

External Stakeholders' Pressure on Environmental Accounting Reporting in SMEs in Shanxi Province, China

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Abstract— This paper investigates the effect of the pressure from external stakeholders on Environmental accounting reporting (EAR) in SMEs in Shanxi Province, China. A total of 88 response was collected in this study. The data were analyzed by utilizing Partial Least Squares-Structural Equation Modeling (PLS-SEM) using SmartPLS 3.3.2. The empirical results showed that the customers in SMEs in Shanxi province, china were able to pressure the companies to implement environmental accounting reporting. The study also found that, suppliers' pressure do not have influence on environmental accounting reporting. The results of this study prove that customers think about environmental issues, because environmental accounting reports can improve the profits of SMEs in terms of environment, cost, high-efficiency technology, and low-pollution, non-pollution products, so that customers can buy cheaper and better quality products.

Keywords— Keywords: Environmental Accounting Reporting, Customers, Shareholders, PLS-SEM.

I. INTRODUCTION

With the rapid development of industry, environmental pollution has become increasingly prominent in the world, especially in China (Zhu, 2019). "Green environmental protection" has become the expectation of enterprises, countries and even the whole world. At present, the environmental pollution problem in Shanxi Province is particularly serious. This is because Shanxi is the largest coal-producing province in China (Chen, 2015), In China's current energy consumption structure, coal is the main energy consumption, accounting for 61.35%. Environmental accounting reporting have always been the focus of attention of environmental accounting scholars and company managers. The formal implementation of environmental tax has further enhanced the importance of environmental accounting reporting. Environmental accounting report refers to the environmental information related to the production and operation activities of the enterprise released by the government or enterprise in some form (such as the sustainability report) (Meng, 1999), and inform the public of the measures taken by the company to fulfil its environmental responsibilities. Thereby encouraging the public to protect the environment, reduce environmental damage, and promote the harmonious development of social economy and environment (Zhao & Patten, 2016).

In the early stage, the research on environmental accounting reporting mainly focused on the internal

characteristics of enterprises, such as size and profitability, etc. With the advancement of the research, the perspective gradually shifted from the internal to the external, that is, how the external factors of enterprises affect the environmental accounting reporting. Among them, economic pressure and political pressure are the main research objects. However, few studies have explored its impact on environmental information disclosure from an economic perspective. In order to explain how economic pressure drives enterprises' environmental accounting reporting, this paper analyzed the impact on environmental accounting reporting from the perspective of external economic stakeholders.

Stakeholder pressure is considered to be one of the most important factors affecting corporate environmental management. Identifying stakeholder groups that may have a significant impact on the EAR can expand the current knowledge of the EAR in the literature. In addition, the identification of stakeholders can improve the company's EAR, bringing benefits to both company and stakeholders. The external economic stakeholders of a company could have a significant impact on the formation of EAR because economic stakeholders can influence the company's internal decisions through market transactions. According to Fan & Cheng (2019), customers and suppliers play an important role in the economic stakeholders. Therefore, this study focuses on investigating the followings: (1) whether the pressure from customers affects EAR; and (2) whether the pressure from suppliers affects EAR.

In addition, whether the pressure from suppliers will affect the EAR still debatable in China. Some scholars argue that supplier is not support the EAR (Lv, 2017; Yin, 2018), and some scholars have opposite view (Gunawan, 2015; Yin, Shi & Wang, 2015). Therefore, the researcher adds this factor into external economic stakeholders to determine this result. The main contribution of this paper is to improve the environmental accounting reporting of SMEs. This paper examines various economic stakeholders' pressure that influences companies to improve environmental accounting reporting in different ways. These pressures can stimulate companies to improve their environmental performance, promote corporate environmental performance, and further increase corporate profits.

II. LITERATURE REVIEW

A. Environmental Accounting Reporting

Environmental accounting is an important branch of modern accounting. It integrates the basic theories of accounting and environmental economics, reasonably records costs and benefits from the perspective of social benefits according to environmental laws and makes monetary measurement reports with certain methods (Meng, 1999). Through comprehensive evaluation of enterprises' environmental performance and environmental activities, environmental accounting can coordinate economic development and environmental protection and improve the overall social benefits.

Environmental accounting report is the final result of environmental accounting work. It provides stakeholders with information about the fulfilment of corporate environmental responsibility and useful information for decision-making, so as to truly reflect the value of an enterprise (Meng, 1999). Most users of environmental accounting reporting are those who have economic interests with the company. Therefore, this study coincides with the current needs to influence firms to be more sensitive to the pressure of external economic stakeholders such as customers and suppliers of an enterprise in working together protecting the environment. This is to ensure so that future generations can continue enjoying the benefits from a sustainable environment.

B. Customers and Environmental Accounting Reporting

Customers are mainly concerned about product quality and after-sales service information. For companies, finding customers is not only a limited sales volume, but also more and more attention to long-term cooperative relationships with customers (Liu, 2012). Customers are the only way for an enterprise to realize sales and create value. Corporate reputation and product premiums come from customers' recognition of corporate behaviour and values embodied in products (Fan & Cheng, 2019). Therefore, customers have full influence on the enterprise environmental accounting reporting.

A survey conducted by AC Nielsen in 2013 showed that with the increasingly serious haze problem, customers showed preference for environmentally friendly products, and more and more customers expressed their willingness to use their actual actions to promote the company to fulfil its environmental responsibility, and they were willing to pay slightly higher price for this to encourage environmentally friendly enterprises. In the face of the increasing demand, the hot sale of goods with green environmental protection logo may make enterprise managers treat the fulfilment of social responsibility as an important obligation of the company to further improve the environmental performance. Fan & Cheng (2019) studied the environmental governance of companies and found that customers with currency "voting rights" can effectively promote clean production and open environmental information construction by putting forward good ecological environment requirements to companies. Therefore, we propose the following hypothesis:

H1: There is a significant effect of the pressure from customers on environmental accounting reporting.

C. Suppliers and Environmental Accounting Reporting

Suppliers are mainly concerned with the enterprise's ability to pay and business credit. Maintaining good relationship with suppliers is one of the conditions for enterprises to gain strategic competitive advantage. For suppliers, the provision of environmentally friendly production equipment by suppliers will promote the improvement of environmental quality of enterprises, thus improving the environmental accounting reporting of enterprises (Liu, 2012). In order to increase the sales of environmentally friendly products, suppliers take the initiative to help their purchasers (i.e., enterprises) develop products containing their environmentally friendly technologies (Fan & Cheng, 2019), enabling enterprises to improve their environmental performance.

In the current network developed, the enterprise's irresponsible behaviour will also bring negative impact to suppliers (Yin, Shi, & Wang, 2015). When a negative environmental event occurs to an enterprise, suppliers' willingness to supply will be seriously affected due to concerns about their reputation and the ability to collect accounts. For enterprises, without sound and reliable supplier resources, it is difficult to maintain competitiveness in the rapidly changing market environment. Therefore, suppliers will choose enterprises according to the performance of corporate social responsibility, and suppliers get information mainly from the external environmental accounting reports of enterprises. For these reasons, suppliers will put pressure on companies to disclose relevant environmental accounting reports. Therefore, we propose the following hypothesis:

H2: There is a significant effect of the pressure from customers on environmental accounting reporting.

III. METHODOLOGY AND DATA ANALYSIS

In this study, we chose a quantitative approach and used the stakeholder theory to explain the conceptual framework. Our respondents were external stakeholders which consist of customers and suppliers of small and medium enterprises in Shanxi Province, China. We utilize a non-probability sampling technique known as purposive sampling to ensure our data for this survey was from reliable sources. Afterwards, a 5-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5) was adopted as a measurement for the independent variables and dependent variable. We used G*power 3.0 software to estimate the sample size (Faul et al., 2007) for F test- Linear multiple regression: Fixed model, R² deviation from zero by applying the effect size of f² 0.15, a significant level of 0.05 (α), and a desired power of 0.80 ($1 - \beta$). Thus, we needed 68 respondents as our minimum sample for this study. Therefore, we distributed 120 questionnaires, and 88 completed, and usable copies were recollected. Figure 1 depicted the research framework that contained statements of three variables under investigation. The variables were examined using multiple items (Hayduk & Littvay, 2012), and the data was then analyzed using SmartPLS 3.3.2 (Ringle, Wende, & Will, 2015) to assess the hypotheses.

Framework and Hypotheses Development

The literature review was conducted to scrutinize the determinants of environmental accounting reporting and discovered that customers and suppliers play a significant role in environmental accounting reporting. Customers' and suppliers' pressure are the independent variables, while environmental accounting reporting is the dependent variable in this study. We espouse stakeholder theory to help us understand how customers and suppliers create value to the companies (employers) through environmental accounting reporting. Based on the literature mentioned above, this study proposes a conceptual model, as illustrated in Figure 1. Therefore, we formulated two hypotheses to correspond with the objectives of this study.

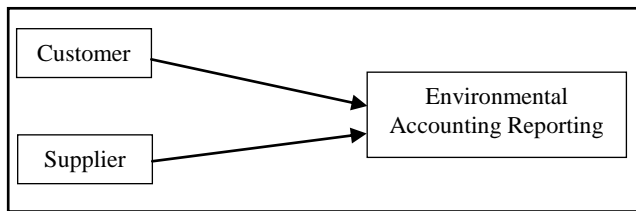


Fig. 1. Research Framework

H1: There is a significant effect of the pressure from customers on environmental accounting reporting.

H2: There is a significant effect of the pressure from suppliers on environmental accounting reporting.

IV. FINDINGS

A total of 88 effective research samples were obtained in this study. Table 1 shows the profile of the companies that describes period of operation, number of employees, and their operation sector. It can be seen in Table 1, most of the companies (45.45 percent) had been operating for 5-10 years, while 23.86 percent had been in the industry for 11-20 years. Moreover, 14.77 percent had been operating for 21-40 years whereas 10.23 percent were among the recently set up companies in less than 5 years. There were only 5 companies (5.68 percent) in this study that had been in the industry for over 40 years.

The research samples of this study are relatively dispersed, including various types of enterprise personnel, as shown in table 1. Most companies (29.55 percent) have 201-400 employees, followed by 25 percent that had 51-100 number of employees. Furthermore, 23.86 percent had employees about 101-200, 12.5 percent had 1-50 employees, whereas only 9.09 percent had more than 401 employees.

In highlighting the sectors in which the companies were involved in, the samples cover a variety of industries, representing the overall situation of environmental accounting report. Specific analysis of the sectors is shown in table 1. The construction industry accounted for a relatively high 17.05 percent; Mining is 10.23 percent. Manufacturing, energy, Synthesis Industry, Agriculture, Forestry, Livestock and Fishery, Accommodation and Catering, Repair Services is 5-10 percent, while other industries are less than 5 percent.

Reliability refers to the degree of consistency of

measurement indicators under the construct (Mugenda & Mugenda, 2003). Generally, the loading factor, average variance extracted (AVE), and reliability derived from the analysis of the measurement model for all variables were loading factor > 0.60, Cronbach's alpha >0.60, composite reliability > 0.70 and AVE > 0.50 (Henseler, Ringle, & Sarstedt, 2015).

TABLE 1. Profile of Respondents

Demographic Variables	Categories	Frequency	Percentage
Period of Operation	< 5 years	9	10.23%
	5-10 years	40	45.45%
	11-20 years	21	23.86%
	21-40 years	13	14.77%
	>40 years	5	5.68%
	Total	88	100.0%
No. of Employee	≤50	11	12.50%
	51-100	22	25.00%
	101-200	21	23.86%
	201-400	26	29.55%
	>400	8	9.09%
	Total	88	100.0%
Sector	Agriculture, Forestry, Livestocks and Fishery	6	6.82%
	Mining	9	10.23%
	Manufacturing	8	9.09%
	Energy	7	7.95%
	Construction	15	17.05%
	Sales Services	4	4.55%
	Transportation	4	4.55%
	Accom and Catering	5	5.68%
	IT	0	0.00%
	Financial Services	4	4.55%
	Property	4	4.55%
	Services	2	2.27%
	Government Agencies	2	2.27%
	Repair Services	5	5.68%
	Education	2	2.27%
	Health Care	3	3.41%
	Media	2	2.27%
	Synthesis Industry	6	6.82%
	Total	88	100.00%

From the table 2, it can be seen that the loading factor of all variables is > 0.60, the Cronbach's alpha coefficient values of all variables is >0.7, the composite reliability of all variables is >0.7, indicating a good internal consistency. The AVE of the measurement indicators in this study can be seen in table 2. The AVE of all variables is >0.50, indicating that the measurement indicators meet the requirements of aggregate validity.

TABLE 2. Measurement Model Assessment

Construct	Items	Loadings	CA	CR	AVE	AVE > 0.5
Customer	Customer1	0.816	0.834	0.879	0.548	Yes
	Customer2	0.702				
	Customer3	0.650				
	Customer4	0.733				
	Customer5	0.804				
	Customer6	0.725				
Supplier	Supplier1	0.701	0.801	0.858	0.503	Yes
	Supplier2	0.766				
	Supplier3	0.757				
	Supplier4	0.726				
	Supplier5	0.649				
	Supplier6	0.644				

Recently, an alternative measurement of discriminant validity has been developed, which is heterotrait-monotrait ratio (HTMT). In this study, we also used HTMT to test the discriminant validity. It can be seen from table 3 that the value of HTMT is less than 0.90 (Gold, Malhotra, and Segars, 2001), therefore the discriminant validity conforms to the standard.

TABLE 3. HTMT Criterion

	Customer	Supplier
Customer		
Supplier	0.602	

Assessment of Structural Model

After ensuring that all indicators of the measurement model are acceptable, the next step is to evaluate the structural model that shows its role and capabilities. Indicators that should be examined and reported initially are path coefficient significance, R square values, effect size (f²), and predictive relevance (Q²) (Hair et al., 2014).

In this study, the indicator values were obtained through a bootstrapping with re-samples of 5000. Table 4 presents the path coefficient result for the hypothesis. The threshold of p-value is less than 0.05 as proposed by Hair et al. (2017). Therefore, it can be seen in table 4 that H1 is supported whereas H2 is not supported.

TABLE 4. Path Coefficients

Direct Effects	Beta	S.E.	t-value	p-value	Decision
H1: Customer -> EAR	0.771	0.095	8.122	0.000	Supported
H2: Supplier -> EAR	0.208	0.113	1.833	0.067	Not supported

The thresholds of effect size (f²) > 0.02 means week effect, while > 0.15 means moderate effect, and > 0.35 means strong effect (Cohen, 1989). According to Cohen 1989, R² values should be more than 0.26. Q² > 0.00 means large, 0.02 ≤ Q² < 0.15 means week predictive power, 0.15 ≤ Q² < 0.35 means moderate predictive power, and ≥ 0.35 means strong predictive power. Additionally, the inner VIF values that need to be tested are less than 5 (Diamantopoulos & Siguaw, 2006). From table, we can know the effect size (f²) was 0.035, which means a week effect. R² measures the model's predictive accuracy and higher values indicate higher levels of predictive accuracy. In this study, the R² value was 0.796, so the result of R² value was considered substantial. All the VIF (< 5) fit for the standard and the structural model can be recommended. The predictive relevance (Q²) from table values is greater than 0.35, which means strong predictive power.

TABLE 5. Model Quality Assessment

No.	Relationship	R ²	Q ²	f ²	VIF
1	Customer -> EAR	0.796	0.444	2.196	1.325
2	Supplier -> EAR			0.60	1.325

V. DISCUSSION

The main concern of this study is to examine whether the pressure from external stakeholders (customers and suppliers) would have an impact on Environmental Accounting Reporting. The findings will be valuable for the managers in

SMEs in Shanxi province, China, specifically, as well as all companies in developing countries in general. Based on the analysis, we can see the results which indicate that H1 is supported but H2 is rejected.

The research results of H1 and Huang and kung (2010) indicating that customers support the EAR (Environmental accounting reporting). As the general public's awareness of environmental protection has increased, "green consumption" has gradually become popular. When customers buy products, they not only pay attention to the quality, function, and price of the product, but also see whether the product is beneficial to environmental protection. The product is in the production process whether it has caused pollution to the environment. The environmental accounting report of a company is the main channel for customers to communicate with the company. Customers will choose whether to purchase products based on whether the company reports this information. In order to make a profit, a company must use various means to communicate with customers, pass the company's products and environmental information of the production process to customers, and meet their needs for products and environmental information related to the production company.

On the other hand, the results indicating H2 is not supported, was also same with Yin (2018) who found that pressure from suppliers didn't influence EAR. The reason for suppliers do not have enough pressure to make enterprises disclose environmental accounting reports is that most suppliers only care about whether they can continue to provide products to the company and recover the payment on time, and rarely pay attention to environmental issues related to the company. In addition, suppliers are a disadvantaged group in front of enterprises, and they have no bargaining power and need to rely on enterprises to survive.

In response to the above situation, the supplier should force the company to fulfill its environmental responsibilities and disclose related reports. If the company does not comply, the supplier shall refuse to provide products for it. In addition, suppliers should also pay attention to improving their environmental awareness and produce environmentally friendly products. If the company's product sources are guaranteed by the environment, the product market will be relatively large, the company's profits will be more, and the corresponding supplier sales will increase.

VI. CONCLUSION

This study sets out with the objective to investigate the effect of the pressure from external stakeholders on environment accounting reporting of SMEs in Shanxi province, China. The results show that the pressure from customers plays a leading role in promoting EAR of SMEs in Shanxi Province, China. However, the pressure from suppliers did not have an effect on EAR. These results support the view that managers of SMEs in Shanxi Province attaches great importance to the customer care about environmental issues, active disclosure of environmental accounting report, then can improve the small and medium enterprises in the environment, inventory and cost control, pollution less efficient technology and pollution-free product performance, and improve sales,

earn more profits. This research is also considered important because it can raise awareness of environmental protect among SMEs in Shanxi province.

Nevertheless, this study also has some limitations, which attributed to the following two aspects. First, from the perspective of managers, this paper explores the role of external economic stakeholder pressure on environmental accounting reporting. There are many non-external economic stakeholders in enterprises, which may also have an impact on corporate environmental accounting. Therefore, future studies should explore independent effects or joint effects of other potential stakeholders based on this research framework. Second, it only explores the direct impact of external stakeholder pressure on environmental accounting reporting of SMEs in Shanxi Province, ignoring the impact of other provinces and enterprises. Therefore, future research can be extended to other provinces to expand the sample size and cover more enterprises, to make the results more generalizable.

REFERENCES

[1] A. Diamantopoulos, & J. A. Siguaw, "Formative versus reflective indicators in organisational measure development: A comparison and empirical illustration". *British Journal of Management*, 17(4), pp. 263-282, 2006.

[2] A. H. Gold, A. Malhotra, and A. H. Segars, "Knowledge management: An organisational capabilities perspective". *Journal of Management Information Systems*, 18(1), pp. 185-214, 2001.

[3] C. L. Huang, & F. H. Kung, "Drivers of Environmental Disclosure and Stakeholder Expectation: Evidence from Taiwan". *Journal of Business Ethics*, 96(3): pp. 435-451, 2010.

[4] C. Ringle, S. Wende, and A. Will, "SmartPLS 3.3.2". Retrieved from <http://www.smartpls.com>. 2005.

[5] F. Faul, E. Erdfelder, A.-G. Lang, and A. Buchner, "G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences". *Behavior Research Methods*, 39, pp. 175-191, 2007.

[6] F. L. Meng, fan li. "On environmental accounting information disclosure and related theoretical issues". *Accounting Research*, (4), 1999.

[7] F. Lv, (2017). Research on Driving Factors of Disclosure in Forestry Enterprises. NanJing University.

[8] G. Chen, Study on Disclosure of Environmental Accounting Information in Shanxi Coal Enterprises. Shanxi University of Finance & Economics, 2015.

[9] J. Cohen, *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates, 1989.

[10] J. Gunawan, "Corporate social disclosures in Indonesia: Stakeholders' influence and motivation". *Social Responsibility Journal*, 11(3): pp. 535-552, 2015.

[11] J. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)". Thousand Oaks, California: Sage Publications, 2014.

[12] J. F. Hair, G. T. M. Hult, C. M. Ringle, M. Sarstedt, and K. O. Thiele, "Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modelling methods". *Journal of the Academy of Marketing Science*, 45, pp. 616-632, 2017.

[13] K. Yin, T. Shi, and Y. Wang, "Research on the Influence of Stakeholders on corporate social responsibility Information Disclosure". *Finance and Accounting Newsletter*, 1(5), 2015.

[14] L. A. Hayduk, & L. Littvay, "Should researchers use single indicators, best indicators, or multiple indicators in structural equation models?". *BMC Medical Research Methodology*, 12(159), 2012.

[15] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in variance-based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.

[16] L. Liu, "Research on the Influence of Stakeholders to the Environmental Information Disclosure". Hunan University. 2012.

[17] O. M. Mugenda, and A. G. Mugenda, "Research Methods: Quantitative and Qualitative Approaches", Acts Press: Nairobi. 2003.

[18] L. Yin, "Stakeholder pressure, Corporate environmental behaviour and environmental performance". Zhejiang University of Technology. 2018.

[19] N. Zhao, & D. M. Patten, "An exploratory analysis of managerial perceptions of social and environmental reporting in China: Evidence from state-owned enterprises in Beijing". *Sustainability Accounting, Management and Policy Journal*, 71: pp. 80-90, 2016.

[20] Q. Fan, and S. Cheng, "Research on the influence of external stakeholders on environmental information disclosure". *Friend of Accounting*, 1: pp. 132-137, 2019.

[21] Y. D. Zhu, "Summary of research on environmental accounting in China". *Communication of Finance and Accounting*, 803(39): pp. 10-16, 2019.