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# Sustainability Disclosure in The Malaysian Construction Sector: The Effect of Community and Media Legitimacies

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## Abstract

**Research Aims:** The objective of the study is to examine the effects of stakeholder pressure on sustainability disclosure (SD). The study includes the effect of community on SD when the company considers the media as one of the legitimate stakeholders.
**Design/Methodology/Approach:** Stakeholder legitimacy is evaluated using SD via content analysis based on panel data samples from the construction and property sectors.
**Research Findings:** It was found that legitimacy is an antecedent and has a positive relationship with SD. Furthermore, this relationship between community legitimacy and SD is stronger when mediated by media legitimacy.
**Theoretical Contribution/Originality:** This study shows the effects of the legitimacy attribute on SD instead of the influence of stakeholders in general (regardless of the legitimacy concept) and the incremental value for companies to include the interest of the media in SD apart from the communities alone.
**Managerial Implications in the South East Asian Context:** It guides managers in forming a comprehensive stakeholder engagement plan and budget to increase company value. This illustrates to the managers the motivation behind making disclosures about the media in the SD more so in this rapid social media where fake and misleading information threatens the public trust in Southeast Asia.
**Research Limitations & Implications:** The study does not include power and urgency factors along with legitimacy.

**Keywords**: Stakeholder Legitimacy, Stakeholder Salience Theory, Stakeholder Theory, Sustainability Disclosure, Construction, Endogeneity



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# INTRODUCTION

The latest data shows that the construction industry accounts for 37% of carbon dioxide emissions and keeps on rising with the large growth projected in the building sector (United Nations Environment Programme, 2021). Reducing carbon emissions from the construction industry is essential for the Paris Agreement target of reducing global warming to below 2°C by 2050. One of the ways to promote corporate accountability for the environment is through sustainability disclosure (SD) to stakeholders. Evidence, albeit scant, suggests that the construction sector lags behind the other environmentally sensitive industries in SD (Siew et al., 2013). Thus, using the construction industry, this study investigates the factors that may influence a company's decision to make SD.

Stakeholders are important in promoting sustainable practices and ensuring that organisations are held accountable for their sustainability performance. On the one hand, stakeholders including communities and the media, can exert pressure on an entity to be proactive in sustainability practices and hence increase sustainability performance, stakeholder trust, and engagement. Stakeholder pressure increases innovation for sustainable products in the market (Fischer et al., 2020; Freudenreich et al., 2020). Furthermore, in order to avoid a reputation crisis, companies may exercise strategic actions to acquire and maintain the firm's legitimacy. Many of these lines of findings use stakeholder theory as underpinning theory for their studies (Khan & Sukhotu, 2020; Kim et al., 2021; Zhang & de Vries, 2022; Meng et al., 2023). Stakeholder theory emphasises the importance of a company to consider the interests of all stakeholders, regardless of whether the stakeholders are legitimate or not legitimate to the firm (Harrison et al., 2019). The legitimacy (socially desirable, proper, or appropriate within the social system) attributes focus on dynamic relationships and mutual consensus between stakeholders and the company (ElWakeel & Andersen, 2020; Guðlaugsson et al., 2020).

Understanding this issue is important because the construction industry has always been an important part of the overall economy, especially emerging economies, where the focus is on infrastructure, and public spending can be used to increase the GDP. For example, in Malaysia, the construction market size was $27.7 billion in 2022, which accounts for 3.4% of the GDP. Moreover, the construction industry is also expected to become an engine of economic growth and recovery globally after the pandemic. Thus, if the effects of communities and media legitimacies can be substantial on SD, then efforts can be made to increase community and media legitimacies in sustainability issues.

We analysed 420 observations of 140 publicly listed companies in Malaysia over three years (2015 to 2017). The results reveal that community and media legitimacies have direct effects on SD. This result is consistent after we control for factors that can explain SD and endogeneity bias. The result lends support to the theory. We selected the construction sector for several reasons. Firstly, companies in the construction industry often involve activities which harmful to the environment, such as damage to natural resources, significant fuel energy consumption, increasing pollution and waste generation (Lu et al., 2016; Švajlenka & Kozlovská, 2020). Secondly, evidence suggests a lack of emphasis on sustainability practices among practitioners and there is heterogeneity in the sustainability of practices among companies in the industry (Myers, 2005; Jones et al., 2010; Zuo et al., 2012; Siew et al., 2013). Thirdly, the above evidence goes against conventional wisdom, when environmentally sensitive industries have been proven to record higher financial performance if they disclose more SD than non-environmentally sensitive industries (Qureshi et al., 2020). Finally, the climate change risk has a direct impact on construction activities, which concerns stakeholders, particularly communities. Any issue that affects communities can attract media attention. Thus, such an industry can provide the best setting to investigate the management's legitimacy reactions in the form of SD to the community and media legitimacies.

The previous studies using Freeman's stakeholder theory have emphasised the determinants of SD such as the types of stakeholders and companies' performance (Hussain et al., 2018; Karaman et al., 2018; Buallay, 2020), corporate governance (Hapsoro & Fadhilla, 2017; Zheng et al., 2014; Rustam et al., 2019; Raimo et al., 2020; Jamil et al., 2021) or individual factors (Tawiah & Boolaky, 2019; Guo et al., 2021; Munjal & Sharma, 2023). Thus far, studies using Mitchell's power-legitimacy-urgency matrix that emphasise on the role of legitimacies as stakeholders' attributes that can influence SD have been limited except for Thijssens et al. (2015) who have studied the effect of NGOs on SD. This study extends studies on the effects of secondary stakeholders which are the communities and the media. Secondly, most research using stakeholder salience theory has investigated how managers prioritise stakeholders using case studies, interviews, and questionnaire research methods. The present study analyses information from annual reports to examine the output of managerial decisions in an objective and unbiased manner.

This paper is organised in this order, first, it explains the relatedness between communities, media legitimacies, and SD. Then, the methodology section describes sampling, instruments for content analysis, and panel data regression model. The research hypotheses are all described in the methodology section. After that, the results are discussed and presented. The study's conclusions, their practical contribution, and plans for further research are presented in the last section.

## LITERATURE REVIEW

### *Stakeholder Legitimacy*

Apostol et al. (2021) and Erdiaw-Kwasie (2018) claim that sensemaking processes take place "behind the scenes" and involve a variety of stakeholders in the decision to make corporate disclosure. Such procedures are started when a crisis takes place, destabilising managers' pre-existing conceptions of sustainability. Additionally, managers bring their own vision and perspective through sensemaking procedures. Sensemaking is described as the conceptual frameworks or models that managers use to create the reality of their organisations and understand how the entity interacts with the outside world. The management can use it as a starting point to investigate what it does well and poorly, what the problems it faces and how it should resolve them (Apostol et al., 2021). Individuals, according to Finch et al. (2015), are the micro-level foundation of legitimacy since they collectively impact the social system's norms, rules, and cognitive categories. People's perceptions of legitimacy are influenced by how much faith they place in the veracity of the information they receive from outside sources, such as credible media, credible industry sources, and credible NGOs (Finch et al., 2015). In the sensemaking process, managers frame stakeholders' importance based on stakeholder legitimacy to build trust.

The study argues that there is a relationship between the legitimacy of the community, media, and SD based on several reasons. Fassin (2012) mentioned that stakeholders and companies are generally much more cooperative and tend to reciprocate. Reciprocity shapes trust and obligations of fairness to stakeholders, thus increasing SD. Further, the legitimacy of stakeholders can vary between different types of stakeholders (such as employees, suppliers, media, and communities) due to varying levels of input and output legitimacy (Mena & Palazzo, 2012). Input legitimacy refers to whether or not the firms allow representation of diverse stakeholders with heterogeneous interests to participate in decision-making such as stakeholder dialogue. Output legitimacy relates to the effectiveness and outcomes of stakeholder engagement such as the quality of SD. For example, many times of stakeholder dialogue (input legitimacy) may not always result in the quality of SD (output legitimacy). SD is not only being used by the company to engage with their stakeholders but, it is also being used by the stakeholders to exert pressure.

Further, the legitimacy of stakeholders can also be influenced by their motives and obligations. Stakeholders with a legitimate stake in the company's business activities such as the media and community may develop accountability through direct exchanges. The concept of directness refers to the resource exchanges between both entities in a reciprocity process, thus establishing fairness and obligations towards stakeholders. Overall, the effects of communities and media legitimacies on sustainability reporting are dependent on many reasons, including the reciprocity process, input-output legitimacy, and fairness/obligations. However, increased legitimacy of community and media is generally seen as positive on sustainability reporting. This study asserts that sensemaking involves the managers framing stakeholders' importance based on their desirability, properness, and appropriateness in the social system. This study contributes to the few studies on the concept of stakeholder legitimacy (Parent & Deephouse, 2007).

Santana (2012) defined stakeholder legitimacy as a composite perception by the focal organisation's management of the legitimacy of the stakeholder as an entity, the legitimacy of the stakeholder's claim, and the legitimacy of the stakeholder's behaviour at a certain point in time. For instance, an NGO may be able to exert pressure on the business to change its practises due to the company perceives they have legitimacy because of social status (following on social media) (Perrault & Clark, 2016). Likewise, a company involved with a disaster relief initiative may look unfit with organisational logic as a profit-making organisation. However, given that NGOs fit with this institutional logic, companies often seek to partner with an established NGO.

Some stakeholders' characteristics (e.g. stakeholder types, issue support and social value orientation) will also moderate SD (Céspedes-Lorente et al., 2003; Du et al., 2010). Studies, such as that of Carino et al. (2022) have compared the performance of mediocre and exemplary hospitals on environmental sustainability in food services. The legitimisation of patients in the form of internally documented policies, protocols and work plans helps them overcome competing priorities and time constraints. Herazo and Lizarralde (2016) and Rhee et al. (2021) studied companies' communication with stakeholders during a crisis where they become salient due to urgency. Rassiah et al. (2022) found that customers, regulators, and owners are significantly influenced by managers' environmental awareness and attitudes. Nonetheless, these studies have not examined stakeholders' attributes that the managers perceived based on corporate disclosure. In addition, research on the legitimacy of secondary stakeholders, such as communities and the media, in determining firms' legitimacy is lacking. Thus, this study extends this research stream by examining the influences of specific stakeholders (i.e. community and media legitimacies) and managers' responses to legitimise their actions.

### *Communities as a Stakeholder*

The terms public, society, or community are often used interchangeably and vaguely defined in accountability research. According to Harvey and Schaefer (2001), managers generally see these groups as a homogenous mass with little distinction between them. Several sub-sections of communities are referred to by Dunham et al. (2006) such as communities of place, communities of interest, virtual advocacy groups, and communities of practice. Dunham et al. coins these names to address that communities are those group of the public who company wants to approach be as those who live near the company's radius, targeted recipient for CSR purposes, or advocacy group who is motivated to disrupt the company's goal or professional work groups who shared interests, values, and purpose to facilitate changes in the company. Eikelenboom and Long (2023) regarded the community composed of vulnerable individuals, including minority groups, and those living in poverty, as marginalised stakeholders who need to be engaged to increase the legitimisation of decision-making processes or procedural fairness.

Regardless of the names given, managers tend to have a more precise understanding when addressing local communities, and companies are more likely to communicate within the locality on specific issues such as sewage treatment works or electricity substations and unemployment (Campbell, 2006). Based on Mitchell et al. (1997) approach, Dunham et al. (2006) proposed that communities are legitimate stakeholders and that their power probably depends on many particular variables (such as the issue at hand, the nature of the relationship, and the politics at work). Communities may decide to work with NGOs to draw the managers' attention, which then puts them in the expectant stakeholder category (Baumann-Pauly et al., 2017). However, most of the prior literature has investigated the model and process of community engagements (Fordham & Robinson, 2018; Rahmawati et al., 2019; Eikelenboom & Long, 2023) and paid little attention to the effect of community legitimisation on SD. Hence, the following hypothesis is proposed:

$H_1$: Community legitimacy is positively related to SD.

### *The Media as a Stakeholder*

Meanwhile, this section argues that media plays a crucial role in shaping community expectations (Yekini et al., 2017). This is based on the media-agenda-setting theory that the image and meanings furnished by the media shape the actions of a person or community. The public needs the media to tell them how important the issue is in the "real world", especially because of events that go unnoticed. Unnoticeable events (such as pollution from activities offshore or in remote factories) that the public cannot experience or know about unless the media acts as a channel. The agenda-shaping influence of the media is most clearly visible in the context of unobtrusive events (Islam & Deegan, 2010). Depending on the media, communities may exert pressure on individuals or CEOs of companies to conform to social norms, values, and expectations. Derived from shared beliefs, traditions, and cultural backgrounds, communities demand CEOs to be more environmentally and socially responsible. Our study extends Yekini et al. (2017) by investigating at the impact of media and community interactions on SD.

The media is powerful because it can control public awareness and a company's reputation simultaneously. A company’s reputation is an important asset as it brings future revenue to the company in the form of sales. Therefore, the media has been used as a medium to amplify the effect of a company’s sustainability practices (Gao et al., 2023). Thus far, most of the research in this area is concentrated on the use of social media as a tool for stakeholders’ engagement (Giacomini et al., 2020; Khanal et al., 2021; Pizzi et al., 2021), and little is understood on the role of media as a stakeholder, which is viewed as important for SD. Therefore, this study suggests the following hypothesis based on the discussion above:

$H_2$: Media legitimacy is positively related to SD.

## RESEARCH METHOD

According to the Department of Statistics Malaysia, 147 construction companies are involved in building infrastructure, such as roads, bridges and residential or commercial properties. This study eliminated seven companies with missing data from 2015 to 2017 to obtain a balanced panel. The final sample consists of 140 companies with 420 observations. The study drew from the construction industry only because each industry has its own distinctive characteristics, including maturity (O'Connor & Shumate, 2010), internal competencies, and stakeholder pressure (Patten, 1992; Moore, 2001).

Community, media legitimacies, and SD score were captured based on textual information from the same sustainability report, however, the instruments for these variables are distinct. The instrument for SD made based on indicators relevant to the sustainability theme for the stakeholder group was calculated based on Pérez et al. (2017). This approach is different from that of Wiseman (1982) and Clarkson et al. (2008), in which instruments were based on available sustainability guidelines provided by independent organisations. SD measurement is based on a sustainability theme (column 3 Table 1) similar to ESG, however rather than coding into ESG format, this study use stakeholder format similar to Pérez et al. (2017). We support Pérez et al. (2017)'s argument that this format of measurement should be used because, in contrast to reporting on ESG, reporting to stakeholders is more related to the legitimacy of the stakeholder because the latter are more concerned with strengthening their own legitimacy for their own needs and benefits than for ESG as a whole.

For each stakeholder group, known as a dimension, Pérez et al. (2017) identified sustainability issues relevant to them. Companies were given a value of 0 if information was not disclosed, 1 if only a description could be obtained or 2 if the information was specific and had monetary or quantitative measures for each item. For example, a company could obtain the following score for employee dimension: 0 for three items, 1 for five items and 2 for four items. The total score for employee dimension is 0.541 (13/24). To get to the final score of the company SD, we added the score for all (8) dimensions. In simple say, the score of SD is the summation of the average of the total obtained for each of the dimensions.

Table 1. Instrument for SD Score

<table>
<tr><th>No.</th><th>Stakeholder groups</th><th>Sustainability theme</th><th>Number of indicators</th><th>SD score</th></tr>
<tr><td>1.</td><td>Employees</td><td>Work conditions and the fair treatment of employees.</td><td>12</td><td rowspan="8">Let x be the number of items with a score of 0. Let y be the number of items with a score of 1. Let z be the number of items with a score of 2.<br>Σd = (0 * x + 1 * y + 2 * z) / Number of Items.<br>Thus, SD = Σdi<br><br>d = 0 if the item is not disclosed; 1 if only a brief description can be obtained; or 2 if the report is specific and has monetary or quantitative measures; i represents the stakeholder.</td></tr>
<tr><td>2.</td><td>Customers</td><td>Commercial offering and marketing practices of the company</td><td>11</td></tr>
<tr><td>3.</td><td>Shareholders</td><td>Ethical relationship of the company with its investors and shareholders.</td><td>6</td></tr>
<tr><td>4.</td><td>Regulators</td><td>Compliance with laws and regulations.</td><td>4</td></tr>
<tr><td>5.</td><td>Key suppliers</td><td>Evaluate how the company promotes sustainability along the supply chain.</td><td>7</td></tr>
<tr><td>6.</td><td>NGOs</td><td>Partnership of the company with other organisations devoted to sustainability causes.</td><td>2</td></tr>
<tr><td>7.</td><td>Media</td><td>The management of relationships with the media.</td><td>2</td></tr>
<tr><td>8.</td><td>Communities</td><td>Social, environmental and economic concerns.</td><td>8</td></tr>
</table>

The instrument for community and media legitimacies made from stakeholder salience theory developed by Mitchell et al. (1997) as its theoretical background. Coding instrument for legitimacies consisted of the definitions of stakeholder attributes and their measurement. Legitimacy is defined as how socially desirable, proper or appropriate the stakeholder appears to be within some socially constructed system. We used a dichotomous variable (0,1) for coding purposes to assess whether any of these information disclosed by the sample companies and the score of legitimacy is the summation of these code (Weber & Marley, 2012; Thijssens et al., 2015; Gianfelici et al., 2018). Thus, the total score indicates how much concerns the managers have on a particular stakeholder. For coding purposes, each sentence was matched against two items and coded as 0 or 1 to indicate yes or no, respectively.

i. A stakeholder category (in this study, community or media) is explicitly mentioned in the list, or the map of the corporate stakeholders is included in the SD (Weber & Marley, 2012; Gianfelici et al., 2018).
ii. Stakeholder legitimisation processes in companies, where these processes are reflected in activities, such as formalisation (e.g. presence of formal stakeholder engagement or the presence of social and environmental units) (Weber & Marley, 2012; Thijssens et al., 2015).

Table 2. provides an explanation of the measurements of additional variables.

Table 2. Description of Control Variables

| No. | Variable name | Label | Description |
|---|---|---|---|
| 1. | Return on equity | ROE | Ratio of annual net income to average shareholders' equity |
| 2. | Tobin’s Q | TOBINSQ | Ratio of total market value of equity and the total debt divided by total assets |
| 3. | Size | SIZE | Total assets in Ringgit Malaysia currency |
| 4. | Leverage | LEV | Total debt ratio to the total assets |
| 5. | Company’s age | AGE | Number of years the company has been. listed in Bursa Malaysia from its listing date to 2017 |
| 6. | GRI | GRI | Dummy variable for GRI reporting |

We took into account control variables that are often mentioned in SD-related literature. Good corporate strategy and resource allocation are typically indicated by strong financial performance (ROE and Tobin's Q), which helps businesses establish good SD, especially with regard to groups of financial stakeholders like shareholders, creditors, and external analysts (Thomas et al., 2021; Dincer et al., 2023). The study included leverage, size (related to resources) and company age (related to experience), because previous studies have shown their relationship with SD. Given that GRI increases the overall standards of compliance for environmental practices, we expected that GRI is positively related to SD (Abdullah et al., 2017; Hou, 2019; Buallay, 2020; Rabaya & Saleh, 2022). We used a static panel analysis to test whether community legitimacy (LCOMM) and media legitimacy (LMEDIA) have significant influence on SD, resulting in Model 1. This statistical specification is in line with previous empirical studies (Agle et al., 1999; Eesley & Lenox, 2006). The model accounts for the effect of the individual attribute measures separately.

$$SD = \alpha + \beta_1 \mathrm{LCOMM}_{it} + \beta_2 \mathrm{LMEDIA}_{it} + \beta_3 \mathrm{WINROE}_{it} + \beta_4 \mathrm{LTOBINSQ} + \beta_5 \mathrm{LLEV}_{it} + \beta_6 \mathrm{LSIZE}_{it} + \beta_7 \mathrm{LAGE}_{it} + \beta_8 \mathrm{GRI}_{it} + \epsilon_{it}, \quad (1)$$

Where SD is the sustainability disclosure score; LCOMM is the score of community legitimacy; LMEDIA is the score of media legitimacy; WINROE denotes company performance; LLEV is the company leverage; LSIZE is the company size, LAGE is the age of each company; GRI is a dummy variable for sustainability reporting framework; and "$it$" denotes panel data structure, which is the company and the time.

## RESULTS AND DISCUSSIONS

The diagnostic testing use simple statistics, such as minimum, maximum, mean, median and mode, provides an overview of the data distribution. By this way, values that are outside the range of the possible or are suspicious by using scatterplot and simple statistics can be detected. The control variable (i.e., ROE) is winsorised at the top and bottom 1%, and the other control variables (i.e. TOBINSQ, LEVERAGE, SIZE and AGE) were transformed to natural log. The study also runs coefficient of the agreement, Krippendorff's α and Scott's *pi* to measure the reliability of the coding instruments (Milne & Adler, 1999).

Table 3 depicts the descriptive statistics for SD score for every year from 2015 to 2017 and three company–year observations. The mean values of the SD scores are 2.866 with a minimum of 1.229, indicating that companies targeted to disclose sustainability information from 1 (minimum) to 3 (average) stakeholders only. This result is attributed to each SD's stakeholder category having a maximum value of 1. This indicate that not all stakeholders group being mentioned in SD. Interestingly, the mean increases every year for the last three years (2015, mean = 2.734; 2016, mean = 2.841; 2017, mean = 3.022). This pattern shows that the number of stakeholders covered in the SD increased annually over the observation years.

GRI is a categorical variable for companies using (1) or not using (0) GRI reporting framework in SD. Not many companies (33 out of 420) are using GRI framework for reporting. The substitute for GRI, which is an international framework, another source of reference for companies in preparing SD is the sustainability reporting guide issued by Bursa Malaysia. Company size was measured by the total assets. The data showed that company size has a minimum value of RM 22,367, a maximum value of RM 67,100,000 and a mean value of RM 2,508,734. We used ROE and Tobin's Q as performance indicators. With a mean value of 0.045, the value of ROE from a low of 0.566 to a maximum of 0.476. The mean value of Tobin's Q is 0.967, with a minimum value of 0.367 and a maximum value of 10.241. Company's leverage, which is the total debt to total asset ratio, has a minimum of 0.023 and a maximum of 0.915, with a mean value of 0.447. The age of the company since the company's listing date to 2017 shows a minimum of less than one year to a maximum of 32 years, with a mean of 21 years old. Table 3 explains the variables.

Table 3. Summary of Descriptive Statistics for Dependent and Control Variables (N = 140)

| Variables | Mean | Std. Dev. | Min | Max | Frequency | Percent | Cumulative |
|---|---|---|---|---|---|---|---|
| SD | 2.866 | 0.764 | 1.229 | 5.017 | | | |
| SD2015 | 2.734 | 0.736 | 1.229 | 4.738 | | | |
| SD2016 | 2.841 | 0.733 | 1.229 | 4.957 | | | |
| SD2017 | 3.022 | 0.798 | 1.271 | 5.017 | | | |
| ROE | 0.045 | 0.113 | −0.566 | 0.476 | | | |
| TOBINSQ | 0.967 | 0.751 | 0.367 | 10.241 | | | |
| SIZE | 2,508,734 | 6,434,842 | 22,367 | 67,100,000 | | | |
| LEV | 0.447 | 0.187 | 0.023 | 0.915 | | | |
| AGE | 21.159 | 7.962 | 0.500 | 32.083 | | | |
| GRI | 0.079 | 0.269 | 0 | 1 | | | |
| GRI = 0 | | | | | 387 | 92.14 | 92.14 |
| GRI = 1 | | | | | 33 | 7.86 | 100.00 |

Table 4 shows categorical variables for the main variables under this study, which are community legitimacy (LCOMM) and media legitimacy (LMEDIA). The table shows the frequency of each category of legitimacy in a sample of 140 companies (420 observations), along with the corresponding percentages. If a company does not mention community or media in the map/list of stakeholders, then it is coded as '0'; if a company treats the stakeholder as legitimate, then it is coded as '1', and if a company is highly legitimate, then it is coded as '2'. The result also shows that 105 observations agree that neither community nor media is important for the companies. For the remaining 315 observations, the most common type is legitimate, where 264 companies treat community as a legitimate stakeholder (refer to last column) but not the media (the last row shows 374 companies coded as '0'). Out of the 264 companies, only 34 (12.88%) agree that community and media are their legitimate stakeholders. Exceptionally, 12 companies (23.53%) think that the community is in the 'more legitimate' category. A chi-square test was used to determine the relationship between two categorical variables. These results indicate a statistically significant relationship between the type of community and media legitimacies (chi-square with one degree of freedom = 22.19, p = 0.0000151).

Table 4. Frequency Distribution for Legitimacy of Community and Media (N = 140)

| LCOMM | LMEDIA 0 (Not legitimate) | LMEDIA 1 (Legitimate) | Total |
|---|---|---|---|
| 0 | 105 | 0 | 105 |
| (Not legitimate) | 100.00 | 0.00 | 100.00 |
| 1 | 230 | 34 | 264 |
| (Legitimate) | 87.12 | 12.88 | 100.00 |
| 2 | 39 | 12 | 51 |
| (More legitimate) | 76.47 | 23.53 | 100.00 |
| Total | 374 | 46 | 420 |
| | 89.05 | 10.95 | 100.00 |

Pearson Chi2 = 22.19 Prob = 0.0000151

The first row shows *frequencies*, and the second row shows *percentages*.

Table 5 shows the correlation matrix of all variables. The bivariate correlations show no evidence of high correlation amongst the independent variables; thus, multicollinearity is not an issue in the data. However, we conducted a formal test for multicollinearity in the regression. The highest correlation is between LSIZE and GRI (0.338), indicating that large-sized companies tend to have higher green building index than smaller-sized companies. A positive and significant correlation also exists between LCOMM and SD (0.281), indicating that the higher community legitimacy is, the higher the SD will be. SD is also positively correlated to company size, leverage, and green building index. Moreover, LCOMM and LMEDIA are not correlated significantly.

Table 5. Pairwise Correlation Matrix

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| (1) SD | 1.000 | | | | | | | | |
| (2) LCOMM | 0.281* | 1.000 | | | | | | | |
| (3) LMEDIA | 0.146 | 0.070 | 1.000 | | | | | | |
| (4) WINROE | 0.032 | 0.006 | 0.024 | 1.000 | | | | | |
| (5) LTOBINSQ | 0.049 | 0.035 | 0.102 | 0.270* | 1.000 | | | | |
| (6) LSIZE | 0.421* | 0.040 | 0.063 | 0.192* | 0.011 | 1.000 | | | |
| (7) LLEV | 0.195* | 0.013 | 0.051 | −0.018 | 0.253* | 0.297* | 1.000 | | |
| (8) LAGE | 0.007 | 0.006 | −0.042 | −0.204* | −0.219* | −0.134 | −0.058 | 1.000 | |
| (9) GRI | 0.375* | 0.087 | 0.039 | 0.093 | 0.120 | 0.338* | 0.072 | −0.197* | 1.000 |

Notes: SD is the company–year sustainability score. ROE and TOBINSQ represent company performance. WINROE is the winsorised figure of ROE, measured by income before extraordinary items at the end of the fiscal year over total equity. LTOBINSQ is measured by the total market value of equity and total debt divided by total assets. LSIZE is the natural log total assets. LLEV is the natural log of total liability to total asset ratio. LAGE is the natural log of the number of years since its listing date. GRI is a category for companies that follow GRI framework in reporting.

*** *p < 0.01*, ** *p < 0.05*, * *p < 0.1.*

In order to answer the hypothesis testing for this study, all sample firm data were run through a combined OLS regression. The LM-Breusch Pagan test was then used to compare the outcomes of pooled and RE regressions using the random-effect (RE) panel. The test results show that RE outperforms the pooled-OLS model with a 0.000 p-value, rejecting the null hypothesis that the error term's variance is absent. In other words, the test shows that the sample has heterogeneity (difference) among the different companies, which justifies the use of panel data analysis rather than pooled regression analysis. Following the LM test, the Hausman specification test and the

Sargen-Hansen test were used to compare the RE model to the fixed-effect (FE) model.

The null hypothesis of the Hausman test states that there is no correlation between *x* and individual-specific effects. If the null hypothesis is rejected, use the FE estimator. The Sargen–Hansen test was used to reconfirm the Hausman estimations. If the latter test rejects the model, it suggests that the FE model is more logical or desirable. To enable the drawing for consistent results, corrective steps are necessary when non-constant variances (such as heteroscedasticity, autocorrelation, and cross-sectional dependency) are present. Using robust standard errors is one strategy that is frequently used in the literature. Robust standard errors based on the White VCE estimator were presented in Table 6 for the regression model.

Table 6. Regression Results

| | $H_1$ and $H_2$ | | Additional Analysis | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Dependent variable: SD | Basic FE | 2SLS | Basic FE | 2SLS |
| LCOMM | 0.240*** | 0.356*** | 0.220*** | 0.338*** |
| | (0.087) | (0.052) | (0.082) | (0.054) |
| LMEDIA | 0.262* | 0.509*** | −0.045 | 0.131 |
| | (0.14) | (0.09) | (0.397) | (0.198) |
| LCOMM*LMEDIA | - | - | 0.272 | 0.318** |
| | | | (0.363) | (0.136) |
| GRI | 0.353** | 0.353*** | 0.333** | 0.303*** |
| | (0.142) | (0.112) | (0.136) | (0.113) |
| WINROE | −1.22* | −1.613** | −1.272** | −1.627** |
| | (0.619) | (0.652) | (0.628) | (0.651) |
| LTOBINSQ | −0.252 | 0.459*** | −0.263 | 0.463*** |
| | (0.181) | (0.131) | (0.183) | (0.131) |
| LSIZE | 0.017 | 0.194*** | 0.021 | 0.197*** |
| | (0.145) | (0.026) | (0.146) | (0.026) |
| LLEV | 0.077 | −0.006 | 0.073 | −0.005 |
| | (0.105) | (0.057) | (0.106) | (0.057) |
| LAGE | 0.229 | 0.174*** | 0.214 | 0.181*** |
| | (0.340) | (0.057) | (0.337) | (0.058) |
| _cons | 1.793 | −0.559 | 1.798 | −0.607 |
| | (1.928) | (0.421) | (1.931) | (0.425) |
| Observations | 420 | 420 | 420 | 420 |
| R-squared | 0.203 | 0.347 | 0.207 | 0.350 |

Note: SD is the company–year sustainability score. ROE and TOBINSQ represent company performance. WINROE is the winsorised figure of ROE measured by income before extraordinary items at the end of the fiscal year over total equity. LTOBINSQ is measured by the total market value of equity and total debt divided by total assets. LSIZE is the natural log total assets. LLEV is the natural log of total liability to total asset ratio. LAGE is the natural log of the number of years since its listing date. GRI is a category for companies that follow GRI framework in reporting. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The results are estimated using FE and RE regression models with robust standard errors in parentheses.

The first column tests the econometric Model 1, that is, whether community legitimacy (LCOMM) and media legitimacy (LMEDIA) have significant effects on SD. The R-squared for this model is 0.203. The regression results confirm that companies' perceived importance for legitimacy of the community and the media have a positive relationship with SD. The positive regression coefficient LCOMM (0.240) and LMEDIA (0.262) indicate that increase in legitimacy, as perceived by managers, also increases SD. However, this result may suffer from endogeneity bias because of simultaneous causality, which occurs when one (or more) independent variable is jointly determined with the dependent variable (i.e. when independent and dependent variables simultaneously cause each other, and causal effects run reciprocally) (Wooldridge, 2002).

This study argue that two-way causality (simultaneously) may exist between legitimacy, firm performance and SD. In other words, it is not just legitimacy and firm performance that may impact what being disclose in SD for the year, but SD may also affect firm performance and may change manager salience towards the stakeholders. For instance, firm with poor legitimacies in one year may choose to give better level of legitimacies in the following year because not only firms use SD to engage with stakeholders, but SD is also being use for stakeholders to exert pressure on the firms. Similarly, companies' performance may cause companies to disclose more because of extra resources that they have, but having adopted SD may also increase companies' performance. The coefficient estimates of the endogenous variable or variables are not the only sources of endogeneity bias and inconsistency. Even for model variables that are exogenous, they have an impact on all coefficient estimations (Wooldridge, 2002; Greene, 2003).

Before formalizing the study hypotheses, 2SLS is an instrumental variable (IV) method requiring at least one additional exogenous variable to help identify the effect of the offending endogenous variable on the dependent variable. We used a mean value of WINROE and LTOBINSQ as a proxy to gather data on this IV. If the value is equal to or higher than the mean, it is given a value of 1, and if not, it is given a value of 0. Consistent with our expectations, for both LCOMM and LMEDIA in the 2SLS method shows significant and positive effects on SD. Legitimacy influences SD for community (0.356; $p<0.01$) as well as media (0.509; $p<0.01$). The results obtained for the OLS and 2SLS estimators are comparable, but the latter's beta is stronger than the former's. These results confirm the study's hypotheses that, after controlling for endogeneity, managers' perceptions of their communities' and the media's legitimacy can have a considerable positive impact on SD (Hou, 2019; Soytas et al., 2019). Thus, $H_1$ and $H_2$ are accepted. This result suggests that as community legitimacy increases, SD also increases. The result on the companies' response to community legitimacy that makes them disclose SD underscores the importance of community engagements, as found in the prior literature (Fordham & Robinson, 2018; Rahmawati et al., 2019; Eikelenboom & Long, 2023). This result lends support to Dunham et al. (2006)'s claim that communities are legitimate stakeholders.

The result also reveals that an increase in media legitimacy is associated with an increase in SD. The results are also aligned with the view that media can become a stakeholder that managers regard as important for their legitimacy. This perspective is alternative to prior literature that views media only as a medium to communicate sustainability information (Gao et al., 2023), or as a conduit for stakeholder engagement (Giacomini et al., 2020; Khanal et al., 2021; Pizzi et al., 2021).

These findings support earlier research showing that stakeholder legitimacy influence SD (Orlitzky et al., 2011; Mukumbi, 2013) and are consistent with the anticipation of the stakeholder salience theory (Donaldson & Preston, 1995; Freeman, 2010).

These results indicate that legitimacy is significant for community and the media. This outcome implies that these groups of stakeholders are important, desirable, and appropriate within the institutions in which the firms operate. The more legitimate these stakeholders are, the better able they are to persuade companies to disclose their CSR issues in sustainability disclosure. Legitimacy is different from power because, in legitimacy, the firm is said to agree with the stakeholders' needs or demands consensually. The study can conclude that the community and the media possess the legitimacy that the sample companies have in place in the presence of environmental management system, charity foundation, and investor relation personnel. Determining the stakeholders with legitimacy is particularly important for businesses seeking to secure and preserve the firms' legitimacy (social licence to operate). Therefore, by involving those stakeholders, businesses would have a better opportunity to propose and assess activities alongside legitimate voices in order to achieve social expectations.

The empirical relationship between legitimacy attributes and SD is well established using the pooled model. However, there is a lack of prior empirical evidence concerning the outcomes using the fixed-effect model. Therefore, this study's findings contribute to minimising the research gap. Regarding the control variables. Dissanayake et al. (2016) and Sulaiman et al. (2014) found that GRI, company performance (LTOBINSQ), age (LAGE), and size (LSIZE) all had favourable effects on all associations.

***Additional Analysis***

Theoretically, communities are a latent stakeholder, initially with an urgent claim but no power or legitimacy. Later, communities can become a dangerous stakeholder (with power and urgency) when the media becomes involved (Driscoll & Crombie, 2001; George & Venkiteswaran, 2019). This concern is tested using an interaction term LCOMM * LMEDIA. Model 2 tests for additional variable, which is the incremental value of interaction between community and media legitimacies (LCOMM * LMEDIA). The econometric model used is as follows:

$$\mathrm{SD} = \alpha + \beta_1 \mathrm{LCOMM_{it}} + \beta_2 \mathrm{LMEDIA_{it}} + \beta_3 \mathrm{LCOMM} * \mathrm{LMEDIA_{it}} + \beta_3 \mathrm{WINROE_{it}} + \mathrm{LTOBINSQ} + \beta_4 \mathrm{LLEV_{it}} + \beta_5 \mathrm{LSIZE_{it}} + \beta_6 \mathrm{LAGE_{it}} + \beta_7 \mathrm{GRI_{it}} + \epsilon_{it}, \quad (2)$$

where all variables are as previously defined.

Columns 3 and 4 of Table 6 test the econometric Model 2, that is, whether the interaction between community and media legitimacy (LCOMM * LMEDIA) has any incremental value on SD. The R-squared for the basic FE model is 0.207. The regression result indicates that LCOMM is positively significant. The LMEDIA coefficient becomes insignificant. As previously mentioned, LMEDIA is only observable at point 1 (Table 4) because of limited information being disclosed about media in corporate disclosure. On the basis of the summary statistics in Table 4 nearly 90% of the companies in this study do not consider that SD is for the media. The 2SLS method shows better result after controlling for endogeneity, whereby the interaction variable LCOMM * LMEDIA has a positive and significant relationship with SD (0.318). Therefore, the result suggests that the existence of media legitimacy strengthens the relationship between community legitimacy and SD. Implicitly, managers react by providing more information about communities when companies also engage with the media, compared with the situation when either one of them exists.

## MANAGERIAL IMPLICATIONS IN THE SOUTHEAST ASIAN CONTEXT

Consistent with the prominence of media influence on political power, particularly in the South-East Asian context (George & Venkiteswaran, 2019), the results suggest that the media brings incremental value to the direct relationship between communities and sustainability disclosure. This gives motivation behind making disclosures about the media in the annual report's SD section more so in this rapid social media where fake and misleading information may threaten the public trust. Crucial information for the media to improve expression includes the regular release of both financial and non-financial data to the media (including the why, when, and how businesses contact the media) and the management of those relationships (including engagement strategies and corporate communication partnerships with the media).

## THEORETICAL IMPLICATIONS

Thus far, studies that emphasise on the role of stakeholder legitimacy that can influence SD have been limited except for Thijssens et al. (2015) who has studied on the effect of power-legitimacy-urgency of NGO on SD. This study extends studies on the effects of other secondary stakeholder which are the communities and the media. The fundamental premise of stakeholder salience theory is that stakeholder attributes and their claim determine their salience. This study does not directly measure the salience (the degree managers rank stakeholder importance); rather, this study empirically tests whether community and media legitimacies are still relevant in explaining companies' SD. Thus, this study departed from classic stakeholder theory which treats all stakeholder as important based on ethical reasoning. Firstly, the analysis indicates that legitimacy attributes are important in determining SD. Managers' perception of whether the local community's claim is appropriate and desirable, in light of socially constructed norms and values, provides moral justification and motivation for more disclosure. These findings shed light on normative reasoning for managers' information disclosure. Although stakeholder salience theory is not exclusively focused on stakeholder and media exposure (Phillips et al., 2003), its applications have primarily leaned towards stakeholders' resources, sparingly addressing managers' philanthropic and altruistic values. This limitation affects the theory's effectiveness in explaining SD.

## CONCLUSION

Construction projects can result to serious environmental damages. Stakeholders demand (pressure) companies to be more accountable to the society and environment. SD is provided to stakeholders explaining corporate accountability and sustainability practices to sustainable development. The objective is to acquire stakeholder acceptance (i.e., legitimacy for the company to exist). Thus, stakeholder legitimacy from the management perspective can shape the magnitude of SD that they provide. However, the link between specific stakeholder legitimacy, particularly, community and media legitimacies, and SD has not been investigated before. Therefore, this study aims to examine the association between community and media legitimacies and SDs made by construction companies using stakeholder salience theory. In this study, we select 420 balanced panel observations of 140 construction listed companies on Bursa Malaysia from 2015 to 2017. The multivariate regression analysis suggests that community and media legitimacies are important determinants of SD. Moreover, the existence of both legitimacies has additional value to improve SD.

This study is subject to several limitations. Firstly, due to limited data, this study does not examine which category of community (i.e., communities of place (local community), communities of interest or community of practice) and whether legitimacies to these constituents are important. Secondly, we used the Malaysian construction industry as a context. To some extent, the theoretical relationship may also depend on contextual characteristics existing in Malaysia as an emerging country. Caution must be exercised for generalisation in other contexts with similar characteristics. In this study, the 3-year time frame for data collection can be extended for a study with fixed effect regression since fixed effect measures the changes within years and not between firms. Furthermore, this study's main variable of interest is unlikely to fluctuate very much in a short time. Therefore, future research with a longer time frame may provide better results than this study. For example, since legitimacy of media does not include score 2 (more legitimate) in this study's entire sample, it may well be that, among those with more legitimate, the interaction between media's power and legitimacy is different from what it would be in a less restrictive sample.

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