



RESEARCH ON FACTORS AFFECTING THE DISCLOSURE OF SUSTAINABLE DEVELOPMENT REPORT: EXPERIMENTAL AT VIETNAM NATIONAL PETROLEUM GROUP



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ABSTRACT

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This research analysed with data from 265 managers from head level upwards working in 60 oil trading companies in the Vietnam National Petroleum Group (Petrolimex) spread across the country to examine factors affecting the disclosure of sustainable development reports. The following methods of descriptive statistics, Cronbach's Alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) are employed in this study. The empirical results show that enterprise size, growth opportunities, legal basis, business sector and profitability are factors that have a varying positive impact on disclosing sustainable development reports. The managerial viewpoint, though influencing the impact, is not statistically significant for disclosing sustainability development reports. The results provide a scientific basis for managers to make appropriate decisions in improving the disclosure of sustainable development reporting information.

Contribution/ Originality: This research has examined the factors affecting the disclosure of sustainable development reports within the Vietnam National Petroleum Group. We found that enterprise size, growth opportunities, legal basis, business sector and profitability have a positive impact on disclosure, but that the managerial viewpoint is a factor that does not affect it.

1. INTRODUCTION

Sustainable development reports provide an annual account of environmental, social and economic performance as well as a road map of sustainability objectives and targets. In recent years, countries have regularly conducted global conferences or forums related to how best to report on sustainable development including topics such as building sustainability newspapers, indicators related to sustainable development and the roles of accountability and accounting in sustainable development of enterprises.

Countries such as the UK, the US and Australia have been discussing sustainable development since the 1970s. Many academics in these countries have carried out research on sustainable development reporting and factors that affect it such as: Deegan and Gordon (1996); Craswell and Taylor (1992); Hackston and Milne (1996); Frias-Aceituno *et al.* (2012).

In Vietnam, there has not been as much research on sustainable development or the factors affecting its reporting that is Vietnam specific bar a few recently implemented studies: Ha (2007); Nguyen (2009); Phan (2016); Nguyen and Nguyen (2017); Hoang (2017). Part of the issue is that in Vietnam, there is no major institute or organisation that has focused solely on conducting in-depth studies into the reporting aspects of sustainable development and the factors affecting it specifically in relation to the petroleum or oil and gas trading enterprises in the country. This is an industry that has a strong impact on economy, politics and society and the environment. Therefore, the authors of this study felt that the study was urgently needed as it was crucial to determine the attitudes of Vietnam National Petroleum Group managers and factors affecting their reporting.

The authors have made suggestions for policy amendments and implications in their discussion of the research results to help managers improve the way they publish and report on sustainable development in their industry and companies.

2. THEORY AND RESEARCH MODEL

2.1. Theory

The research related to the publication of information on sustainability reports of enterprises is based on several important background theories.

First is the Legitimacy Theory with the view that businesses must seek solutions to ensure their activities are within the scope and standards of society that businesses operate. The study by Dennis (1992) showed that US oil and gas companies expanded their range of environmental disclosure information, after the Exxon oil spill. Craig and Michaela (1996) also point out that businesses will publish more environmental information in the year being sued than other years, and that businesses that are being sued will publish more environmental information, compared with businesses that are not being sued.

The second theory is the Stakeholder Theory where all stakeholders are treated fairly and enterprises are considered units whose activities are intended to harmonize the interests of stakeholders. Once the interests of the parties' conflict, the business administrator seeks to balance those economic interests, according to the best method. The study of Neu *et al.* (1998) shows that enterprises respond to more environmental information when it is requested by law enforcement and shareholders, rather than by those who work for the environment. The results of Muhammad and Craig (2008) show that enterprises in Bangladesh's garment industry have changed working conditions for workers, using child labor at the request of the guests. European goods use their products.

The third theory is the Organizational theory which is used to interpret the causes of enterprises acting similarly or differently with other enterprises, to ensure its legality. Specifically, the unit does not disclose relevant information about the environment unless it is in a situation where many other units make the announcement and it is required to be similar to these units, by publishing similar information.

The fourth theory, the Signaling/Disclosure Theory shows that enterprises with high financial and non-financial activities are more likely to reveal higher efficiency and make reports on the sustainability of CSR/ESG in addition to the required financial statements. Signaling theory refers to the ability to communicate with all stakeholders to achieve all five aspects of EGSEE on sustainable activities (Connelly *et al.*, 2011b).

The fifth theory, the Stewardship Theory stems from sociology and psychology and management and considers the long-term interests of many stakeholders instead of short-term opportunistic behavior. Management theory is applied to the sustainability of the company as it considers the strategic decisions and actions of management as the behavior that serves a valuable shared end, bringing about social benefits and long-term association (Hernandez, 2012).

The sixth theory, the Institutional Theory focuses on the role of normative influences in decision-making processes that affect organizational structure and provides a useful framework structure, in solving many problems, conditions and challenges leading to institutionalization. It focuses on the social aspects of decision making, the

conditions under which investment decisions on CSR or environmental initiatives are implemented and possible impacts on the environment and communication.

2.2. Overview of Research and Development of Research Hypotheses

2.2.1. Foreign Research

Craswell and Taylor (1992) argue that the level of oil reserves of Australian business units is affected by factors such as the size and expected costs of the company; Hackston and Milne (1996) studied 50 large firms in the New Zealand stock market by the end of 1992 to come to a conclusion that there are four factors that influence the publication of such environmental and social information: company size, profitability, business lines and the country of business ownership and enterprises. The most extensive is the study of Frias-Aceituno *et al.* (2012) based on the analysis of data of 1590 multinational companies in twenty different countries from 2008 to 2010. It showed that scale, profitability, the business sector, the business position and growth opportunities all affected the publication of sustainable development information.

Research by Renard *et al.* (2013) for 44 listed construction companies in the Australian stock market showed a more positive impact on users when businesses published non-financial information related to environment, health and occupational safety. In the study of Ndukwe and John (2015) for fifteen oil and gas companies operating on the Nigerian stock market in the fiscal year 2008-2013, only two factors could negatively affect corporate social information disclosure: firm size and profitability and that business leverage and the quality of the audit firm did not affect disclosure.

2.2.2. Domestic Research

There has been research carried out by several agencies and academics in the past on how sustainable development can be audited and accounted for and the establishment of reporting indicators for sustainable development in corporations. However, there is still very little research and documentation on how sustainable development is accounted for or audited in corporations and how it is then reported. Some of the work that has been done is listed below.

Phan (2016) studied the factors affecting sustainable development in fisheries enterprises in the Bac Lieu province based on the theoretical model of sustainable development of small and medium enterprises which included nine elements, inheriting five original elements and adding four new elements from relevant research: market trends, product liability; prevention of field pollution and social security. The work identified nine factors affecting sustainable development of fisheries enterprises and built a scale for each element through qualitative research results combined with quantitative research results.

The authors Nguyen and Nguyen (2017) when studying the influence of factors on environmental information disclosure of listed companies on Vietnam Stock Market, proposed a model of factors affecting environmental information disclosure including: enterprise size, capital structure, profitability, and the type of business. The study's surveyed 80 enterprises listed on two stock markets: the Ho Chi Minh City Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX) in 2015. Survey results showed that the larger the enterprise is, the more demand it has to disclose environmental information and that the higher the debt-to-equity ratio is for companies, the higher the demand for information disclosure to create trust and to attract capital from investors. Profitability is also a positive factor for businesses on the stock market in terms of publishing information on cost savings and increasing future benefits.

Hoang (2017) in her research on the accounting for environmental cost management in the oil and gas processing enterprises of Vietnam National Oil and Gas Group has discovered and measured four groups of factors affecting the application of environmental cost management accounting.

In summary, previous studies have explored the basic theoretical framework for sustainability reporting and there have been some studies used in some countries. The gap identified in the above foreign studies is that there are no established criteria in sustainable development for what affects a particular business sector or industry in a particular country. With regard to domestic research and projects, many authors highlight that this is an essential and important field for Vietnam to conduct research in and to develop a system of reporting for. However, many authors specifically referred to experiences and factors in other countries as opposed to what is occurring in Vietnam currently.

2.2.3. Research Models and Hypotheses

After considering the following studies: Craswell and Taylor (1992); Hackston and Milne (1996); Frias-Aceituno *et al.* (2012); Nguyen and Nguyen (2017) the authors propose the following theoretical research model (All hypotheses have positive forecasts (+)):

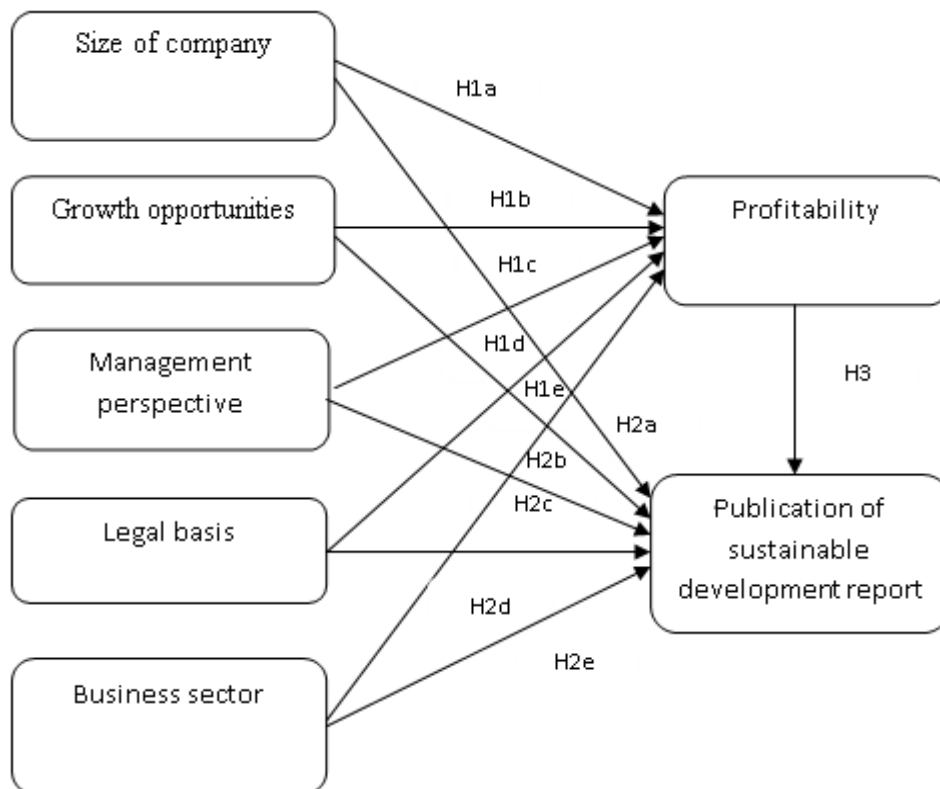


Figure-1. Proposed research model.

Source: Suggested by authors based on literature review.

3. RESEARCH METHOD

To test the research hypotheses, the study collected data by interviewing nearly 300 managers from the department level and above currently employed at 60 petroleum trading enterprises within the Vietnam Petroleum Group across provinces and cities nationwide. 275 questionnaires were collected from 11/2017 to 8/2018 of which 265 were processed as complete. The minimum number of samples needed was originally calculated to be 145 samples so the actual sample size was appropriate as , the result of the number of questionnaires to be according to Bollen (1989) the appropriate ratio for selecting the sample size with the number of parameters in the variable analysis must be 5: 1.

The questionnaires were designed with 29 observations with seven variables (see Table 2), using a Likert scale of five grades (Score 1: Very disagree; Score 5: Very agree). Questionnaires and scales were tested and adjusted in

three ways: qualitative research, ten expert interviews, and in-depth interview with ten managers. The survey results tested 30 samples.

The authors then verified the model with SPSS 20 software in combination with AMOS 20. The scales were calibrated through three techniques: Cronbach's Alpha reliability factor, EFA discovery factor analysis, and CFA confirmatory factor analysis. The proposed theoretical research model and research hypotheses were tested with the method of linear structure analysis (SEM) with AMOS software 20.

4. RESEARCH RESULTS AND DISCUSSION

The study analysed the survey results for each specific factor using the Original theory model. The results are as follows:

4.1. Descriptive Statistics on Research Samples

SPSS 20 software was used to conduct the analysis. Information on the research sample population (265 people) is presented in detail in Table 1.

Table-1. Descriptive Statistics Sample.

Characteristics	Frequency	%
1. Sex	N = 265	100%
Male	228	86%
Female	37	14%
2. Age	N = 265	100%
Under 35	31	11.7%
35 -45	116	43.8%
Over 45	118	44.5%
3. Seniority	N = 265	100%
Under 5 years	20	7.5%
5 - 10 years	87	32.8%
Over 10 years	158	59.6%
4. Degree	N = 265	100%
Under bachelor	0	0%
Bachelor	145	54.7%
Over bachelor	120	45.3%

4.2. Testing of Cronbach's Alpha and EFA Variables

Cronbach's Alpha test results for the scale shown in Table 2 below show that these scales have Cronbach's Alpha coefficient > 0.6 and the total correlation coefficient > 0.3. Thus, no observed variables are excluded and the model includes 29 variables used in the subsequent EFA analysis.

The below analysis results show that the KMO coefficient > 0.5, the Batlett test has a p-value equal to 0,000 < 0.05, the variance extract > 50%, the coefficients factor loading is greater than 0.5 and the coefficient Eigen Value > 1. Thus, the standards when using EFA discovery analysis show that the factors are consistent with the research data set.

Table-2. Results of reliability analysis and factor analysis.

Content of factors	Coefficient						
	1	2	3	4	5	6	7
1. Publication of sustainability report (CBTT): Cronbach's Alpha = 0.942							
CBTT1_ Disclosure of information affecting the environment	0.855						
CBTT2_ Disclosure of information affects society	.847						
CBTT3_ Disclosure of information affects the economy	.813						
CBTT4_ Voluntary disclosure of information	.808						
CBTT5_ Disclosure of information is transparent and accurate	.794						
2. Size company (QMDN): Cronbach's Alpha = 0.901							
QMDN1_ Scale of number of employees		.920					
QMDN2_ Scale of market capitalization		.857					
QMDN3_ Revenue scale		.846					
QMDN4_ Scale of total assets		.827					
3. Business sector (LVKD): Cronbach's Alpha = 0.899							
LVKD1_ Business sector contributes high income value			.886				
LVKD2_ Impact of the business sector of the unit on the environment			.873				
LVKD3_ The impact of the business sector on labor at the unit			.830				
LVKD4_ Important business areas in the economy should need information transparency			.820				
4. Growth opportunities (CHTT): Cronbach's Alpha = 0.893							
CHTT1_ The more transparent the information, the easier it is to attract investment from investors				.863			
CHTT2_ Deliberately disclosing false information to attract investors				.848			
CHTT3_ Disclosure of false information helps increase investment leverage for businesses				.839			
CHTT4_ Expand the market, increase the image in the eyes of customers				.824			
5. Legal basis (CSPL): Cronbach's Alpha = 0.892							
CSPL1_ Mandatory regulations of the Government on information disclosure					.912		
CSPL2_ Group specific guidance on information disclosure					.894		
CSPL3_ The department is responsible for monitoring the quality of information					.842		
CSPL4_ Legal standards when participating in regional and world organizations and forums					.788		
6. Profitability (KNSL): Cronbach's Alpha = 0.834							
KNSL1_ Profitability on total assets						.799	
KNSL2_ Profitability on increasing equity						.722	
KNSL3_ Profitability on revenue						.693	
KNSL4_ Profitability of the brand in the future						.686	
7. Management perspective (QDQL): Cronbach's Alpha = 0.739							
QDQL1_ Conflicts of interest between owners and managers at the unit							.825
QDQL2_ Disclosure of information in the direction of personal interests does not follow information transparency							.807
QDQL3_ Not dominated by superiors when disclosing information							.676
QDQL4_ Building a system of decentralization in information disclosure							.624
KMO = .864; Bartlett's Test (Chi-Square = 5072,122; df = 406; Sig. = 0.000); Variance extracted = 74.078%; Eigenvalue = 1,183 - 7,622)							

4.3. Results of Factor Analysis Confirmed CFA

Table-3. Results of general reliability test, variance of concepts.

Observed variables	Symbol	Number of observations	Composite reliability (CR)	Variance extracted (AVE)
Growth opportunities	CHTT	4	0.972	0.896
Legal basis	CSPL	4	0.951	0.830
Management perspective	QDQL	4	0.947	0.823
Size of company	QMDN	4	0.933	0.777
Business sector	LVKD	4	0.961	0.864
Profitability	KNSL	4	0.965	0.874
Publication of sustainable development report	CBTT	5	0.974	0.884

Based on Table 3, we see that the C.R composite reliability is greater than 0.7, the total variance extract (AVE) is greater than 50%, so it can be concluded that the components in the scale achieve reliability and convergence.

Figure 2 with the CFA analysis results shows that the model has 356 degrees of freedom, the CFA value is $p = 0,000$; the GFI value is 0,895; RMSEA = 0,034; Chi-Square = 463,243; Chi-Square/df = 1,301; TFI = 0,974; and CFI = 0,977 are all greater than 0.9. Comparison with the requirements of Schumacker and Lomax (2004) on Chi-square/df coefficient of ratio < 5 , Hair et al. (2006) with TLI $> 0,90$, p-value $< 0,05$, RMSEA $< 0,07$, and Hu and Bentler (1999) suggested CFI of $> 0,95$ indicates that this model is consistent with actual data.

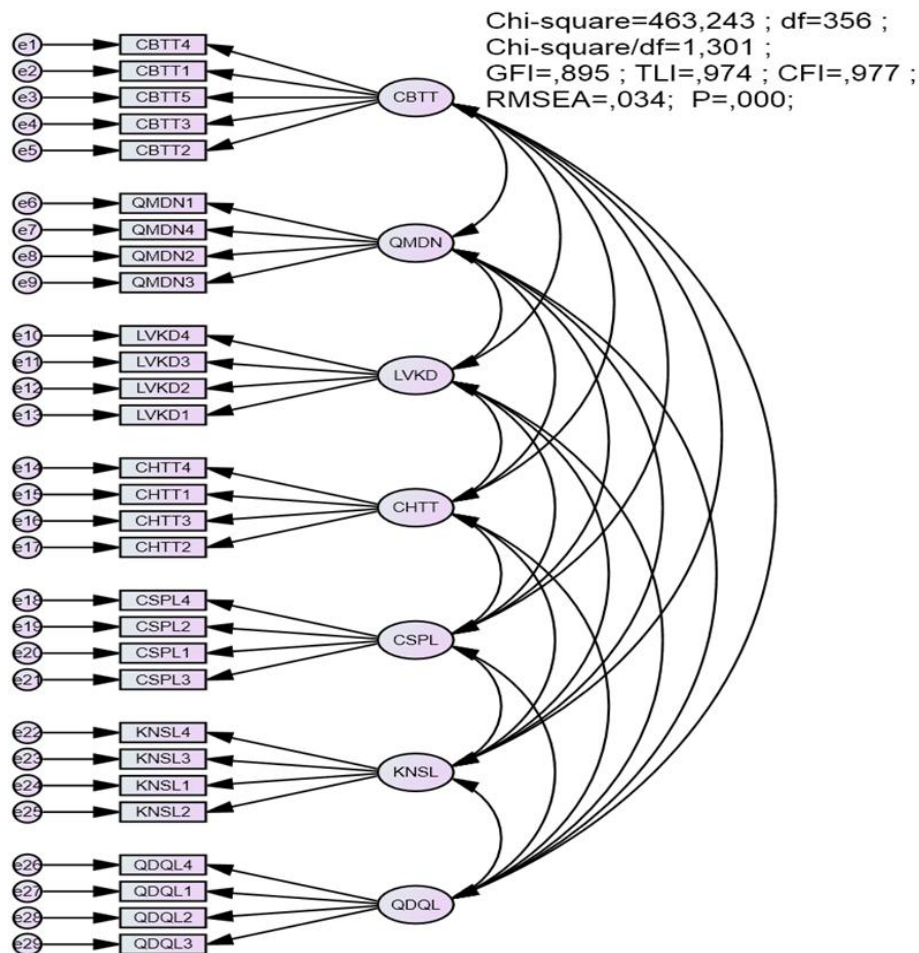


Figure-2. Standardized CFA results.

4.4. Testing Models and Research Hypotheses

4.4.1. Inspection of Research Model

The authors used SEM to test existing models and research hypotheses. The estimation results of the research model show that the test model has 366 degrees of freedom ($p = 0,00$) and the indicators show appropriate models with data collected from the market (Chi-square / $df = 1,323$; GFI = 0,891; CFI = 0,975, TLI = 0,972 and RMSEA = 0,035).

The main parameter estimation results show that both relationships are statistically significant ($p < 0,05$). Thus, the relationship of concepts has achieved theoretical expectations.

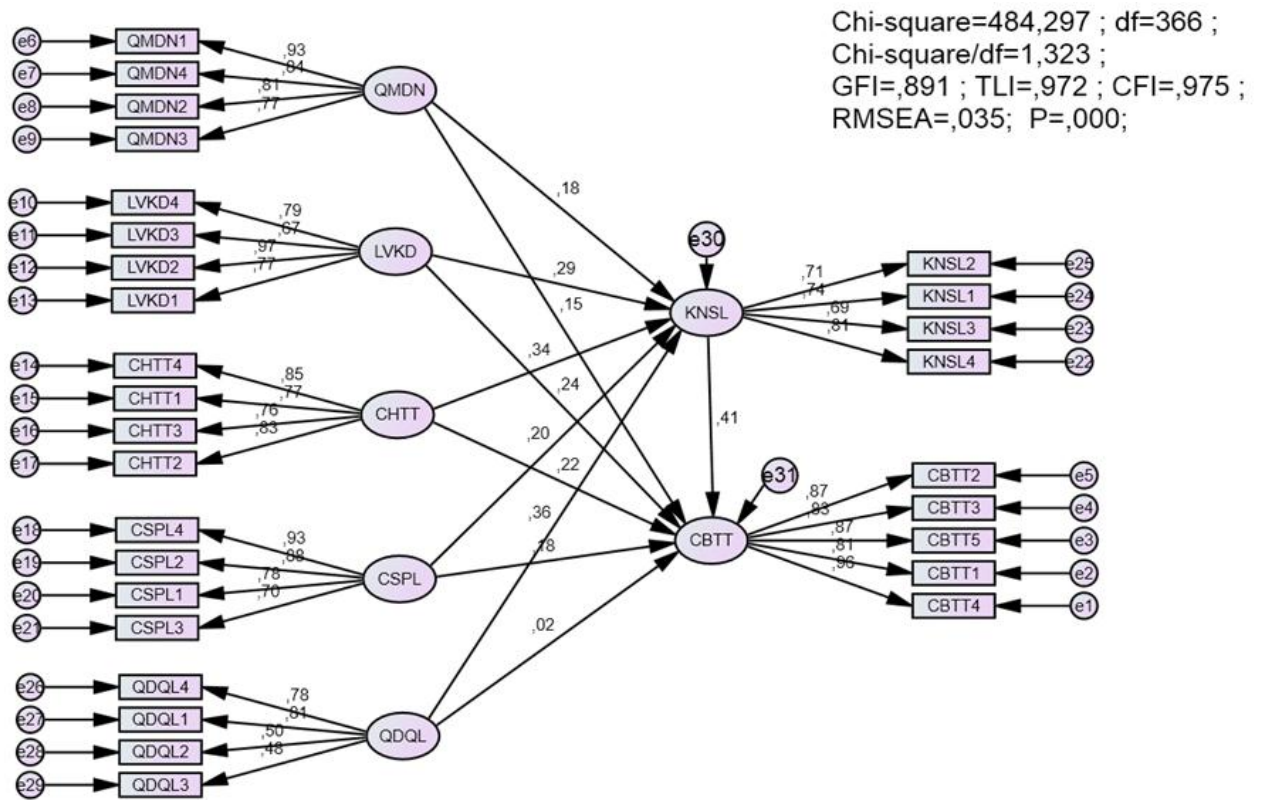


Figure-3. SEM results of the formal research model (standardized).

4.4.2. Testing Research Hypotheses

Test hypotheses of the research model as follows:

Table-4. Results of hypothesis testing.

Variables		Estimate	S.E.	C.R.	P	Reasoning
KNSL	<--- QMDN	.091	.030	3,000	.003	Accept H1a
KNSL	<--- LVKD	.164	.034	4,834	***	Accept H1e
KNSL	<--- CHTT	.193	.036	5,329	***	Accept H1b
KNSL	<--- CSPL	.108	.033	3,283	.001	Accept H1d
KNSL	<--- QDQL	.210	.040	5,305	***	Accept H1c
CBTT	<--- QMDN	.117	.041	2,866	.004	Accept H2a
CBTT	<--- LVKD	.210	.048	4,380	***	Accept H2e
CBTT	<--- CHTT	.195	.052	3,760	***	Accept H2b
CBTT	<--- CSPL	.157	.045	3,515	***	Accept H2d
CBTT	<--- QDQL	.019	.055	,348	.728	Rejected H2c
CBTT	<--- KNSL	.644	.120	5,371	***	Accept H3

5. CONCLUSIONS

The study has modeled the relationship between the publications of sustainability reports with the following factors: business size, growth opportunities, business areas, management perspective, and legal basis reason and profitability. Hypothesis test results show that 10/11 initial assumptions were accepted. These hypotheses are consistent with the research results that the authors have explored and referred to when assessing the factors affecting the publication of sustainable development information in the form of environmental reports or reports, Craswell and Taylor (1992); Frias-Aceituno *et al.* (2012) except for the relationship between the management's perspective and publication of Sustainable Development Report. Thus, the research results of petroleum enterprises in the Vietnam National Petroleum Group are similar to those of other countries such as Australia and Nigeria.

With the above research results, enterprise size has a direct relationship to the publication of sustainable development reports. Therefore, managers at petroleum trading enterprises within the group need to pay attention to the publication of sustainable development reports, as this is considered a solution to help businesses transmit information to local people, state management agencies that supervise the unit's activities, which helps create favorable conditions for businesses to do business, increase asset size and turnover in the industry.

In addition, the publication of sustainable development reports by enterprises will help investors, customers and suppliers have sufficient information to make cooperative decisions thereby improving business growth opportunities. In the published information, business managers should disclose transparent and clear information about the structure of selling prices of products they sell, separating between product value and types Additional taxes added.

According to our research results, the business sector is a factor influencing the publication of sustainable development reports. Therefore, managers at enterprises of Vietnam National Petroleum Group should focus on building specific indicators published in the report. Enterprises should publish data related to production costs, tax obligations in product prices, costs related to remediation and ensure the environment and obligations for residents around the production area. Because the oil and gas industry has a great impact on the environment because its products are produced according to processes that have a huge impact on the environment.

The legal factors are an element that managers at the enterprises think needs to be changed to improve the quality of information disclosure on sustainable development. Currently in Vietnam, after Circular 155/2015 / TT-BTC was issued and it was made compulsory for enterprises to publish sustainable development reports, there has been almost no support for, adherence to or enforcement of the law. Only some enterprises have published this report including within the Bao Viet Group, the Hau Giang Pharmaceutical Joint Stock Company, the FPT Corporation, and the Vietnam Dairy Products Joint Stock Company (Vinamilk). Previously when state management agencies had detailed and specific regulations on the compulsory nature of the publication of sustainable development reports, senior managers at the Vietnam National Petroleum Group also needed to research or build their own evaluation criteria for businesses belonging to their group according to a set of guidelines for making sustainable development reports that were issued by the State Securities Commission (SSC) and the International Financial Federation (IFC).

Profitability is positively impacted by improving the quality and quantity of the information disclosed so this is something the managers should continue to focus on in the future: if the socio-economic and environmental information is more transparent, there will be an increase in revenue due to an increased level of trust in the business from consumers in terms of what the business does for the environment and society. More importantly, it impacts on the Vietnam National Petroleum Group's future profitability and brand awareness and can help create a brand that has long term customer loyalty for its perceived values and actions. This would give it an edge over its competitor's particularly big foreign brands.

The research presented above shows that the managers at Vietnam National Petroleum Group have not paid much attention to the importance of reporting on sustainable development and the prevalent attitude on disclosing

such information has been that it should be “when it is required to publish” or when it is absolutely necessary which is indicative of traditional state management thinking. This is what the senior leaders within the group need to change as soon as possible so that the group’s enterprises can implement the reporting structures and procedures according to the policy guidelines. Although the study has achieved some certain results, the research still has some limitations. The scope of research and survey of authors is only limited to the enterprises of petroleum business in the Vietnam National Petroleum Group, not the entire petroleum trading industry in Vietnam. Therefore, the research sample is not large enough and may encounter certain limitations. Due to the low cost, time and ability of direct access to the survey subjects, the sample size and sample quality are not as expected although the survey sample size was guaranteed according to the data requirements and data analysis.

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