutional investor
ASIA	Institutional shareholder from Asia countries	Percentage of shares owned by Asian institutional investor
WEST	Institutional shareholder from Western countries	Percentage of shares owned by the Western institutional investor
THV	Institutional shareholder from tax haven countries	Percentage of shares owned by the institutional investor from tax haven countries
<i>Control variable</i>		
ROA	Return on asset	Net income divided by total assets
SIZE	Firm size	The natural logarithm of total assets
LEV	Leverage ratio	Total liabilities divided by total assets
AGE	Firm age	Number of years since the firm listed in IDX
AUDIT	Auditor reputation	1 if auditor is Big-4 firm, 0 otherwise

evaluates the reliability and internal consistency of the items included in the checklist. The value of Cronbach's alpha for water parameters in the checklist is 0.76, which is considered reliable (Sekaran & Bougie, 2016).

#### 4.2.2 | Independent variable

This study examines the origin region of institutional shareholders of Indonesian listed companies, using institutional shareholders as an independent variable. In contrast to previous studies, this research categorizes institutional shareholders into four groups: domestic, Asian, Western, and tax haven countries. Institutional shareholders are defined as parties owning institutions such as foundations, banks, insurance companies, investment companies, limited liability companies (PT), and other institutions, following the definition used by Nurleni et al. (2018). The information regarding the origin region of institutional shareholders is obtained from the company's reports. However, if the data is unavailable, this study retrieves it from the database.

The domestic institutional shareholder is an institution located in Indonesia, and this variable is measured by the total percentage of shares owned by Indonesian institutional shareholders. An Asian

institutional shareholder, on the other hand, is an institution from countries in Asia, excluding Indonesia. This study acknowledges that some countries in Asia are classified as developed countries, and previous studies have found that shareholders from developed countries tend to be more active in CSR-related practices and disclosures than those from developing countries (Sari et al., 2021). However, this study does not take this into account since Asian companies are heavily influenced by Western management styles (Oh et al., 2011). The Asian institutional shareholder is measured by the total percentage of shares held by institutions from Asian countries other than Indonesia.

Investors from Western countries are known to have more experience in CSR practices than investors from other countries. Previous studies have confirmed that Western shareholders significantly drive disclosure practices (Amran & Devi, 2008; Oh et al., 2011). Therefore, this study also examines the effect of institutional shareholders from Western countries on water disclosure in Indonesian firms. In this study, the Western shareholder is an investor from the US, Canada, and European countries. The total percentage of ownership of Western institutional shareholders is used to measure this variable. Additionally, this study investigates the relationship between institutional shareholders from tax haven countries and water disclosure. Following Garanina and Aray (2020), institutional investors from tax haven countries are those registered in the British Virgin Islands, Cayman Islands, Seychelles, Bermuda, and Mauritius. This variable is measured by the total ownership of institutions registered in these countries.

#### 4.2.3 | Control variable

Apart from the explanatory variables, several variables are theoretically related to water disclosure practices, and these control variables are also included in the regression model of this research. Based on a systematic literature review, corporate characteristics are known to affect water disclosure. Therefore, this study includes corporate characteristics that have been widely used in previous studies investigating water disclosure.

This study includes several control variables in the regression model. First, the company's profitability variable is included since companies with higher profits tend to increase corporate disclosures (Alnabsha et al., 2018). Profitability is measured using the value of return on assets (ROA), which is defined as the ratio of net income divided by total assets (Habbash, 2016). Second, firm size is included since larger companies tend to disclose more information concerning water (Burrirt et al., 2016). Firm size is measured by the natural logarithm of total assets (Huafang & Jianguo, 2007).

Third, previous research indicates that leverage is a driver of corporate disclosure (Fahad & Nidheesh, 2021). Companies that rely on debt financing are expected to make social activities and disclosures to respond to creditor expectations (Lu & Abeysekera, 2014). Additionally, companies with a high leverage ratio are considered risky, so managers disclose corporate information to assure stakeholders (Zaid et al., 2020). Following Ullah et al. (2019), leverage is

measured by total liabilities divided by total assets. Fourth, firm age is included as older companies are expected to engage in social responsibility activities (Roberts, 1992). This variable is measured by the years since the company has been listed on the IDX. Fifth, companies with reputable auditors tend to make more corporate disclosures. Thus, this study uses audit reputation as a control variable measured by a value of 1 if audited by Big-4 auditors and 0 otherwise (Huafang & Jianguo, 2007).

### 4.3 | Model specification

This study applies quantitative analysis in 6 years of investigating corporate water disclosures in Indonesian companies. This study analyzed the data using the panel regression method. The regression model is constructed based on the variables described in the hypothesis and all control variables. This study proposes the following model.

$$WDI_{it} = \beta_0 + \beta_1 DOM_{it} + \beta_2 ASIA_{it} + \beta_3 WEST_{it} + \beta_4 THV_{it} + \beta_5 ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 AGE_{it} + \beta_9 AUDIT_{it} + \varepsilon$$

Where  $i$  represents the firm,  $t$  describes the year,  $\beta_1$  to  $\beta_9$  are the regression coefficients, and  $\varepsilon$  explains the error term.

## 5 | RESULTS

### 5.1 | Descriptive statistics

Table 2 summarizes descriptive statistics for all variables used in the model. The average water disclosure is 0.641, with minimum and maximum values of 0 and 8, respectively. The mean value shows that a small number of companies disclose water-related information. Then, the maximum value of 8 indicates that water disclosure practices are relatively low. As shown in Table 2, Indonesian companies are dominantly owned by the domestic investor, with a mean value of 43.912%. The average of Asian institutional ownership is 10.938%. Institutional shareholders from Western countries have an average percentage of 23.53%, ranging from a minimum value of 0 to a maximum value of 87.02. Investors from tax haven countries have a minimum of 0 and a maximum of 98.31, with a mean of 9.612%. In terms of control variables, the mean profitability, firm size, leverage, and age score are 0.029, 28.555, 0.530, and 14,368, respectively. Statistic descriptive shows that 32.80% of sample firms are audited by Big-4 auditors.

### 5.2 | Correlation analysis

Table 3 presents the correlation matrix for the variables investigated in this study. The results show that water disclosure has a negative correlation with domestic, Asian, and tax haven institutional investors, while institutional shareholders from Western countries have a

positive and significant relationship with water disclosure. However, the coefficient of Asian investors to water disclosure does not support the hypothesis, as it suggests a positive relationship. This finding indicates that companies with higher Asian institutional investors tend to disclose a lower degree of water information. Among the control variables, water disclosure is positively and significantly correlated with size, company age, and auditor reputation, but not with profitability and leverage.

This statistical tool assumes that there is no multicollinearity problem among the explanatory variables. Sekaran and Bougie (2016) explain that a high correlation (more than 0.70) indicates a severe multicollinearity problem. Table 3 shows that none of the explanatory variables have a coefficient correlation score higher than 0.70. Furthermore, the tolerance and variance inflation factor (VIF) values for the explanatory variables in the regression model are greater than 0.1 and lower than 10, indicating that there is no serious multicollinearity problem.

### 5.3 | Panel regression results

We run a Hausman test to determine the best technique for estimating the research model, and the results showed that the random effect was better than the fixed effect. Therefore, we estimated the model using the random effect. Following the analysis technique described in Ullah et al. (2019), we begin our investigation by testing each predictor variable with control variables in a model, and we present the results of these tests in column 1 through 4. Column 5 examines all predictor and control variables in association with water disclosure. Table 4 presents the results of the panel data regression method that we used to test all hypotheses.

First, Column 1 shows a negative and significant relationship between domestic institutional shareholders and water disclosure ( $\beta = -.272, p < .01$ ). Thus, H1 is supported. It indicates that the higher percentage of shares held by domestic institutions results in a lower level of water disclosure. This result is consistent with Nagata and Nguyen (2017) that domestic shareholders may be less aggressive in pressuring management to disclose any information. Column 2 documents that institutional shareholder from Asia has a negative and significant relationship with water disclosure ( $\beta = -.207, p < .10$ ). Hence, H2 is not supported. It can be said that management discloses less water information when Asian institutional shareholders hold higher ownership. According to Sharma (2013), Asian CSR philosophy is about philanthropic activities which may not be relevant to water disclosure indicators. Therefore, management emphasizes on philanthropic activities rather than making water disclosure.

Column 3 reports that Western institutional shareholder has a positive and significant effect on water disclosure ( $\beta = .289, p < .10$ ). Therefore, H3 is supported. Our result implies that Western institutional investors will increase the level of water disclosure in Indonesian companies. This finding confirms Garanina and Aray (2020), who suggest that Western investors enhance the degree of CSR-related disclosure. Column 4 reports a negative and significant association between institutional shareholders from tax haven

Variable	Mean	SD	Minimum	Maximum
WDI	0.641	1.164	0	8
DOM	43.912	0.315	0	100
ASIA	10.938	0.227	0	99
WEST	23.53	11.771	0	87.02
THV	9.612	22.819	0	98.31
ROA	0.029	0.303	-4.21	10.744
SIZE (in million Rupiah)	9,781,153	23,528,107	2928	351,958,000
LEV	0.530	1.016	-0.704	28.120
AGE	14.368	9.845	1	42
				<b>Percentage</b>
AUDIT	Big-4			32.80
	Others			67.20

TABLE 2 Descriptive statistics.

Note: WDI = Water disclosure index; DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation.

TABLE 3 Correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) WDI	1									
(2) DOM	-0.063***	1								
(3) ASIA	-0.010*	-0.425***	1							
(4) WEST	0.044**	-0.217***	-0.037*	1						
(5) THV	-0.048**	-0.182***	-0.061***	-0.034*	1					
(6) ROA	0.020	-0.001	0.041**	0.072***	0.026	1				
(7) SIZE	0.314***	-0.038*	-0.008	0.011	0.010	0.055***	1			
(8) LEV	-0.025	-0.012	0.043**	0.059***	-0.011	0.035*	-0.072***	1		
(9) AGE	0.061***	-0.149***	0.093***	0.227***	0.126***	0.005	0.100***	-0.026	1	
(10) AUDIT	0.21***	-0.085***	0.176***	0.118***	0.114***	0.066***	0.392***	-0.057***	0.222***	1
<i>Multicollinearity</i>										
Tolerance		0.688	0.711	0.844	0.903	0.981	0.829	0.980	0.895	0.758
VIF		1.453	1.406	1.185	1.108	1.019	1.206	1.021	1.117	1.319

Note: WDI = Water disclosure index; DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation. \*, \*\*, \*\*\*, represent significance at 10%, 5%, and 1%, respectively.

countries and water disclosure ( $\beta = -.779$ ,  $p < .01$ ). Thus, H4 is supported. It once again supports Garanina and Aray (2020) that investors from tax haven countries result in a lower level of corporate disclosure. In Column 5, we include all the hypothesized variables and the results are consistent with the findings displayed in Column 1–4.

## 5.4 | Robustness check

To ensure that the research model is robust, this study replaces the measurement of the water disclosure index with the water disclosure parameters from the Global Reporting Initiative (GRI). It is because

GRI is a sustainability reporting guideline that has been recognized and implemented in many companies worldwide (Fernandez-Feijoo et al., 2014). Using the same technique as Table 4, Table 5 documents the consistent results. This study also runs the system generalized method of moments (system-GMM) estimator for dealing with the potential of endogeneity issues. This study runs Arellano-Bond test to evaluate whether the idiosyncratic term is serially correlated. The evaluation is presented in Table 6. The results show that AR(1) is significant ( $p < .1$ ), but AR(2) reports insignificant result ( $p > .1$ ). It can be concluded that there is no serial autocorrelation problem of GMM model. We also test the validity of instrument that is included in the model. The result of Sargan test documents an insignificant value



TABLE 4 Regression results.

Variable	(1)	(2)	(3)	(4)	(5)
DOM	-0.272*** (-3.214)				-0.132** (-1.985)
ASIA		-0.207* (-1.768)			-0.042* (-1.692)
WEST			0.289* (1.894)		0.054* (1.714)
THV				-0.779*** (4.817)	-0.311*** (3.429)
ROA	-0.001 (-1.288)	0.005 (1.486)	-0.008 (1.322)	0.001 (1.290)	0.001 (1.142)
SIZE	0.195*** (2.983)	0.194*** (3.189)	0.197*** (3.197)	0.194*** (3.165)	0.197*** (3.811)
LEV	-0.003 (-0.412)	0.002 (0.539)	-0.003 (-0.497)	-0.002 (-0.548)	-0.001 (-0.348)
AGE	0.001 (1.233)	0.003 (1.258)	0.002 (1.271)	0.003 (1.280)	0.002 (1.315)
AUDIT	0.261*** (3.501)	0.291*** (3.649)	0.265*** (3.619)	0.288*** (3.519)	0.278*** (3.822)
Year fixed-effect	Yes	Yes	Yes	Yes	Yes
Industry fixed-effect	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.122	0.118	0.118	0.120	0.127
F-Stat	48.267	46.834	46.524	47.757	41.757
Prob. (F.stat)	0.000	0.000	0.000	0.000	0.000

Note: DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation. The t-statistics are reported in parentheses. \*, \*\*, \*\*\*, represent significance at 10%, 5%, and 1%, respectively.

( $p > .1$ ). This result indicates that the instruments of the GMM are valid. The system GMM result reports that water disclosure of year<sub>*t*-1</sub> positively and significantly influences the level of water disclosure in year<sub>*t*</sub>. The other result of Table 6 finds that the independent variables have the consistent results.

## 5.5 | Further analysis

This study conducts further testing to examine institutional shareholders' role in water disclosure based on industry sensitivity to water. It is anchored by previous studies that find higher risk industry tends to disclose more information about water, and vice versa (Burrill et al., 2016; Yu et al., 2020). Hence, this study divides the sample industry into two groups, namely higher and lower water risk industry. This study uses industry classification provided by IDX. The higher water risk group consists of non-cyclical consumers, basic materials, energy, infrastructure, and property and real estate industry. The remaining industries are categorized as lower water risk industry. Table 7 shows the regression results of institutional shareholders on water disclosure for these two groups.

In terms of the higher water risk industry, the result reveals that institutional shareholders do not encourage water disclosure although companies are classified as water-sensitive industry. It is evidenced by the negative and significant coefficient of domestic ( $\beta = -.763$ ,  $p < .01$ ), Asia ( $\beta = -.560$ ,  $p < .01$ ), and tax haven institutional investors ( $\beta = -.414$ ,  $p < .01$ ) on water disclosure. However, there is only Western institutional shareholders who have positive and significant relationship to water disclosure in higher water risk industry ( $\beta = .110$ ,  $p < .01$ ). This indicates that Western shareholders encourage water disclosure because they are more concerned with sustainability practices (Haniffa & Cooke, 2005; Oh et al., 2011). The other reason is that Western investors are committed to invest in sustainable business so that they need water information to make sure that the companies are in the right track when the investors make investment in higher water risks companies. In the lower water risk industry group, institutional shareholders have a negative and insignificant effect, except investors from tax haven countries that have a significant influence. The findings indicate that institutional shareholders do not place their attention on water stewardship and disclosure in the companies with lower water risks.

TABLE 5 Robustness check.

Variable	(1)	(2)	(3)	(4)	(5)
DOM	-0.204*** (-3.199)				-0.031** (-2.265)
ASIA		-0.122* (1.772)			-0.012* (-1.727)
WEST			0.083** (2.235)		0.025* (1.762)
THV				-0.524** (-2.315)	-0.142*** (3.123)
ROA	0.007 (0.968)	0.011 (0.769)	0.006 (0.830)	0.009 (0.893)	0.001 (1.012)
SIZE	0.147*** (4.174)	0.147*** (4.237)	0.148*** (4.312)	0.147*** (4.139)	0.197*** (3.287)
LEV	-0.008 (-0.850)	-0.005 (0.811)	-0.007 (-0.799)	-0.007 (-0.705)	-0.001 (-0.953)
AGE	0.006 (1.276)	0.001 (1.124)	0.005 (1.178)	0.001 (1.462)	0.001 (1.135)
AUDIT	0.115** (2.185)	0.134*** (2.703)	0.121** (2.264)	0.134*** (3.105)	0.091*** (2.923)
Year fixed-effect	Yes	Yes	Yes	Yes	Yes
Industry fixed-effect	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.098	0.094	0.094	0.096	0.116
F-Stat	37.803	36.337	36.036	37.092	36.129
Prob. (F.stat)	0.000	0.000	0.000	0.000	0.000

Note: Water disclosure is measured using water disclosure guideline from GRI; DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation. The t-statistics are reported in parentheses. \*, \*\*, \*\*\*, represent significance at 10%, 5%, and 1%, respectively.

## 5.6 | Discussion

It is a fact that institutional shareholders hold 73.15% of shares in Indonesian listed companies (CNN Indonesia, 2015). Therefore, institutional investors have a higher level of influence on managers in deciding on water disclosure practices. Garanina and Aray (2020) and Nagata and Nguyen (2017) have stated that the origin region of investors has a different culture and attitude toward CSR-related disclosure. Hence, this study aims to examine the effect of the origin region of institutional investors on water disclosure in Indonesian listed companies.

Our first finding reveals that domestic investors have a negative influence on water disclosure practices. This finding supports the previous studies that companies with higher domestic ownership have lower performance than those with foreign ownership (Bamiatzi et al., 2017; Lindemanis et al., 2019). The possible reason is that there is serious information asymmetry problem experienced by domestic investors as they easily collect corporate information. In addition, our finding implies that domestic investors do not want to press firm's managers to disclose more information. It is because domestic

investors tend to maintain good relationship with the managers. As the investor and investee are from the same country, we assume that there is negotiation between domestic shareholders and management to determine which aspect of the company's activities will be disclosed in corporate reports. On the other hand, they may also recognize that CSR-related activities are costly which can potentially reduce the potential return achieved by the investors (Ilyas et al., 2022). Hence, domestic investors do not have intention to confront the managers to perform and disclose more water information. We argue that the CSR-related practice and disclosure regulation is weak although CSR practice and disclosure is mandatory. It is because Indonesian government does not provide specific disclosure guidance so that companies can freely choose the social and environment information that will be disclosed (Cahaya et al., 2017). The lack of disclosure guidance in Indonesia allows companies to disclose at a lower level. Unfortunately, this lower level of disclosure have satisfied the requirement of CSR regulation in Indonesia. It is therefore they do not press managers to make higher level of water disclosure.

Our empirical evidence reveals a negative and significant relationship between Asian institutional shareholders and water disclosure.

**TABLE 6** Results of the system GMM.

Variable	Coefficient	p-value
WDI <sub>t-1</sub>	0.265***	.000
DOM	-0.0648*	.087
ASIA	-0.207*	.051
WEST	-0.041	.743
THV	-0.048**	.043
ROA	0.026	.712
SIZE	0.286***	.000
LEV	-0.102	.682
AGE	0.233**	.020
AUDIT	0.328**	.015
AR (1)	-1.930*	.054
AR (2)	0.120	.906
Sargan test	9.570	.144

Note: WDI<sub>t-1</sub> = One-year lag of water disclosure index; DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation. \*, \*\*, \*\*\*, represent significance at 10%, 5%, and 1%, respectively.

Our explanation is based on Sharma (2013) that suggest CSR practices in Asia are strongly dominated by classical philanthropy, such as building schools and health services. Furthermore, Sharma (2013) explains that philanthropy is a communitarian effort where the community around the company is the primary beneficiary of corporate giving. This suggests that investors from Asia focus on stakeholders who live in the vicinity of the company rather than a wider scope of stakeholders. Although Asian countries have strong commitment to preserve the environment and achieve social welfare, they focus on philanthropic activities rather than sustainability practices and disclosures. For instance, China has water strong water regulation and Chinese investors tend to focus on ESG. However, Chinese institutions are interested in corporate philanthropy because it helps companies to gain socio-political legitimacy in the long run, that leads positive response from stakeholders and political access (Feng et al., 2016). According to Sharma (2013), CSR in Asia normally refers to philanthropy activities. It is different from Western-led CSR that claim CSR is not about corporate philanthropy. It is therefore Asian investors encourage managers to make philanthropic efforts through charitable giving to maintain legitimacy (Deegan, 2002) and gain a positive image (Roberts, 1992). In Indonesia, corporate philanthropy is allowed by the government and can be claimed as CSR-related activities. It can be concluded that Asian shareholders are not interested in sustainability practices and disclosures such as water disclosure.

Another important finding is that Western institutional investors have higher incentives for water disclosure practices and disclosures. Western countries are known as pioneers of CSR practices, so they have more experience and knowledge than countries in other regions. In addition, Western investors may suffer greater asymmetry information

**TABLE 7** Subsampling.

Variable	Higher water risk industry	Lower water risk industry
DOM	-0.763*** (-4.516)	-0.160 (0.854)
ASIA	-0.560 (-3.132)***	-0.018 (-1.324)
WEST	0.110*** (3.323)	-0.580 (-1.297)
THV	-0.414*** (-5.158)	-0.786** (-2.165)
ROA	0.007 (0.942)	0.002 (0.984)
SIZE	0.162*** (2.906)	0.234*** (2.749)
LEV	0.020 (0.872)	0.003 (0.832)
AGE	0.004 (0.812)	0.006 (0.889)
AUDIT	0.508*** (4.865)	0.010*** (4.984)
Year fixed-effect	Yes	Yes
Industry fixed-effect	Yes	Yes
R <sup>2</sup>	0.157	0.119
F-Stat	26.803	11.827
Prob. (F.stat)	0.000	0.000

Note: DOM = Domestic Institutional Investor; ASIA = Institutional investor from Asia countries; WEST = Institutional shareholder from Western countries; THV = Institutional shareholder from tax haven countries; ROA = firm profitability; SIZE = Firm size; LEV = leverage ratio; AGE = Firm age; AUDIT = Auditor reputation. The t-statistics are reported in parentheses. \*, \*\*, \*\*\*, represent significance at 10%, 5%, and 1%, respectively.

problems because of geographic distance (Sari et al., 2021). Hence, they have higher demand for corporate disclosure to reduce this problem (Haniffa & Cooke, 2005). Another reason is that investors from Western countries are committed to invest in sustainable firms. Hence, they actively supervise firm's activities and press the managers to conduct sustainable activities and communicate them into corporate disclosure. Western investors also expect that companies need to consider sustainability goals as long term priorities (PricewaterhouseCoopers, 2023). Water disclosure is important for this investor because it can be used to show company's commitment to preserve water availability. It can also maintain the legitimacy and ensure their investments are safe.

Our finding reports that institutional investors from tax haven countries will reduce the level of water disclosure. The possible reason is that investors from tax haven countries are less likely to promote transparency (Rose, 2021). It is because tax haven countries, such as BVI, have no specific disclosure requirements for disclosing information including ESG reporting (Pape, 2021). In addition, tax

haven countries are not concerned on sustainability practices because these countries focus on inviting foreigners to make investment by offering lower tax rate (Agyenim-Boateng, 2021). Hence, it can be said that investors from these countries are not motivated to press managers to disclose CSR-related information including water information.

## 6 | CONCLUSIONS

This study investigates the effect of institutional shareholders on water disclosure in Indonesian companies. The investigation is based on the fact that the shareholder of Indonesian companies is dominated by institutions, giving institutional shareholders strong power to influence corporate decisions. This study adopts managerial stakeholder theory to explain the relationship between institutional investors and water disclosure. This study classifies institutional shareholders based on their origin region, namely domestic, Asia, Western, and tax haven. Overall, our finding supports managerial stakeholder theory because companies' management will disclose information when primary stakeholders demand corporate information. Based on our findings, Western institutional shareholders provide significant influence to managers to disclose water information. Then, managers make water disclosure to fulfill the demand from these investors. On the other hand, we find that domestic, Asian, and tax haven institutional shareholders have negative influence on water disclosure. This is because domestic institutional investors tend to be more friendly with managers. Asian institutional shareholders are interested in CSR information related to philanthropy activities that focus on building infrastructure and health services. Investors from tax haven countries are not interested in CSR-related practices and disclosures. On the other hand, Western institutional shareholders have a greater interest in water disclosure because they have more experience in performing social and environmental responsibilities and have strong commitment on sustainability issues.

This research contributes to the literature by analyzing the effect of the origin region of institutional shareholders on water disclosure. Although institutional investors are widely investigated in CSR reporting literature, there is a small number of studies that provide empirical evidences about the effect of the origin region of institutional investors on corporate disclosure. Our study also provides several implications. First, the government of Indonesia is recommended to create a corporate sustainability reporting guideline that consists of more water indicators. As a regulator, the government requires companies to prepare social and environmental responsibility reports and provides sustainability indicators that must be disclosed. The absence of guidelines results in higher variation in social and environmental reporting among companies. The guidelines can also reduce the public stigma that social responsibility activities are strongly associated with charitable activities. According to Sharma (2013), CSR activities in Asia, including Indonesia, are dominated by charitable activities for communities around the company. It is therefore the level of water disclosure in Indonesia is relatively low. Second, as institutional investors own a significant amount of Indonesian companies' shares, our results provide insight to minority shareholders regarding the behavior

of institutional shareholders according to their origin region. Our results indicate that institutional investors, except for Western investors, have less awareness of corporate transparency and accountability. Hence, minority investors may face higher asymmetry problems because they are difficult to access corporate information. We suggest that minority shareholders play a more active role in influencing companies to be more transparent and accountable in sustainability issues.

This study has several limitations that can be suggestions for future study. First, this research only investigates water disclosure practices in Indonesian companies, where institutional investors dominate. Our study does not include variable(s) regarding political dimension that explain the relationship between investors' countries and investee's country. Future study is recommended to investigate this variable because it may influences CSR-related practices and disclosures in investee's companies. Second, this study acknowledges that Indonesian companies report more CSR information in sustainability report than annual report. However, there is still small number of Indonesian companies that provide sustainability report on their website. If a company does not provide sustainability report, this study uses annual reports to obtain water information. This study provides suggestions for further research based on its limitations. The next research is expected to consider other corporate disclosure media as data sources because companies may disclose their information on various platforms such as websites, social media, and so forth. Therefore, the disclosure index does not miss corporate disclosure practices.

## AUTHOR CONTRIBUTIONS

**Aditya Pandu Wicaksono** helped in conceptualization, methodology, data curation, investigation, formal analysis, project administration, visualization, writing—original draft, writing—review & editing. **Doddy Setiawan** contributed to conceptualization, methodology, data curation, investigation, formal analysis, visualization, writing—original draft, writing—review & editing.

## FUNDING INFORMATION

The authors declare that no funds, grants, or other supports were received during the preparation of this manuscript.

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**How to cite this article:** Wicaksono, A. P., & Setiawan, D. (2023). Does the origin region of institutional shareholders influence water disclosure in Indonesian companies? *Business Strategy & Development*, 1–15. <https://doi.org/10.1002/bsd2.308>