Determinants of the Adoption of Integrated Reports: An International Investigation

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Abstract: This study examines the determinants of companies' reporting decisions. We employ three measures at the country-level: (1) investor protection, (2) trade union density, and (3) economic development. Regression model analysis was used to measure whether companies used integrated reports (IR) or traditional sustainable reports. Using sample data from Fortune Global 300 for the year 2017, which is the latest available data, this paper follows logistic regression models. The study finds out that the probabilities of publication of IR are high in countries with high trade union density, weak investor protection, and low levels of economic development. These results help companies and managers to better cope with current business environments.

Keywords: economic development, integrated reports, investor protection, trade union density, traditional sustainable reports.

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INTRODUCTION

Recent studies (Jensen & Berg, 2012; Krzus, 2011; Lodhia, 2015; Velte & Stawinoga, 2017) have shown that a new report contains both financial and non-financial information appears more to be more connected to the actual environment of current companies. It is suggested that the production of integrated report (IR) seems crucial in the modern business world because IR considers all aspects that will influence the decision-making process and links the future risks and targets to the previous years' performance shown in financial figures (Jensen & Berg, 2012). However, due to the insufficient reporting regulations and its complexity for understanding, integrated reporting may be a struggle for many companies, especially small- and medium-sized companies (Bouten & Hoozée, 2015). Also, the structures of IR are changing rapidly, so it is hard for companies to come up with a proper way to publish (Stubbs & Higgins, 2014).

Accordingly, it is uncertain why many companies choose to use IR in the present business world. Although research was conducted by Jensen and Berg (2012) on why companies choose to publish IR based on the year

2008 data, no experiments have been carried out using the data after the year 2008. However, there have been rapid changes in the business world after the financial crisis in 2008. For instance, various developing countries alter their strategic center to quality economic development (Zou et al., 2015). According to Stuckler et al. (2011), people from European countries suffered a lot from this crisis, and the economies of these developed countries cannot return to their previous status after 2008.

Thus, this study aims to fill the gap of the period using the latest available data so that the current economic environment can be reflected in the analysis. The research objective of this paper is to find out country-level determinants that influence companies' reporting strategy. By examining the factors that influence such a choice, we can figure out the reasons that companies prepare IR.

The study on this topic is essential because IR has become a new trend in the modern business world (James, 2015). Understanding the causes behind the reporting decisions can assist business people in knowing whether it is suitable for their companies to adopt the IR based on their present situations.

This paper is different from prior studies (Jensen & Berg, 2012; Krzus, 2011) in that it uses the country-level, quantitative regression approach to predict how the determinants are related to the reporting decisions. Furthermore, as the latest data were used, readers can obtain information that is acceptable under the present situations.

This research used three determinants to predict their impact on reporting decisions, which are investor protection, trade union density, and level of economic development. Accordingly, three hypotheses were proposed: (1) Companies are more likely to publish Integrated Reports in countries with less investor protection; (2) The likelihood of publishing Integrated Reports is higher in higher trade union density countries, and (3) The publication of Integrated Reports is positively influenced by high-economic development. Using a sample from Fortune Global 300 in the year 2017, the latest available time for all data, this study finds out that the probabilities of the publication of IR are higher in countries of higher trade union density, less investor protection, and lower level of economic development.

As a large proportion of companies around the world begin to produce IR rather than the traditional one (Engelbrecht, 2010), it is pivotal to understand why they prefer to publish IR. First, it is urgent to figure out the definitions as well as the similarities and differences between the two kinds of reporting methods. According to James (2015), traditional sustainable reporting (TSR) is a kind of reporting method that only contains financial information for decision making, whereas integrated reporting is another kind of reporting method that additionally contains non-financial information, which considers the future goals and risks. Within IR, firms measure all aspects that will influence their performance, including financial, internal control process, social responsibility, and supply chain (Jensen & Berg, 2012).

Numerous articles are talking about the usefulness of IR. As mentioned by James (2015), it has become a trend to use integrated reporting mandatorily, because such a reporting method has many advantages when compared with the previous one. Besides financial numbers, IR additionally provide much non-financial information, such as natural resources, employees, and community, which give management more details when making decisions (James, 2015). James (2015) also claims that the increment in the number of companies using IR results from not only the investors' demand for more specific information, but also the regulatory requirements, and the enhancement of the reporting standards. Another reason James (2015) contributes to the tendency is the accounting professionals' support on such an idea. In their mind, brand reputation increased profits, and customer satisfaction is key to the success of a company. Adopting IR can have positive effects on these aspects, which in turn help achieve the success of the company.

Also, Krzus (2011) states that the decision changes in the reporting approach are due to the combination of several different challenges. Current TSR method may not provide enough relevant information to capture

the opportunities and reduce the potential risks. One of the challenges is the economic problem. In 2008, the global financial crisis resulted in the public distrusting the rules of business at that time; instead, they hoped to have more perfect standards to regulate entities to produce annual reports for decision making. Another challenge is the changes in the business environment. With the rapid advance of world commerce, non-financial information is required to adapt to the rapid change in the business environment, and many investors and managers need IR with non-financial information. Societal pressure is also of great significance. In recent times, many corporations have realized the effects of stakeholders other than shareholders on the value of the company's reputation. Non-financial information is the right way that companies can use to measure the contributions of stakeholders. Accordingly, the process of human society stimulates the ever-increasing and more complex requirements for reporting disclosures. IR represent the production of the sophisticated modern society (Krzus, 2011).

To further illustrate the forces of using an IR approach, Lodhia (2015) uses Goodbank, the first customer-owned bank in Australia, as an example. From Lodhia's view (2015), Goodbank adopted IR as its reporting method because such reports can better demonstrate the value creation and help to align its performance with its corporative strategies better. Also, the structure of customer ownership assists Goodbank succeeding in adopting IR because, in such structure, there is less hierarchy or bureaucracy, thus enhancing the probability of changing the reporting standards in Goodbank.

However, Lodhia (2015) acknowledges that Goodbank suffers from some problems when producing IR. For example, as such reports emerged just recently, not many people in Goodbankcan fully understand its complexity. Another challenge is that Goodbank's current practice on IR is internally driven and did not consider the external stakeholders, so it needs to come up with solutions on the balance of both sides when producing IR.

Velte and Stawinoga (2017) also agree that IR suffered some drawbacks. They analyzed its weaknesses by three different levels of activities, market, organizational, and individual levels, respectively. First of all, the quality of IR is not standardized at the market level, so the comparability of worldwide samples is low due to the discretionary power of management. Besides, many different interpretations of IR can be produced based on similar information, thus the lack of external validity on the publication of IR. Second, at the organizational level, "IR disclosure index" is used to analyze the quality of IR by many entities, but such index is subjective to personal judgment and bias. Hence, IR may be useless at the organizational level. Additionally, the research at the individual level of IR is at its beginning stage, and it is still a mystery whether IR is beneficial at this level (Velte & Stawinoga, 2017).

Accordingly, based on the belief that traditional reports are insufficient for the modern world, Jensen and Berg (2012) developed a model to test the determinants of companies to use IR annually. They divided the factors into five categories: political system, financial system, education and labor system, cultural system, and economic system. Some indicators were used to measure whether each category affected the choice of companies between the traditional sustainable reports and IR. Based on Jensen and Berg's experiment (2012), IR are more commonly used in a legal environment with more employment protection and less investor protection. For financial considerations, market orientation and ownership dispersion encourage companies to produce IR, because such factors are usually difficult to predict without non-financial information. Also, companies from countries with an emphasis on education and a labor union are more likely to prepare IR to their stakeholders. Furthermore, Jensen and Berg (2012) realize that the culture of national responsibility and rationality is one primary reason that companies want to publish IR. Last but not least, a developed country with a more advanced economy is the center where companies produce IR for more comprehensive information to help make decisions.

As the review of prior research suggests, companies' decisions to publish IR are mainly driven by investors' requirements, accountants' supports, and benefits for decision making. Nevertheless, considering the complexity of publishing IR, it can also be argued that integrated reporting neither has a comprehensive regulation system nor is fully understood by most businessmen.

Therefore, this paper aims at which factors may have an impact on companies' decision on reporting methods. The focus of the research is restricted to three country-level determinants that may influence the decision. The choice of determinants in the study takes consideration of prior research and the availability of the sample data.

Moreover, this research can make contributions to the existing literature in several aspects. First, the results of the study apply to firms worldwide, since country-level indicators were used to test the prediction. Second, the latest time data give more relevance to the current commercial environment. Third, regression analysis is used in the study, providing more objective and unbiased information to users.

METHODS

The sample of the study was selected on the top 300 companies from Fortune Global 500 in the year 2017, so the sample size of the dependent variable is 300. Eccles and Krzus (2014) indicate the economic significance of the Fortune Global 500 and their movement toward integrated reporting by leveraging the internet. The year 2017 is the latest available time for data of all variables. Therefore, all sample data sourced from the dataset of Fortune (2017) make a representative sample for the study. Websites of these $N = 300$ companies were then searched to see which kinds of reporting methods were used.

In this paper, the following logistic regression models are used for firms and countries j to test the hypotheses previously developed:

$$\text{IRTSR}i = \alpha + \beta_1 \text{SIZE}i + \beta_2 \text{CAP}i + \beta_3 \text{MARGIN}i + \varepsilon \tag{1}$$

$$\text{IRTSR}i = \alpha + \beta_1 \text{INPR}j + \beta_2 \text{SIZE}i + \beta_3 \text{CAP}i + b_4 \text{MARGIN}i + \varepsilon \tag{2}$$

$$\text{IRTSR}i = \alpha + \beta_1 \text{INPR}j + \beta_2 \text{GNICA}j + \beta_3 \text{SIZE}i + \beta_4 \text{CAP}i + \beta_5 \text{MARGIN}i + \varepsilon \tag{3}$$

$$\text{IRTSR}i = \alpha + \beta_1 \text{INPR}j + \beta_2 \text{GNICA}j + \beta_3 \text{TRAD}j + \beta_4 \text{SIZE}i + \beta_5 \text{CAP}i + \beta_6 \text{MARGIN}i + \varepsilon \tag{4}$$

In regression (1), the relationships between the dependent variable and the control variables were tested. One independent variable INPR is added to regression (2). Then, one independent variable GNICA was added to regression (3). In the next step, all independent variables, including TRAD and control variables, were mixed in regression (4). IRTSR was the object of the study, which was the dependent variable used in the logistic regression model. It had a value of 2 if the company published IR and a value of 1 if the company published TSR. For dependent variables and control variables, their definitions, together with their sources, are listed in Table 1.

INPR is a variable to show the extent of investor protection within a country. It was defined between 0 and 10 by The World Bank (2017), who used the approach of Djankov et al. (2008). The number of INPR is the

Table 1 Variable Definitions

Variable (Acronym)	Definition (Source)
Dependent variable	
Integrated Reporting (IRTSR)	Indicator variable equals 2 if the company *i* published IR in the year 2017, and 1 otherwise (Global Fortune 500, 2017)
Independent variables	
Investor Protection (INPR)	The extent of investor protection in country *j* measured by The World Bank (2017)
Trade Union Density (TRAD)	The density of trade unions in country *j* using data from OECD (2017)
Gross National Income per capita (GNICA)	Level of economic development in country *j* (The World Bank, 2017)
Control variables	
Company Size (SIZE)	Natural log of firm *i*'s total assets (Global Fortune 500, 2017; Kolk & Perego, 2010)
Capital Intensity (CAP)	The magnitude of firm *i* capital investment. It is measured using the natural log of the amount of assets per employee (Global Fortune 500, 2017; Kolk & Perego, 2010)
Profit Margin (MARGIN)	The profitability of firm *i*. It is measured by profit as a percentage of revenues (Global Fortune 500, 2017)

average of the disclosure index, direct liability index, and the ease of shareholder suits index. Besides, TRAD described the density of trade union in a particular country, which was computed by The Organization for Economic Co-operation and Development (OECD, 2017), equal to the percentage of wage- and salary-earning trade union members to the total number of wage- and salary earners. To measure the level of economic development of a country, GNICA was used. Data were selected from The World Bank (2017).

Three firm-level variables were used as control variables to make the result more reliable and accurate (Kolk & Perego, 2010). SIZE measured the natural log of firm *i*'s total assets, using data from Global Fortune 500 (2017). CAP was used to measure the magnitude of a firm's capital investment. CAP was computed using the natural log of the amount of assets per employee from Kolk and Perego (2010). Data about the value of assets and number of employees were taken from Global Fortune 500 (2017). Besides, MARGIN measured the profitability of a firm, calculated by profit as a percentage of revenues. Similarly, data on sample companies' profits and revenues were from Global Fortune 500 (2017).

RESULTS AND DISCUSSION

In the process of data collection, some values in the calculation of TRAD were missing, so only 216 values were used in the regression to obtain the results. Table 2 summarizes the publication-related statistics per country. As is shown in the table, most companies in the panel of 300 companies were from the USA (28.7%), China (21.7%), Japan (10.7%), France (6.7%), Germany (6.7%), and Britain (4.3%). Besides, it was indicated that, of the 152 IR companies, China (65 reports) had the most, the USA (34) ranked second, and France (16) and Japan (15) ranked third. It is important to note that two companies in Britain published IR, which consisted of only 15.4% of total British companies in the panel, remarkably less than other western countries.

Table 3 presents the descriptive statistics of the regression model, which shows the observation numbers' mean value, standard deviation, minimum, and maximum values. Table 4 presents the correlation matrix of the variables. From the table, INPR and GNICA have a significant but a negative relationship with IRTSR. TRAD and

Table 2 Summary Statistics per Country

Country	(a)	(b)	(c)	(d)	(e)
Australia	2	0.7%	1	0.7%	50.0%
Belgium	1	0.3%	1	0.7%	100.0%
Brazil	5	1.7%	4	2.6%	80.0%
Britain	13	4.3%	2	1.3%	15.4%
Canada	4	1.3%	0	0.0%	0.0%
China	65	21.7%	40	26.3%	61.5%
Denmark	1	0.3%	0	0.0%	0.0%
France	20	6.7%	16	10.5%	80.0%
Germany	20	6.7%	7	4.6%	35.0%
India	5	1.7%	3	2.0%	60.0%
Indonesia	1	0.3%	1	0.7%	100.0%
Ireland	1	0.3%	1	0.7%	100.0%
Italy	6	2.0%	3	2.0%	50.0%
Japan	32	10.7%	15	9.9%	46.9%
Luxembourg	1	0.3%	1	0.7%	100.0%
Malaysia	1	0.3%	0	0.0%	0.0%
Mexico	2	0.7%	1	0.7%	50.0%
Netherlands	7	2.3%	4	2.6%	57.1%
Norway	1	0.3%	0	0.0%	0.0%
Russia	4	1.3%	3	2.0%	75.0%
Saudi Arabia	1	0.3%	1	0.7%	100.0%
Singapore	1	0.3%	0	0.0%	0.0%
South Korea	8	2.7%	6	3.9%	75.0%
Spain	4	1.3%	4	2.6%	100.0%
Switzerland	7	2.3%	3	2.0%	42.9%
Thailand	1	0.3%	1	0.7%	100.0%
USA	86	28.7%	34	22.4%	39.5%
Total	300	100.0%	152	100.0%	50.7%

(a) Firms per country in the panel ($N = 300$). (b) The proportion of firms per country. (c) A number of firms per country that publish IR in the panel. (d) Proportion per country of total IR in the panel ($N = 152$). (e) The proportion of IR firms on the total of firms per country

Table 3 Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
IRTSR	300	1.503	0.501	1	2
INPR	300	6.579	1.537	3.33	9.33
TRAD	216	60.192	7.529	8.9	66.1
GNICA	300	4.459	0.378	3.262	4.897
CAP	300	6.089	0.693	4.054	8.672
MARGIN	300	5.141	6.566	−22.136	28.362
SIZE	300	11.125	0.555	9.57	12.541

Variable definitions are provided in Table 1
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$
$N = 300$, except for TRAD ($N = 216$)

GNICA have significant and positive relationships with INPR. Furthermore, GNICA has significant and positive relationships with TRAD. As for control variables, both SIZE and MARGIN has strong and positive relations with CAP. Also, MARGIN has strong and positive relations with the independent variable TRAD.

Table 4 Pairwise Correlation Matrix

Variable	IRTSR	INPR	TRAD	GNICA	SIZE	CAP	MARGIN
IRTSR	1.000						
INPR	−0.185***	1.000					
TRAD	0.103	0.197***	1.000				
GNICA	−0.176***	0.532***	0.220***	1.000			
SIZE	0.130**	−0.054	−0.058	0.012	1.000		
CAP	−0.020	0.059	−0.079	0.113*	0.170***	1.000	
MARGIN	0.126**	0.115**	0.260***	0.068	0.058	0.282***	1.000

Variable definitions are provided in Table 1
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$
$N = 300$, except for TRAD ($N = 216$)

Table 5 shows the results of the logistic regression models. There were four regression experiments carried out, the results of which are presented in columns 1, 2, 3, and 4, respectively. The overall results are presented in column 4 of the table. Columns 1, 2, and 3 show the detailed information about how the overall results in column 4 were obtained. In column 1, the relationships between the dependent variable and the control variables were tested. It shows that IRTSR has significant relations with the control variables except for CAP. Then, one independent variable INPR was added to the regression. The result of the addition is that it is very likely that INPR has negative relations with IRTSR. Relations between control variables and IRTSR remain the same. After that, another independent variable GNICA was concluded. Both independent variables in this regression have significantly negative relationships with IRTSR.

Table 5 Results of Logistic Regression Analysis

Variables	(1)	(2)	(3)	(4)
	Coefficient (t-Value)	Coefficient (t-Value)	Coefficient (t-Value)	Coefficient (t-Value)
INPR		−0.063*** (−3.330)	−0.044* (−1.945)	−0.050** (−2.030)
GNICA			−0.146* (−1.651)	−0.610** (−2.395)
TRAD				0.008* (1.807)
SIZE	0.123** (2.409)	0.111** (2.240)	0.114** (2.284)	0.113* (1.922)
CAP	−0.060 (−1.400)	−0.054 (−1.304)	−0.048 (−1.135)	−0.117*** (−2.660)
MARGIN	0.011** (2.589)	0.012*** (2.990)	0.012*** (3.024)	0.012** (2.212)
Constant	0.448 (0.770)	0.948 (1.583)	1.402** (2.092)	3.619** (2.576)
Observations	300	300	300	216
R^2	0.037	0.073	0.082	0.106
Industry FE	YES	YES	YES	YES

Variable definitions are provided in Table 1
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

In the next step, all independent variables and control variables were mixed to run the regression for overall results. First, the coefficient of INPR is negative and significant ($p = 0.038$). Thus, it supports the hypothesis H1 that with a higher level of investor protection, firms are more likely to publish IR rather than TSR. Besides, the coefficient of TRAD is also positive and significant ($p = 0.085$). Such results represent that a high trade union density encouraged the disclosure of IR, which agree with hypothesis H2. Furthermore, GNICA has a negative but significant ($p = 0.014$) coefficient, which means that IR are more likely to be produced in a more economically developed country. The result of GNICA is not consistent with hypothesis H3.

As for control variables, all firm-level indexes have significant relationships with the decision to publish IR. In detail, CAP is negatively related to the higher excessive use of IR, whereas SIZE and MARGIN have positive relations.

In the descriptive analysis, the figures in the table show that majority of the Fortune 300 companies publishes IR. It suggests that the management of leading firms emphasize the significance of non-financial information. Furthermore, most of the IR companies come from either western country that is highly developed, such as the USA, France, Germany, and Britain, or from big countries that have been developing rapidly in recent times, such as China. The explanation for that result may be that publication of IR assists the advancement of a country.

Also, in the logistic regression analysis, four different experiments were carried out. The first experiment shows that all control variables, except for CAP, have strong relationships with the dependent variables. In the second experiment, the result confirms that companies are more likely to publish IR if they locate in the less investor protection country. The third experiment tested more harmonious relations by adding one more independent variable. The results show that neither investor protection nor economic development encourages the publication of IR. In experiment 4, it represents the final overall results of the regression model. It appears that the probability of producing IR is higher in countries with less investor protection. Publications of IR are also positively influenced by the density of trade union. Negative relationships between investor protection and integrated reporting and positive relationships between trade union densities corroborate with previously stated hypotheses. Our results are consistent with the findings of Jensen and Berg (2012) and García-Sánchez et al. (2019) as they report investor protection to play an active role in motivating the board toward improving firm's transparency.

However, the result that the likelihood of the adoption of IR is higher in less economically developed countries is contrary to the expectation. One explanation for the in conformity might be the fact that in the logistic regression model of this study, GNI per capita was used. Such an indicator is only a snapshot of the performance of a country but not a trend, so it does not present whether the economy is growing or declining as well as the rate of change. Although the GNICA in developed countries such as Germany, Italy, and Norway, has extraordinary figures, the growth of GNICA is close to 0, and some of them even suffer dramatically decline in recent years (The World Bank, 2017). On the contrary, the current figures in GNICA of a variety of developing countries, such as China and India, are left behind by most of the developed countries. However, the governments of these countries emphasize their political focus on economic development, intending to raise the standards of living. Accordingly, these countries enjoy a rapid speed of growth in GNI per capita (The World Bank, 2017). However, such indications may not be drawn from the analysis of the regression model.

The negative correlation is also inconsistent with the results in the experiment of Jensen and Berg (2012), who, using data on the year 2008, claimed that there was a positive impact of the economic development level on the publication of IR. However, as stated by Ren (2018), after the financial crisis in 2008, China changed its economic focus from rapid development to quality development with stable speed. To achieve high-quality economic development, non-financial information is critical because it might help investors to have a more

accurate and detailed analysis of the value of the target companies (Laskin, 2016). Furthermore, the implementation of *the Belt and the Road* policy of China in 2013 stimulates the economy of countries along the Belt and the Road, such as mid-Asia, Middle East, and Eastern European countries, almost all of which suffered limited economic development before the policy. According to Zou et al. (2015), for companies and investors in these countries, they need more environment and social responsibility related non-financial information to adapt to the new trend brought by *the Belt and the Road* policy that offers diverse opportunities to them. Therefore, IR may be needed in these countries, which could explain why the relationship between the economic development and IR publications has been revised since 2008.

Although this study contributes to the findings on what determines firms to publish IR, it is not deniable that this paper has some limitations. First, this paper only considered three factors that might influence the decision on the production of integrated reporting. Several other determinants, which may also have an impact on IR publication, could be implemented to have more accurate analysis. For example, the geographical position or educational level within a country could be tested to see their influence on the choice of firms publishing IR. Second, for each determinant in this paper, they could be further divided into more significant detailed measures. For example, in this paper, the GNI per capita was used to measure the economic development of a country. Other measures, such as GNI per capita trend over the years, can be added to observe the impact of economic development speed, as well as net export rate to inspect the impact of imports and exports. Last but not least, it might be improper in this paper to use secondary data; instead, primary data are supposed to be used to obtain more reliable information. Firm's individual motives on the publication of IR can be reached if primary data are applied.

The research used data from the database of globally recognized authorities, including The World Bank and OECD, which can enhance the reliability of the data source. Also, latest available data were used in this study so that the current situations on the publication of IR can be reflected for companies to decide which reporting approach to choose. Furthermore, all the measures are quantitative, and objectivity of the paper can be proved. For the validity of this study, Table 6 shows the results of the variance inflation factor (VIF) test. It suggests that the VIF values of all variables are higher but much closer to 1, which confirms the non-existence of multicollinearity. Besides, all dependent variables and independent variables are defined following the previous studies (Jensen & Berg, 2012; Kolk & Perego, 2010). Furthermore, the companies chosen as samples are well distributed among all major industries to get rid of the bias on the industry.

Table 6 Variance Inflation Factor

	VIF	1/VIF
MARGIN	1.2	0.833
GNICA	1.177	0.85
TRAD	1.134	0.882
INPR	1.113	0.898
CAP	1.073	0.932
SIZE	1.029	0.972
Mean VIF	1.121	

Variable definitions are in Table 1

The study updates data of prior study by Jensen and Berg (2012), which uses 2008 as basis year. As the business world has been changed dramatically since 2008, such as the implementation of The Belt and The Road policy, the experiments were carried out by Jensen and Berg (2012) may not reliable now, so the

results and analysis can be applied to the current business environment and fill the gap of the missing period. Moreover, this paper uses the country-level, quantitative regression approach to test the relations between the determinants and the reporting decisions, so reliable and accurate results can be obtained from this study.

CONCLUSION

We explored the determinants of companies' decision on reporting methods. The results in statistics summary per country suggest that a majority of the companies publish IR, most of them are from European countries and the USA, China, and Japan. There is one impressive figure that the proportion of British companies that publish IR is much smaller than that in other European countries. The results from the regression analysis show as expected that companies are more likely to publish IR in the environment where there are less investor protection and higher density of trade union. However, what contradicts to the expectation is that if firms locate in less economically developed countries, it has a higher probability for them to publish IR. There are some several explanations for the inconsistency. One is that the indicator used for economic development cannot display the growing or the declining tendency of a country's economy. Hence, developing countries, such as China and India, may focus on promoting their economies using more non-financial information, whereas developed countries are not. Zou et al. (2015) have mentioned in their research that *The Belt and The Road* policy implemented by China accelerate the economics of less developed countries along the Belt and the Road. Non-financial information, such as corporate social responsibility and environment, is necessarily needed by corporations in these countries to capture the opportunities. For further research, it is reasonable to consider other aspects of factors that may have a significant influence on the reporting choices. For example, firm-level determinants can be used to predict their effects on companies' reporting decision. Also, primary data are recommended for future research on this topic, because it is more reliable, and researchers can know firms' individual motives on their choices.

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