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Impact of Sustainability Disclosure on Access to Finance: Evidence from ASEAN

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Abstract

The purpose of this study was to investigate how sustainability disclosure affects listed firms' access to finance in the ASEAN region. As sustainability disclosure is not typically voluntary in ASEAN enterprises, this study represents a novel research effort. There are various mixed disclosure practices for sustainability in use. As the study's population and sample, the listed companies in the ASEAN area, which includes Thailand, Cambodia, Singapore, Vietnam, Malaysia, Indonesia, and the Philippines from 2015 to 2020, were chosen. The amount and level of sustainability disclosure were evaluated using the key performance indicator (KPI) of the Global Reporting Initiative (GRI) Standards, while the accessibility to capital was evaluated using the KZ index. This study used a content analysis method based on 42 indicators to calculate the sustainability disclosure index. Three subindices—environmental, health and safety, and social—form the basis of the index. This study used a regression model to determine the overall impact of the sustainability reporting index on financial access. The findings support the negative impacts of the composite sustainability disclosure index on financial access. The study's conclusions make it abundantly evident how economically important it is to integrate corporate sustainability disclosure practices into business strategy. The study's findings are helpful to top management since they may increase sustainability disclosure to improve financial access.

Keywords: Sustainability Reporting; Capital Constraints, ASEAN Region

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Introduction

Businesses are likely to survive under the new economic notion of maximizing wealth since corporations now must consider not just their economic perspective but also their environmental and social perspectives. Additionally, top management in the new wealth-maximizing businesses meets not only the expectations of shareholders in terms of financial returns, but also those of other stakeholders like investors, customers, employees, creditors, suppliers, rivals, society and the community, environmental lobbies, and governors.

Sustainable stock exchanges are central to encourage the corporations providing sustainability actions, activities, and disclosure of accurate information followed by the markets' requirements (Aboud and Diab, 2018). Compared with the traditional reporting which mostly aimed to provide only financial information, sustainability disclosure can better satisfy stakeholders' pursuit of information diversification. Moreover, the new sustainability disclosure does not focus on only shareholders, but it must attract the other stakeholder groups either.

Based on an evaluation of sustainability disclosure by listed companies in each stock exchanges around the world, there are seven quantitative indicators considered by the Global Reporting Initiative (GRI) Standards, which are labor turnover, energy use, carbon emissions, labor spending, work safety, waste management, and water management (Global Reporting Initiative, 2019). In the ASEAN region, although most countries have still been emerging economic countries, their stock exchanges were in high range of the world's stock exchange based on sustainability disclosure in 2019 (Corporate Knights, 2019). Sustainability disclosure does provide benefit not only to stock exchanges, but also can be benefited on the corporate outcomes such as higher performance, better access to finance, and greater reputation (Aouadi and Marsat, 2018) because top-

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managements try to spend the corporate utilities or resources to satisfy stakeholders' demands.

In addition, sustainability disclosure also helps to reduce the conflict of interest and agency costs between top-managements and shareholders. However, considering by efficiency market process and equilibrium between all stakeholders, stakeholder agency theory is used to explained how the corporation balances the relationship between top managements and shareholders as well as the relationship between top-managements and the other stakeholders in inefficiency market by using environmental disclosure in this study.

According to Modigliani and Miller (1958), in ideal markets, finance decisions have no bearing on investment choices. Internal money can be perfectly replaced by external sources. However, some frictions, like information asymmetry and agency conflicts, may appear in imperfect markets. When investors in the capital markets are highly doubtful about a company's prospects, external capital is frequently more expensive than internal capital.

In this scenario, businesses are likely to experience significant financial constraints because of their difficulty in securing outside funding. According to Lamont, Polk, and Saaa-Requejo (2001), financial constraints are described as resistances that prevent corporations from funding all suitable investments. The difficulty to finance an investment may be brought on by credit constraints, the inability to generate external finance via issuance of equity, dependence on bank borrowings, or liquidity constraints. Even though these events are undoubtedly connected with external access to finance, financial constraints are not related to economic distress, financial distress, or bankruptcy risk. As a result, financial constraints serve as a proxy for how restricted a firm's access to outside finance is. Therefore, the severity of liquidity limitations can be lessened by the factors that

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lessen capital market inefficiencies. Sustainability disclosure is taken into consideration in this study as one of these aspects.

However, the level and pattern of sustainability disclosure fluctuate and inconclusive in today's world because (1) As a result of the economy's shift towards technology and IT firms, organizations now disclose less environmental information, and (2) Corporations have reduced their commitment to environmental transparency, including litigation and prosecution of risk and uncertainty, regulation, and sustainability transparency law, as a result of increased enquiry and accountability of released information. Moreover, the prior related literature on the benefit of sustainability disclosure provided conflicts and mixed results.

Majority of studies found a positive correlation between sustainability disclosure and corporate financial performance (Ekwueme et al., 2013; Suttipun and Saefu, 2017) and better access to finance (Cheng, Ioannou and Serafeim 2014). This is because top-managements strongly believe that their stakeholders will still have loyalties, if corporate actions and activities including sustainability disclosure can satisfy their stakeholders' demands and expectations (Suttipun and Saefu, 2017). In addition, disclosure can balance the relationship between top managements and stakeholders and can reduce the conflict of interest between top managements and shareholders as well. On the other hand, Connelly and Limpaphayom (2004) found that the top-managements were more likely to view and feel sustainability disclosure as cost acting to decrease their utilities and resources. But some literature found no relationship between both variables (Hossain and Hammami, 2009).

The ASEAN region is used to investigate sustainability disclosure and the impact of sustainability disclosure on financial constraints for several reasons. First, even though stock exchanges in ASEAN region are high ranking by evaluating the GRI, the CDP, Carbon Knights, and Refinitiv, the literatures of sustainability disclosure were quite scarce compared with the other regions such as North America,

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Europe, and Oceania (Aouadi and Marsat, 2018; Aboud and Diab, 2018). Tran et al. (2021) found that the ASEAN listed corporations have the average sustainability disclosing lower than in European listed firms, although some countries have made sustainability disclosure mandatory or it on a "comply or explain" basis consisting of Malaysia, Indonesia, the Philippines, (Alsayegh et al., 2020), and Thailand (Suttipun and Stanton, 2012).

Secondly, most prior related studies have focused on only each ASEAN member country instead of ASEAN region such as Malaysia (Johari and Komathy, 2019; Kasbun et al., 2017), Thailand (Poowadin et al., 2018; Suttipun, 2021), Indonesia (Burhan and Rahmanti, 2012; Gunarsih and Ismawati, 2019), and the Philippines (Raneses, 2020). Finally, the results of relationship between sustainability disclosure and financial constraints were still mixed and unconcluded in ASEAN region. For example, most previous related literatures found positive relationship between sustainability disclosure and corporate outcomes (Johari and Komathy, 2019; Aouadi and Marsat, 2018; Gunarsih and Ismawati, 2019; Poowadin et al., 2018), while some studies found no relationship between sustainability disclosure and corporate outcomes (Kasbun et al., 2017; Raneses, 2020; Suttipun and Saelee, 2015; Burhan and Rahmanti, 2012). The main purpose of this study is to document the relation between corporate financing policy and a firm's engagement in sustainability disclosure in the ASEAN context. This study constructs a panel dataset for non-financial listed companies in ASEAN namely Thailand, Malaysia, Indonesia, Singapore, and the Philippines covering the period 2015–2020. Specifically, this study aims to examine whether, and in what ways, sustainability disclosure influences financial constraints.

The article in question is conceptually like Khunkaew's (2023) work. This study focuses on the direct impact of sustainability disclosure on financial constraints, unlike the later study, which investigates the relationship among firm disclosure practices and stakeholders' engagement and corporate performance. The findings demonstrate that companies with stronger sustainability disclosure display

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less financial constraint. This study adds to the body of literature by offering some evidence in favor of the claim that the inclusion of sustainability disclosure enhances access to outside financing, hence lessening the severity of capital constraints. The results of this study are anticipated to make several contributions. Firstly, the results will shed light on the extent of sustainability disclosure by listed companies in ASEAN region, and on the relationship between sustainability disclosure and corporate outcomes.

The second objective of the study was to confirm the applicability and relevance of sustainability disclosure to business sustainable development. Finally, the study's results will provide some benefits for regulators, shareholders, top-managements, and the other stakeholders, and help the listed companies in ASEAN region to accelerate the improvement of sustainability disclosure. Six sections make up the remainder of this research. The research area's theoretical literature is reviewed in the next part, which also discusses how the stakeholder-agency theory can be used to describe the scope, intensity, and distribution of sustainability disclosure as well as how it relates to financial constraints. Review of the empirical literature and the formulation of hypotheses are presented in the next part. In the following section, the research design is described. It is divided into three sections: population and sample, data collecting and variable measurement, and data analysis. The empirical findings and discussions are presented in the fifth part. The study concludes with summary and conclusion including contributions and implications, and limitations.

Literature Review

Several theoretical approaches have been used to explain empirical advantages in terms of corporate outcomes providing sustainability disclosure by listed companies including related information reporting such as political economic theory (Huang and Kung, 2010), media agenda setting theory (Brown and Deegan, 1998),

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dependency theory (Amran and Devi, 2008), agency theory (Li et al., 2008; Van Brecht et al., 2018), signaling theory (Almeyda and Darmansya, 2019), stakeholder theory (Joshi and Gao, 2009), legitimacy theory (Brown and Deegan, 1998; ; Suttipun, 2018; Islam and Deegan, 2010), and stakeholder-agency theory (Albitar et al., 2020; Hill and Jones, 1992). Even though there were several theories used in sustainability reporting's studies, stakeholder-agency theory was used to explain the impact of sustainability disclosure on corporate outcomes of listed firms from ASEAN region in this study. This is because stakeholder-agency theory can be used to explain the relationship between top-managements (agents) and shareholders (principles) in inefficient market countries (Hill and Jones, 1992).

Stakeholder-agency theory has been developed by Hill and Jones (1992) based on assumptions that market processes are sustainably different from the underlying financial version of agency theory. Stakeholder-agency theory is explained that each stakeholder is a part of implicit and explicit contracts that can contribute to a corporation. However, top managements are only a group of stakeholders who can enter a contractual relationship with all other stakeholder groups. In addition, the top managers are also only a group of stakeholders who can directly manage and control the decision-making apparatus of the corporation. Therefore, the top managers can be seen as agents of the other stakeholder groups. In the relationship between top managements (agents) and shareholders (principles), information asymmetry, agency cost and conflict of interest between both are always problems in this relationship. Both agents and principles have to reduce these problems. In this situation, sustainability disclosure is supposed to contribute to a reduction of information asymmetry and agency cost.

As the result, sustainability disclosure would be positively correlated to the use for stakeholders' expectations and demands, and the ability to influence corporate outcomes positively such as firm value and firm performance (Velte, 2016). All objectives of this study can be answered by stakeholder-agency theory. For

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example, to investigate the extent, level, and pattern of sustainability disclosure, the theory can be used to explain how top managements try to satisfy their stakeholders' demands by providing sustainability disclosure as corporate actions and activities.

Sustainability Disclosure

Sustainability disclosure divulges about company's activities on the economic, environmental, and social impacts, and it is a tool for communicating its social and environmental performance. The sustainability disclosure is based on the principles of sustainable development. Started in 1980s, the term of sustainable development being mentioned in business contexts and well-known after the Earth Summit in Rio de Janerio in 1992 (Tregidga and Milne, 2006). Sustainable development considers the way to organize and manage human activities to meet those needs without causing damage to the environment, social or economic base (Bebbington et al., 2008), balances between economic, environmental, and social for human well-being in the future generations (Sen and Das, 2013). As the corporates are the main player, their activities have critical effects on society and the environment, and also the corporate actions are important for long-term sustainable development.

Corporation undertakes the sustainability disclosure to reduce information gap to their stakeholders, increased transparency, maintain their competitiveness (Suttipun, 2021), build image and reputation (Bebbington et al., 2008), and survival in the long term (Luken and Stares, 2005). Moreover, disclosing about corporate social responsibility information is one of the corporate management tools for communicating, their impacts to stakeholders (Coetzee and Staden, 2011; Mousa, 2010) and create intangible resource. Therefore, the corporation will use sustainability disclosure as a strategic tool to manage their stakeholders. The sustainability disclosure mostly applies or aligns with Global Reporting Initiative (GRI) guidelines which provide guidance on contents and implementation. GRI guidelines are one of the most popular in relation to report corporate economic,

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social, and environmental performance (Laskar, 2018) and now is in the GRI standard version.

However, the way to measure sustainability disclosure performance for comparing across the business, it should be some ranking system. On one hand, there are many studies that examine sustainability reporting especially in the global area. For example, the United Kingdom has high level of social and environmental disclosure with mandatory requirements (Romero et al., 2019), including mandate of integrated reporting in South Africa (Romero et al., 2019). Furthermore, in Spain, Denmark, Sweden, Finland, Portugal and France have to report on environmental issues as adopted the accounting legislation under the European recommendation (Criado-Jiménez et al., 2008). As a result, during 2001–2013, in Sweden, Finland, Spain, and Italy have the percentage of publishing sustainability report as 50.9%, 35.9%, 33.3%, and 24.1% respectively (Miralles-Quiros et al., 2017).

On the other hand, the studies were still small amount in ASEAN and showed the low number of disclosure and low quality. ASEAN corporations have the average sustainability disclosing lower than in European corporations, even though some countries, have made sustainability disclosure mandatory or it on a "comply or explain" basis, such as Malaysia, Singapore, the Philippines (Alsayegh et al., 2020), and Thailand (Suttipun and Stanton, 2012). Therefore, the studies will be in a limited area. With the deep consideration in the sustainability disclosure without information in the database, there have been the studies in the separated country such as in Thailand, Suttipun (2021) studied the ESG disclosure in annual report from 2015–2019, found the increasing trend during the period. Petcharat and Zaman (2019) examined sustainability disclosure in integrated reporting of Thai listed 50 largest companies and found the reports emphasized in the use of natural resources (including material, energy, water and air) and skills improvement topics. In Malaysia, there have been many previous studies examined the relationship between ESG and firm performance that showed mixed results (Alsayegh et al., 2020; Amran

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et al., 2012; Zainon et al., 2020). As the limited research and mixed results about the sustainability reporting in ASEAN, this topic will be examined.

Sustainability Disclosure and Financial Constraints

Modigliani and Miller (1958) argued that, in an efficient market, internal and external sources of funding are perfect substitutes. As a result, companies can raise external capital at a price that is competitive with internal funding to finance their investment objectives. The capital markets do experience some friction, though, and this friction leads to financial limitations. Financial limitations are obstacles that prohibit the company from funding all targeted investments, according to Lamont et al. (2001). The paper goes on to make the case that credit restrictions, the inability to borrow, the inability to issue equity, reliance on bank loans, or illiquidity of assets may be to blame for this inability to secure financing.

One of the market imperfections that leads to financial constraints is asymmetric information. Businesses must get external financing at a premium in order to compensate for potential "lemons" concerns for investors due to the gap between internal and external financing costs brought on by the asymmetry of knowledge between management and investors (Myers and Majluf, 1984). Due to internal funding constraints, investment prospects may be limited in this situation, forcing constrained businesses to abandon lucrative initiatives.

By eradicating asymmetric information, extensive disclosure may ease the financial constraints placed on a corporation. The disclosure of a company's environmental risks and policies in annual reports increases information transparency because it informs investors and other stakeholders about how businesses handle sustainability concerns like the costs of lowering pollution, getting rid of toxic chemicals, and waste management. It also reduces investors' ambiguity about regulatory interventions, fines, and penalties. Dhaliwal et al. (2011) found that analyst forecast errors and dispersion are lower at companies that provide more

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extensive disclosures about their corporate social responsibility. More recently, Wang et al. (2016) show that due to stringent regulations on public equity financing, bank loans are a crucial source of capital in China. Banks typically require a third-party guarantor to secure a loan; this person is responsible for repaying the loan if the borrower defaults. A similar pattern was found by Francis et al. (2005) who found that firms with higher external financial requirements disclose more and hence levy lower borrowing rates. Goss and Roberts (2011) discover proof that banks levy less for companies performing better in terms of corporate social responsibility. In conclusion, this study makes the claim that companies with more thorough sustainability disclosure will experience less financial constraints.

In ASEAN region, although there were several prior related studies on the relationship between sustainability reporting and corporate outcomes such as Malaysia (Johari and Komathy, 2019; Kasbun et al., 2017), Thailand (Poowadin et al., 2018; Suttipun and Saelee, 2015), Indonesia (Burhan and Rahmanti, 2012; Gunarsih and Ismawati, 2019), and the Philippines (Raneses, 2020), the results of relationship between sustainability disclosure and corporate outcomes were still mixed and unconcluded in ASEAN region. This may be because year and obligation of sustainability disclosure are different in each country, although they are in the same region. For example, Indonesia has regularly started as the first country to provide sustainability disclosure in 2006, followed by Thailand and Malaysia in 2012, and the Philippines in 2016 (Tran et al., 2021).

According to the literature above, this study aims to clarify the relationship between sustainability disclosure and capital constraints. Therefore, the study developed the following hypothesis.

H1: There is a negative relationship between sustainability disclosure and financial constraints.

Research Methodology

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Population and Samples

To test the influence of sustainability disclosure on financial constraints, listed companies in the ASEAN region were used as population in this study because Thailand, Malaysia, Indonesia, Singapore, the Philippines, Vietnam, Brunei, Cambodia, Lao, and Myanmar have become ASEAN Economic Community (AEC) since 2016 to create a single market and production base for free flow of goods, services, investment, capital, and skill labor within ASEAN member countries. However, the initial samples consisted of 35 firms from seven ASEAN countries which are Thailand, Malaysia, Indonesia, Singapore, Vietnam, Cambodia and the Philippines. The reason of this sample is that the Cambodia Securities Exchange was incorporated on 23 February 2010. There are only five companies which provide their annual reports on their respective stock exchanges. Moreover, this study also excluded the listed companies that were registered in the financial or banking industry and any fund sector. After applying the condition above, 210 firm-year observations were adopted as the samples in this study. The final samples were balanced panel data.

Data Collection and Variable Measurement

Data collection was covered from 2015 to 2020 from their annual reports on their respective stock exchanges. To quantify the qualitative and quantitative information published by the companies that were selected in terms of sustainability disclosure, this study employs content analysis (Martinez-Ferrero et al. 2016). An index for sustainability disclosure was developed based on GRI standards. In the appendix's Table A1, information on the sustainability disclosure index is given. It also provides information on social, environmental, health, and safety indicators. 42 indicators altogether make up the index. To quantify data measured by a variety of factors, such as environmental, health and safety, and social elements, scoring methodology based on content analysis procedure is utilized. Based on an unweighted

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methodology, no group is given any priority. When information is disclosed, a code of "1" is assigned, and when it is not, a code of "0" is assigned. Ehsan et al. (2018) and Malik and Kanwal (2018) also employed similar techniques.

Financial constraint is the response variable, and the KZ Index is used to measure it (Kaplan and Zingales, 1997), This measurement is obtained by adding linearly the five accounting ratios of cash holding to total capital, cash flow to total capital, debt to total capital, dividends to total capital, and market to book ratio. Following Cheng et al. (2014), the "KZ Index" in this study is determined as follows:

$$KZ\ Index = -1.002\frac{CF_{it}}{A_{(it-1)}} - 39.638\frac{DIV_{it}}{A_{(it-1)}} - 1.315\frac{C_{it}}{A_{(it-1)}} + 3.139LEV_{it} + 0.283Q_{it} \quad (1)$$

In the equation above, "CF" stands for cash flow, "A" for total assets, "DIV" for cash dividends paid by the company in the current year, "C" for cash balances, "LEV" for the level of leverage, and "Q" for the market value of equity. The KZ index's greater value, according to the calculation, implies that a corporation has more financial access restrictions. Finally, corporate characteristics—including company size, business risk (leverage), capital expenditure, and firm year—were also employed as control variables in this study.

Data Analysis Techniques

Descriptive analysis by mean and standard deviation was used to assess the scope, level, and pattern of sustainability disclosure of publicly traded companies from the ASEAN region between 2015 and 2020 as the first objective. This study employed Ntim and Soobaroyen (2013) research technique of using three-panel data techniques—the pooled ordinary least squares (OLS), fixed and random effect model—to compensate for potential unobserved heterogeneities at firm-level. To account for the heterogeneity among the listed companies in a sector, this analysis used panel random-effect regression.

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Due to the nature of the data, which cooperated for time-series and cross-sectional data observations, the study used a balanced panel data analysis. The random effect model assumes that there is no relationship between individual effects and independent variables. According to fixed effect, each person's regressors' intercepts and slopes are comparable (Han and Brooks, 2014). The Hausman test has also been used to determine whether of the two models—fixed or random—is the better option.

The goal of the reporting is to examine how sustainability disclosure is relevant for investors by affecting reporting company's access to finances. To achieve this goal, this study utilized regression model.

$$KZ\ Index_{it} = \beta_o + \beta_1 SDI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 CAPEX_{it} + \beta_5 YEAR_{it} + \beta_6 IND_{it} + \varepsilon_{it} \quad (2)$$

Where KZ Index is the financial constraints measure tool; SDI is the sustainability disclosure index, SIZE is the firm size, LEV is the firm leverage, CAPEX is the capital expenditure, IND is the industry and YEAR is the time. The above model include a (ε) is the disturbance term. In the model, (i) represents a firm and (t) refers to the time.

Empirical Results and Discussions

Descriptive Analysis of Model Variables

To test the influences of sustainability disclosure on access to finance of listed companies in ASEAN region, firstly, descriptive analysis was used to describe mean and standard deviation of variables used in this study. Table 1 shows that the dependent variable of the study that is financial constraints calculated by KZ Index has a mean of 15.509 and standard deviation of 6.458, implying that significant variation exists across firms regarding the financial constraints. The mean value of sustainability disclosure index is 46.001, and its standard deviation is 16.810. In

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particular, the distribution ranges from 8 for the least disclosure to 87 for the most disclosure firm. Firm size has a mean value of 1.07+12 and its standard deviation is 3.02e+12. Financial leverage has a mean value of 2.219 and its standard deviation is 1.483. Capital expenditure has a mean value of 4.72e+10 and its standard deviation is 1.93e+11. The market value of the equity has a mean value of 2.25e+11 and its standard deviation is 8.26e+11.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
SDI	46.00143	16.81019	8	87
SIZE	1.07e+12	3.21e+12	27478	2.05e+13
CAPEX.	4.72e+10	1.93e+11	-8922	1.39e+12
LEV.	2.219999	1.483591	.5080992	11.07115
Equity	2.52e+11	8.26e+11	100	3.91e+12
KZ	15.50954	6.45859	3.453132	27.73327

Correlation Matrix

Table 2 shows correlation analysis of the study. It shows that sustainability disclosure index has negative correlation with financial constraints. Given that firms which are actively engaged in sustainability disclosure faced lower cost of capital. Firm size, equity and capital expenditure as control variables have positive correlation with cost of capital while leverage has negative correlation.

Table 2. Correlation Analysis

	SDI	Size	CAPEX.	LEV.	Equity	KZ
SDI	1.0000					
Size	-0.1355**	1.0000				
CAPEX.	-0.3962***	0.6686***	1.0000			
LEV.	0.1120*	-0.1453**	-0.1388*	1.0000		

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Equity	-0.2508***	0.5880***	0.8910***	-0.1499**	1.0000	
KZ	-0.1065*	0.5909***	0.4416***	-0.1541**	0.5553***	1.0000

Note: *, **, *** denotes 1%, 5% and 10% significance level respectively.

Multivariate Results

The study has performed the following diagnostic tests before performing the revgression analysis.

Breusch–Pagan Lagrange Multiplier (LM) Test: The suitable estimation for this study's analysis is explained in Table 3. As the chi square value is significant at the 5% level of probability, the recurring value of the test demonstrates that the random effect model was an appropriate choice for the data analysis.

Table 3. Breusch–Pagan Lagrange Multiplier (LM) Test

	Statistic	**p-value**
Cross-section χ2	460.57	0.000

Test Result for Autocorrelation: Since the null hypothesis developed was that the data do not exhibit autocorrelation, Table 4 shows that the stated probability value (0.1189) indicates that the data are free of such a problem, the results showed that there is no autocorrelation issue.

Table 4. Wooldridge Test for Autocorrelation

Statistics	**p-value**
F = 2.559	Prob > F = 0.1189

Heteroscedasticity Statistics: Table 5 illustrates whether or not the data is heteroscedastic. As the p value is less than 5%, the results demonstrate that the data is homoscedastic and free of the heteroscedasticity problem. As a result of the equal variance assumption, further analysis of the data is possible.

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Table 5. Breusch–Pagan/Cook–Weisberg Test for Heteroscedasticity

Statistics	p-value
χ^2 (1) = 0.06	Prob > χ^2 = .8034

Hausman Test: The procedure for selecting the appropriate estimating technique—fixed effect vs. random effect—is described in Table 6. When compared to a fixed effect model, the findings clearly show that random effect is the better estimator. The hausman test revealed that the probability value is not statistically significant, confirming the random-effect model's suitability as the best model for forecasting the study's findings.

Table 6. Hausman Test

Statistics	p-value
χ^2 (1) = 4.92	Prob > χ^2 = .0853

Regression Analysis:

The results estimating model, which is developed to analyze whether sustainability disclosure either increases or attenuates financial constraints, are presented in Table 7. The results show that the coefficient on SDI is negative and significant, supporting the hypothesis. Given that reporting firms about their sustainability are characterized by lower cost of capital (Nandy and Lodh 2012), more equity issues (Girerd-Potin, Jimenez-Garces and Louvet 2011), and lower capital expenditure (Jui Hsu and Chen 2015).

The coefficient on sustainability disclosure index is negative and highly significant suggesting that firms with better sustainability disclosure face less capital constraints. Since larger corporations have better sustainability disclosure and lower capital constraints (Ioannou and Serafeim, 2012; Hadlock and Pierce, 2010), the study controls size of the firm as well as industry, country, and year. Specifically, firms

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that are less capital constrained might invest in more sustainability disclosure initiatives and achieve better performance (Hong et al., 2011).

The first finding regarding sustainability disclosure is consistent with earlier research by Sharma and Fernando (2008), Dhaliwal et al. (2012); sustainability disclosure receives favorable attention from the financial market subjects, which ultimately improves access to financing by better informing investors. The results are consistent with those of Cheng et al. (2014), who point out that enterprises that voluntarily share sustainability information have less trouble getting financing.

These results add to previous findings about other disclosure features, which further our understanding of the subject. Sustainability disclosure, according to Healy and Palepu (2001) and Kim et al. (2014), minimizes information asymmetries, forecast mistakes, and information risk, resulting in better access to financial resources, or fewer capital constraints. The findings are consistent with the hypothesis that stakeholder views are influenced by sustainability disclosure (Luo et al., 2015). In terms of the control variables, business size has a favorable impact on the severity of financial restrictions.

Table 7. Regression Analysis

KZ	Coef.	Std. Err.	t	p-value
SDI	-0.0202474	0.0093772	-2.16	0.031
Size	1.79e-13	1.01e-13	1.78	0.076
CAPEX	-6.76e-12	2.25e-12	-3.00	0.997
LEV.	-0.3141302	0.1187484	-2.65	0.008
Constant	16.94645	1.074003	15.78	0.000
R^2	40.2			
Prob > F	0.0000			

Summary and Conclusion

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To answer the research question that were there any possible influences of sustainability disclosure on access to finance of the listed companies in ASEAN region, this study found negative impact of sustainability disclosure index on financial constraints. Using control variables as corporate characteristics, the study found a positive relationship between size of company, while there was a negative relationship between risk and capital constraints.

This study's findings provide several contributions and implications. In terms of theoretical contributions, the results are demonstrated that stakeholder-agency theory can be used to explain the reason of sustainable development information disclosed by listed companies in ASEAN region, although the disclosure is still voluntary reporting in this region. The study will close or decrease the research gap be analysis the link between sustainability disclosure and capital constraints.

The results contribute database of sustainability disclosure in ASEAN Region where has abilities of competitive advantage, production capacity and economic development as well as the other regions in the world. In terms of practical implications, top managements may be able to encourage sustainability disclosure to enhance their access to finance. The findings also emphasize the needs to have sustainability regulations to promote sustainable development in ASEAN region as well as the other regions.

However, limitations are mentioned in this study. The study should examine the mediating role of agency costs, as well as information asymmetry in the relationship between sustainability disclosure and financial constraints. Finally, the study focuses on listed companies on the capital markets of seven countries in ASEAN region where there are ten countries, which are member of ASEAN. Therefore, to close the limitations of this study, the suggestions for future study are to investigate sustainability disclosure of listed companies in the other ASEAN member countries.

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APPENDIX

Table A1. Sustainability Reporting Index

Environmental indicators	
1	Materials used by weight or volume
2	Recycled input materials used
3	Energy consumption within the organization
4	Energy intensity
5	Reduction of energy consumption
6	Water withdrawal by source
7	Water sources significantly affected by withdrawal of water
8	Water recycled and reused
9	Direct greenhouse gas (GHG) emissions
10	Energy indirect GHG emissions
11	GHG emissions intensity
12	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions

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13	Water discharge by quality and destination
14	Waste by type and disposal method
15	Significant spills
16	Extent of impact mitigation of environmental impacts of products and services
17	Non-compliance with environmental laws and regulations
18	New suppliers that were screened using environmental criteria
19	Negative environmental impacts in the supply chain and actions taken
20	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms
Health and safety indicators	
1	New employee hires and employee turnover
2	Benefits provided to full-time employees that are not provided to temporary or part-time employees
3	Minimum notice periods regarding operational changes
4	Workers representation in formal joint management—worker health and safety committees
5	Types of injury and rates of injury, occupational diseases, lost days, absenteeism, and number of work-related fatalities
6	Workers with high incidence or high risk of diseases related to their occupation
7	Average hours of training per year per employee
8	Programs for upgrading employee skills and transition assistance programs
9	Percentage of employees receiving regular performance and career development reviews
10	Diversity of governance bodies and employees
11	Ratio of basic salary and remuneration of women to men
12	New suppliers that were screened using social criteria
13	Labor practices grievance mechanisms
Social indicators	
1	Operations with local community engagement, impact assessments, and development programs

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2	Operations with significant actual and potential negative impacts on local communities
3	Operations assessed for risks related to corruption
4	Confirmed incidents of corruption and actions taken
5	Political contributions
6	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices
7	Non-compliance with laws and regulations in the social and economic area
8	New suppliers that were screened using social criteria
9	Grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms