



Print ISSN: 2671-4981 / Online ISSN: 2671-499X  
 JBEES website: <http://www.ajbe.or.kr/>  
 Doi: 10.13106/ajbe.2021.vol11.no4.39

# Climate Change Disclosure Performance of Pharmaceutical Industry of Bangladesh

Shaily DAS<sup>1</sup>, Fatema Akter JENI<sup>2</sup>

Received: March 28, 2021. Revised: May 8, 2021. Accepted: October 5, 2021.

## Abstract

**Purpose:** This study is designed to investigate the extent and nature of climate change disclosure of listed pharmaceutical companies of Bangladesh. **Research design, data and methodology:** In order to perform this research, a content analysis methodology is used. A climate change disclosure index is constructed to examine 12 different climate change disclosure issues. Information is collected from the annual reports of 29 pharmaceutical companies listed on the Dhaka Stock Exchange for the year 2019. **Results:** This study finds that only 48.28% of the sample companies provided disclosure on at least one issue regarding climate change. ‘Energy savings’ is the mostly disclosed issue whereas ‘Pollution control expenditure’, ‘Biodiversity conservation initiatives’ are the least disclosed issues. **Research implication:** This study concludes 64.29% of the companies examined, use less than five sentences for climate change disclosure, which depicts unsatisfactory disclosure practices regarding climate change issues. Study findings would be helpful for different industries of Bangladesh to implement efficient climate change reporting Practice. Future studies can be conducted on other industries to obtain more comprehensive result.

**Keywords:** Annual Report, Climate Change, Dhaka Stock Exchange, Pharmaceutical Industry in Bangladesh

**JEL Classification Code:** F64, Q51, Q54

## 1. Introduction<sup>a</sup>

Each living being of the earth planet is reliant upon environment. Climate change has a direct impact on a wide range of social and economic issues, including poverty, well-being, and overall economic progress, it is more than just an environmental issue (ACCA, 2009).

Pender (2008) contended that human impact is currently accepted to be changing the environment a lot quicker than happening previously under natural systems. Since the beginning of industrial revolution around 1750, one of the ozone depleting substances, carbon dioxide, has expanded by more than 30%. It is currently at a higher fixation in the climate than it has been for a long time.

Bangladesh is one of the largest deltas worldwide and is exceedingly prone to climate change effects because of its geographical location, poverty, population compactness, and dearth of adequate infrastructural facilities. Bangladesh's government is opting for an effective climate change management strategy that will facilitate disaster risk reduction, low carbon emission, technology transfer and adequate financing (MoEF, 2019).

Unfortunately, laws concerning environment and climate change in Bangladesh are not implemented adequately. Bangladesh Environmental Protection Act delivers optimistic promises about environmental protection but it is not replicated practically. Significant barriers include institutional weakness of the implementing activities, deficiency of corresponding rules, omission of vital

1 First Author and Corresponding Author: Lecturer, Department of Accounting and Information Systems, Comilla University, Cumilla-3506, Bangladesh. Email: shailydas@cou.ac.bd  
 2 Lecturer, Department of Business Administration, Noakhali Science & Technology University, Noakhali 3814, Noakhali, Bangladesh. Email: fatemajeni73@gmail.com

© Copyright: The Author(s)  
 This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

environmental and climate change issues, and the nonappearance of functional synchronization among the related authorities (Khan & Belal, 1999).

There is a growing demand from stakeholders for firms to be more accountable and transparent due to growing awareness concerning climate change reporting. Both the rise in demands and level of awareness have caused firms to commence a variety of initiatives and activities to reveal their liability and concern on human rights and climate change substances (Ahmad & Haraf, 2013).

Multilateral organizations and governments have taken many initiatives to lessen the effect of climate change. Business entities are especially expected to be more accountable toward sustainability issues. Therefore, numerous organizations are currently keener on conveying sustainability issues influencing their activities with their stakeholders (Amran, 2017). In order to meet the stakeholders' demand, firms, especially publicly listed companies with the desire to be environmentally accountable, go the extra mile to communicate with the public through the disclosure of sustainability issues (Klerk, Villiers, & Staden, 2015)

According to legitimacy theory, business entities try to demonstrate that they are functioning within the society's prescribed rules and regulations. When the legitimacy of business entities is at stake, disclosures might be effective for improving the situation. Corporate social responsibility and voluntary disclosure on social and environmental issues are often used as impression management technique (Deegan & Unerman, 2006). Accordingly, Dey, Nakib, and Dutta (2017) studied climate change disclosures in annual reports of selected companies from different industries listed on the Dhaka Stock Exchange. Their study results find below average climate change disclosure practices by the Bangladeshi sample companies.

As a lower-middle-income nation (World Bank, 2015), Bangladesh's business organizations are increasingly being pursued to work on mitigating the effects of climate change. The domestic market for pharmaceutical products in Bangladesh has been expanding during the current decade at around 15 percent, and this market is expected to be worth between Tk 400 billion and 500 billion by the year 2022-2023 (The Daily Star, 2020). According to market statistics, the market size in 2018 was worth Tk 205.12 billion, with a growth rate of 9.36 percent. The corresponding figures for 2017 and 2016 were Tk 187.56 billion and Tk 156.40 billion alongside growth rates of 19.92 percent and 30.8 percent (IMS Healthcare Report, 2017).

There is a dearth of significant studies on climate change disclosure practice of pharmaceutical industry of Bangladesh. This study aims to analyze the nature and extent of climate change disclosures in annual reports of

pharmaceutical companies listed on the Dhaka stock exchange.

## 2. Literature review

Ahmad and Hossain (2015) analyzed climate change and global warming discourses of Malaysian companies taking a sample of 79 companies. This study tracked down that even though disclosure in regards to environmental change issues isn't required for Malaysian organizations, they are delivering a portion of these issues deliberately without being forced by the concerned position. By and by, this kind of disclosure is still at its preliminary stage.

According to the study of Dey et al. (2017), industries, including financial institutions, food & allied, and fuel & power, specified insufficient climate change-related issues in their annual reports. Their levels of disclosures are 22.12%, 20.51% and 27.69%, respectively. Apart from that, some other industries reported only one or two climate change issues in their annual reports.

The study of Belal, Kabir, Cooper, Dey, Khan, Rahman, and Ali (2010) observed the level of environmental and climate change disclosures in annual reports and websites of different Bangladesh industries. They discovered very insignificant disclosures. Besides, they referenced that a couple of companies made revelations in the particular fields of environmental change, however the extraordinary situation is the divulgence of just variation measures.

Some notable studies (e.g., Khan, 2016; Villiers, Naiker, & Staden, 2011) have been conducted on listed companies of Bangladesh (companies on the Dhaka and Chittagong stock exchanges) and have specified that companies were providing information in their annual reports regarding environmental, social, and human resource aspects, although in a scattered way. However, another significant finding is that environmental information disclosure is very inadequate despite a quick change in nature over the last couple of years (Rahman & Muttakin, 2005).

Climate change is an issue of utmost importance in Bangladesh concerning global warming. A recent empirical study assessed listed Bangladeshi companies on climate change reporting and discovered very poor disclosure on climate change as less than 3% of sample companies released climate-related information (Nurunnabi, 2015). There is no statutory or legal requirement for environmental and climate change disclosure in annual reports of companies in Bangladesh. However, regardless of having an absence of guidelines, it tends to be seen that not very many companies are making environmental disclosures in their annual reports altogether on a willing premise (Islam et al., 2020).

### 3. The objective of the Study

This study's primary objective is to find out the level of consciousness of the pharmaceutical industry of Bangladesh regarding the impact of their operations on climate change by analyzing the climate change disclosure practice of listed pharmaceutical companies of Bangladesh.

## 4. Methodology

### 4.1. Sample and Data

This study based solely on information from secondary data and is analytical in nature. For this study, 29 listed pharmaceutical companies were chosen among 32 companies listed on the Dhaka Stock Exchange. So, the sample size is 29 which represents ninety percent of the total population. Annual reports of the selected pharmaceutical companies for the year 2019 are used as the secondary data source for the purpose of the study. The annual report is generally recognized as a standard and widespread means of communicating with stakeholders (Hoque, Clarke, & Huang, 2016).

The pharmaceutical industry is chosen for the study because of its leading role in disclosing corporate social and environmental issues. Further, this sector is well known in Bangladesh for human activities (Azim & Azam, 2013). Climate change disclosures in the selected 29 listed pharmaceutical companies' annual reports have been analyzed, and a climate change disclosure index has been developed for this study.

### 4.2. Research Method

Based on secondary data, this study is empirical in nature.

Content analysis of the annual reports for the year 2018 is conducted to select the issues forming the disclosure index. Several disclosure indices are established by numerous researchers (Ahmad & Hossain, 2015; Belal et al., 2010). As per Mastrov & Shrives (1991), the degree of association by firms in disclosure practice on a specific issue can be seen with the disclosure index's assistance. The current investigation has established a climate change disclosure index. Current study has created a climate change disclosure index containing twelve issues concerning climate change disclosure. Where five issues are developed by the author and remaining is included from relevant preceding studies.

This study highlights the extent of disclosures on climate change-related issues, whether presented in the annual report or not. To quantify the content disclosure of climate change reporting, researchers have used a variety of different measures. For instance, Hackston and Milne (1996) utilized the number of sentences; Gray, Kouhy, and Lavers (1996) analyzed the number of pages. Furthermore, Ullah and Rahman (2015) analyzed numbers of words, sentences, tables, graphs, and charts. Prior studies have presumed that there is no distinct direction in the CSR literature for picking any action for content analysis.

The climate change disclosure index is constructed focusing on disclosure issues used in the studies of Dey et al. (2017), Ahmad and Hossain (2015), and Belal et al. (2010). Apart from that, some of the issues used in the disclosure index are added by the author.

**Table 1:** climate change disclosure index

SL No.	Issues	Source
1	Carbon emission control	Ahmad & Hossain, 2015; Belal et al., 2010
2	Renewable energy & solar panel usage	Dey et al., 2017
3	Tree plantation	Ahmad & Hossain, 2015
4	Air pollution control measures	Ahmad & Hossain, 2015; Belal et al., 2010
5	Effluent treatment plant (ETP) installation	Developed by author
6	Solid waste management	Developed by author
7	Energy savings	Ahmad & Hossain, 2015
8	Water management and pollution	Developed by author
9	Pollution control expenditure	Ullah et al., 2013
10	Recycling of waste materials	Developed by author
11	Conservation of natural resources	Ullah et al., 2013
12	Biodiversity Conservation initiatives	Developed by author

## 5. Results and Discussion

This section comprises the analysis of the nature and level of climate change disclosures by the sample companies. The following table demonstrates the general climate change disclosure practices by the Bangladeshi pharmaceutical companies.

**Table 2:** General climate change disclosures by the pharmaceutical industry of Bangladesh

Theme	Number of companies	Percentage (%)
Number of companies disclosing at least 1 issue	14	48.28%
Number of companies with no disclosure	15	51.72%
Total number of sample companies	29	100%

Table 2 shows that 48.28% of the sample companies disclosed at least 1 issue in their annual reports. However, 51.72% of the sample companies did not disclose any issue on climate change.

This study finds that the sample companies disclosed climate change related issues in different formats. Some disclosed distinctive actions to combat adverse impact on climate while some used only few floating sentences.

Accordingly, ACI pharmaceuticals Ltd. mentioned, "ACI is committed to formulate and conduct all its operations in an environmentally friendly manner, ensuring continual improvement in the utilization of resources and prevention of pollution or degradation of the environment." (ACI Ltd., 2020, p.2).

Besides, Acme Laboratories disclosed, "As a consequence of the conversion of the inhaler facility from CFC based to HFA based, during the year 2017-18, the company used 13,500 kg HFA gas through reducing the equivalent amount of CFC usage, which is a vital devil for global warming and ozone layer depletion." This company also received a certificate on outstanding contribution to climate change mitigation from the global climate partnership fund. (The Acme Laboratories Ltd., 2020, p.26).

Furthermore, Beximco pharmaceuticals Ltd. Stated, in its annual report, "Beximco has proper control over the waste generated from the plant. We have a giant treatment plant in Bangladesh to treat wastewater. Solid waste is incinerated in an incinerator. Dust generated during production is collected in a central dust collector. Other wastes like glass, paper, foil, film is recycled." (Beximco Pharmaceuticals Ltd., 2020, P.44).

**Table 3:** Range of sentences used by sample companies for climate change disclosure

Range of sentences	Number of companies	Percentage (%)
Below 5	9	64.29%
6-10	3	21.43%
11-15	1	7.14%
16-20	0	0%
Above 20	1	7.14%
Total	14	100%

Table 3 presents the measurements of disclosures by the number of sentences about different issues of climate change provided by the sample companies in their annual reports. 64.29% of the sample disclosing companies disclosed a maximum of 5 sentences concerning different types of climate change disclosures in their annual reports.

Besides, 21.43% of the disclosing companies disclosed 6 to 10 sentences. Finally, 7.14% of the companies disclosed various climate change issues thoroughly as they reported more than 20 sentences.

Table 4 demonstrates the extents of climate change disclosures by the sample companies' range of words in their annual reports. 7.14% of the disclosing companies disclosed above 400 words regarding climate change issues. However, the disclosure scenario of about 57% of companies is found to be substandard, as they used less than 100 words for climate change disclosure.

**Table 4:** Range of words used by sample companies for climate change disclosure

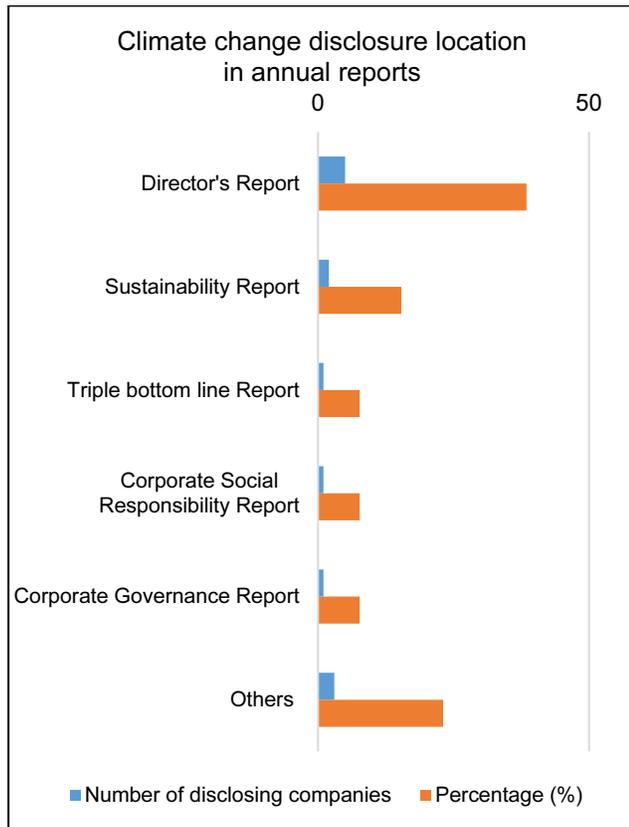
Range of Words	Number of Companies with disclosure	Percentage (%)
Below 100	8	57.14%
101-200	4	28.58%
201-300	1	7.14%
301-400	0	0%
Above 400	1	7.14%
Total	14	100%

Table 5 depicts the descriptive statistics of words and sentences used for disclosure by the sample companies. Companies have mentioned a minimum of 0 and a maximum of 730 words with a standard deviation of 141.74. Therefore, disclosure volume measured in words varies among companies significantly. Apart from that, companies have provided climate change disclosures using a minimum of 0 to a maximum of 39 sentences.

**Table 5:** Mean, standard deviation, minimum and maximum words and sentences

Descriptive Statistics	Word	Sentence
Mean	54.17	2.80
Standard deviation	141.74	7.45
Minimum	0	0
Maximum	730	39

Illustration 1 shows the location of annual reports, where the sample companies disclosed climate change issues. It is found that the companies’ under-study has used a variety of locations within the annual report to provide climate change-related disclosure. 38.47% of the companies provided climate change disclosure in the director's report while 15.38% of the companies disclosed in the sustainability report.



**Illustration 1:** Climate change disclosure location of sample companies

Table 6 illustrates the overall disclosure performance measured by the number of disclosure issues by the disclosing sample companies. Issue 7 (Energy savings) is disclosed by the highest number of companies. After that, issue 4 (Air pollution control measures) and issue 5

(Effluent treatment plant (ETP) installation) are disclosed by 6 of the disclosing companies. Nevertheless, issue nos. 9 (Pollution control expenditure), and 12 (Biodiversity Conservation initiatives) are the least disclosed issues, as just 1 of the companies has disclosed those.

**Table 6:** Overall disclosure performance of the sample companies

Issues	Number of companies disclosing the issue	Percentage of the total number of disclosing companies (14)	Percentage of the total sample (29)
1	3	21.43	10.34
2	2	14.29	6.90
3	4	28.57	13.79
4	6	42.86	20.69
5	6	42.86	20.69
6	4	28.57	13.79
7	7	50.00	24.14
8	5	35.71	17.24
9	1	7.14	3.45
10	5	35.71	17.24
11	3	21.43	10.34
12	1	7.14	3.45

Only 14 among the 29 sample companies made disclosures regarding the impact of their operation on climate change. The pharmaceutical industry produces medicines to save our lives, so stakeholders have much expectation that their operation will have no harmful impact on the environment.

Likewise, they are not required to provide any information concerning their effect on climate change. The volume of disclosure is not standard despite some companies are doing good in this regard. There is no specific guideline or rule provided by the Securities and Exchange Commission to compel companies to provide such disclosure in their annual reports. Formulation and implementation of proper guidelines are anticipated to better the companies' disclosure performance in Bangladesh.

Findings of this study will be beneficial for the companies to get an insight about their climate change disclosure performance comparative to other companies of the industry. Which will enable the pharmaceutical companies to become more environment conscious. Firms will be encouraged to provide more information regarding their initiatives to combat climate change effects.

## 6. Conclusion

This study analyzed the current picture of climate change disclosure by the pharmaceutical industry of Bangladesh. This industry has made tremendous advancement over the last decade. Therefore, stakeholder expectation regarding their ethical and environment friendly operation has risen. This study is based on the analysis of annual reports of the sample companies of pharmaceutical industry of Bangladesh using a self-designed disclosure index. The objective is to observe how climate change related issues are reported. This study finds that the pharmaceutical industry's climate change disclosure performance is still at initial stage. As approximately half of the companies did not use a single word in annual report regarding the impact of their operation on the environment and climate. This disclosure is entirely voluntary in Bangladesh.

This study results will contribute to the prevailing knowledge on climate change disclosure in Bangladesh as corporate management of pharmaceutical industry will be able to identify the disclosure issues where they need to focus more. In spite of the significance of this study, a limitation is that it included only pharmaceutical industry. Future studies can be conducted on other industries to obtain more generalized result.

## References

- ACCA. (2009). *Carbon Accounting: Too little too late?* London: Association of Chartered Certified Accountants (ACCA).
- ACI Formulations Ltd. (2020). *Annual Report 2019*.
- Ahmad, N. N. N., & Haraf, A.S.F. (2013). Environmental disclosures of Malaysian property development companies: towards legitimacy or accountability? *Social Responsibility Journal*, Vol. 9(2), pages 241-258, May; <https://ideas.repec.org/a/eme/srjpps/v9y2013i2p241-258.html>.
- Ahmad, N.N.N., & Hossain, D.M. (2015). Climate Change and Global Warming Discourses and Disclosures in the Corporate Annual Reports: A Study on the Malaysian Companies. *Global Conference on Business & Social Science*. Kuala Lumpur: Elsevier Ltd.
- Ahmed, H. U. (2019, November 27). Pharmaceutical sector flourishing. *The Financial Express*.
- Azim, M., & Azam, S. (2013). Corporate sustainability reporting by pharmaceutical companies: Is it what it seems to be? *Corporate Ownership and Control*, 11(1), 754-765, DOI:10.22495/cocv11i1c8art6
- Belal, A. R., Kabir, M. R., Cooper, S., Dey, P., Khan, N. A., Rahman, T., & Ali, M. (2010). Corporate environmental and climate change disclosures: empirical evidence from Bangladesh. *Research in Accounting in Emerging Economies*, Vol.10, pp. 145-167. Emerald. [https://doi.org/10.1108/S1479-3563\(2010\)0000010011](https://doi.org/10.1108/S1479-3563(2010)0000010011)
- Beximco Pharmaceuticals Ltd. (2020). *Annual Report 2019*.
- Deegan, C., & Unerman, J. (2006). *Financial Accounting Theory (European edition)*. London: The Mc-Graw Hill Companies.
- Dey, P. K., Nakib, M., & Dutta, P. (2017). Climate change disclosures in annual reports: Evidence from Bangladesh. *Asian Journal of Finance & Accounting*, 9(2), 88-102. <https://doi.org/10.5296/ajfa.v9i2.11736>
- Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and. *Account. Audit. Account.*, 8(2), 47-77. <https://doi.org/10.1108/09513579510146996>
- Hackston, D., & Milne, M. (1996). Some determinants of social and environmental disclosures in New Zealand. *Account. Audit. Account.*, 9, 77-108. <http://dx.doi.org/10.1108/09513579610109987>.
- Hoque, A., Clarke, A., & Huang, L. (2016). Lack of stakeholder influence on pollution prevention: A developing *Organ. Environ.*, 1-19, <https://doi.org/10.1177/1086026615623057>.
- Islam, J., Roy, S.K., Das, S.K., & Miah, M. (2020). A Review on Corporate Environmental Reporting (CER): An Emerging Issue in the Corporate World. *Can. J. Bus. Inf. Stud.*, 2(3), 45-53, <https://doi.org/10.34104/cjbis.020.045053>
- Khan, N., & Belal, A. R. (1999). The Politics of the Bangladesh Environmental Protection Act. *Environmental Politics*, 311-317. <https://doi.org/10.1080/09644019908414449>
- Klerk, M.D., Villiers, C., & Staden, C.V. (2015). The influence of corporate social responsibility disclosure on share price. *Pacific Accounting Review*, 208-228. <https://doi.org/10.1108/PAR-05-2013-0047>
- Marston, C., & Shrivies, P.J. (1991). The use of disclosure indices in accounting research: A review article. *British Accounting Review*, 23, 195-210.
- MoEF. (2009). *Bangladesh Climate Change Strategy and Action Plan*. Dhaka: Ministry of environment and forests, Government of the People's Republic of Bangladesh. *Procedia - Social and Behavioral Sciences*, 172, 246-253. <https://doi.org/10.1016/j.sbspro.2015.01.361>.
- Nurunnabi, M. (2015). Who cares about climate change reporting in developing countries? The market response to, and corporate accountability for, climate change in Bangladesh. *Environment Development and Sustainability*, 18(1). <https://doi.org/10.1007/s10668-015-9632-3>.
- Omar, N., & Amran, A. (2018). Corporate Governance and Climate Change Reporting in Malaysia. *The International Journal of Academic Research in Business*

- and Social Sciences*, 7, 222-240. <https://doi.org/10.6007/IJARBSS/v7-i12/3607>
- Pender, J. S. (2008). What Is Climate Change? And How It Will Effect Bangladesh. *Norwegian Church Aid*.
- Rahman, M. A., & Muttakin, M. B. (2005). Corporate Environmental Reporting Practices in Bangladesh - A Study of Some Selected Companies. *The Cost & Management*, 33(4),13-21.
- Rankin, M., Windsor, C., & Wahyuni, D. (October 2011). An investigation of voluntary corporate greenhouse gas emissions reporting in a market governance system: Australian evidence. *Accounting, Auditing & Accountability Journal*, 24(8), <https://doi.org/10.1108/09513571111184751>
- The Acme Laboratories Ltd. (2020). *Annual Report 2019*.
- The Daily Star (2020, November 16). Bangladesh on track to becoming a \$6b pharma market by 2025. *The Daily Star*. Dhaka, Bangladesh.
- Ullah, M., & Rahman, M. (2015). Corporate social responsibility reporting practices in banking companies in Bangladesh: Impact of regulatory change. *J. Financ. Report. Account.*, 13(2), 200-225. <https://doi.org/10.1108/JFRA-05-2013-0038>
- Villiers, C.D., Naiker, V., & Staden, C. J.V. (2011). The Effect of Board Characteristics on Firm Environmental Performance. *Journal of Management*, 37(6), 1636-1663, <https://doi.org/10.1177/0149206311411506>
- World Bank. (2015). Salinity Intrusion in a Changing Climate Scenario will Hit Coastal Bangladesh Hard. <http://www.worldbank.org/en/news/feature/2015/02/17>
- Zeghal, D., & Ahmed, S. (1990). Comparison of social responsibility information disclosure media used by Canadian. *Account. Audit. Account. J.*, 3, 38-53.