“Mapping environmental pollution disclosures in Tunisia”

AUTHORS	Nassreddine Garoui Raida Chakroun Ezzeddine Ben Mohamed

ARTICLE INFO	Nassreddine Garoui, Raida Chakroun and Ezzeddine Ben Mohamed (2017). Mapping environmental pollution disclosures in Tunisia. *Environmental Economics*, *8*(2), 67-75. doi:10.21511/ee.08(2).2017.07
DOI	http://dx.doi.org/10.21511/ee.08(2).2017.07
RELEASED ON	Wednesday, 05 July 2017
RECEIVED ON	Tuesday, 07 February 2017
ACCEPTED ON	Monday, 19 June 2017

JOURNAL	"Environmental Economics"
ISSN PRINT	1998-6041
ISSN ONLINE	1998-605X
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
30	1	3

Nassreddine Garoui (The Kingdom of Saudi Arabia), Raida Chakroun (Tunisia), Ezzeddine Ben Mohamed (The Kingdom of Saudi Arabia)

Mapping environmental pollution disclosures in Tunisia

Abstract

The aim of this paper is to examine the mental models of actors in Tunisian firms with respect to the environmental pollution. The authors use a cognitive map to observe these mental diagrams and to visualize ways to conceptualize the environmental pollution and to understand this concept through the presentation and analysis of the cognitive maps of Tunisian firm's actors. Each actor's systematic exploration grid shows a balance of concepts that expresses their cognitive orientation. Thus, the authors visualize the concepts (variables) that structure the cognitive universe of the actors, which is projected in terms of influences and dependencies. This research provides some lines of thought about environmental and pollution reporting that should be explored further. The research can only help to launch a debate on corporate accountability and transparency.

Keywords: mental models, environmental pollution, Corporate Environmental Disclosure (CED), annual reports, cognitive accounting.
JEL Classification: Q56.
Received on: 7th of February, 2017.
Accepted on: 19th of June, 2017.

Introduction

Under the umbrella of sustainability and the triple bottom line (i.e., economic, social and environmental issues), and the global environmental concerns, CED have received an increased attention in accounting literature over the last two decades. These types of disclosures appear to enhance stakeholders' perception about a company's environmental performance. In recent years, firms have an obligation to be socially responsible to their stakeholders through the development of environmental management systems and the adoption of environmental reporting. In fact, pollution and environmental issues become the focus of increasing attention and concern (Branco and Rodrigues, 2007; Deegan, 2002; Wilmshurst and Frost, 2000; Cormier and Gordon, 2001; Vurro and Perrini, 2011).

Given the scarcity of studies on the CED in the emerging economies and the call for research on this topic by several previous works on CSR reporting such as Khan (2010) and Bonsón and Brdnarová (2014), we aimed to elucidate CED in Tunisia. In fact Khan (2010) argued that "a review of related literature suggests that CSR reporting issues have become a necessary facet of business to substantiate companies' commitment to the society". Furthermore, Bonsón and Brdnarová (2014) state that "communication of social and environmental dimensions of the company plays a key role in the sustainable development of organizations, and therefore should be investigated more in depth".

Disclosure of environmental information is a response to the information needs of report users. This research paper wonders about the corporate environmental reporting. This information is often provided in a separate environmental report, but it may be also included within other forms of reporting, such as the annual report, or the sustainability report (which include the economic, environmental and social issues). In this paper, we focus only on the environmental disclosure about pollution within the firms' annual report. We should mention that environmental disclosure varies from firm to firm and from country to country, since there is no standard way for presenting and interpreting this issue (Crawford and Williams, 2010). In fact, CSR reporting in most developing and emerging countries still heavily relies on voluntary initiatives, but there are some developed countries with regulations making disclosure on CSR mandatory such as France (Bonsón and Brdnarová, 2014).

Several research studies focus on the topic of environmental disclosure in the developed countries (e.g., Zeghal and Ahmed, 1990; Gray et al., 1995; Campbell et al., 2003) and in the developing countries (e.g., Bayoud et al., 2012a, 2012b; Teoh and Thong, 1984; Khan, 2010). But this topic is not well explored in the emerging markets. Therefore, it becomes crucial to focus on environmental disclosure in emerging markets and more

Nassreddine Garoui, Dr., Assistant Professor, College of Business and Economics, Qassim University, The Kingdom of Saudi Arabia.
Raida Chakroun, Dr., Assistant Professor, Department of Accounting, Higher Business Studies Institute at Carthage (IHEC), University of Carthage, Tunisia, ISCAE, LIGUE, University of Manouba, Tunisia.
Ezzeddine Ben Mohamed, College of Business and Economics, Qassim University, The Kingdom of Saudi Arabia.

specifically in North Africa settings (e.g., Khlif et al., 2015; Hossain et al., 1994; Esa and Mohd Ghazali, 2012; Peters et al., 2011; Khemir and Baccouche, 2010). Previous empirical works on environmental reporting deal with its extent (e.g., Bayoud et al., 2012a), its determinants (e.g. Anbumozhi, 2009; Dong et al., 2015; Bonsón and Brdnarová, 2014; Cowen et al., 1987; Amran et al., 2014), its economic consequences (e.g., Dong et al., 2015; Dhaliwal et al., 2011; Dhaliwal et al., 2012; Khlif et al., 2015; Vurro and Perrini, 2011) or its relationship with environmental performance (e.g., Clarkson et al., 2008).

Nowadays, Tunisian companies have involved in producing non-financial reports, especially in the areas of environmental and social issues. They make this communicating effort to various audiences to show their adherence to a broader set of responsibilities included in the new governance model. Few studies have analyzed the CSR disclosure in the Tunisian context (e.g., Driss and Jarboui, 2014; Khemir and Baccouche, 2010). This study contributes to the literature on environmental disclosure in emerging markets by analyzing the cognitive maps of this type of disclosure.

Institutional framework. Environmental reporting regulation in Tunisia. We note that the environmental awareness in Tunisia is still low and that the economic actors are little informed about ecological issues. In fact, industrialization should not be at the expense of the environment. The environmental concerns and the presentation of environmental issues in the annual reports should be investigated especially for firms that operate in industries that highly contribute to pollution in Tunisia. Environmental accounting is an area that has not gained ground in Tunisian corporate financial reporting. This area is still neglected.

An idea about polluters in Tunisia. Laws regarding environmental issues. According to Adams (2002), the factors influencing the extent and nature of ethical, social and environmental reporting are classified as follows: i) corporate characteristics (size, industry, performance…), ii) general contextual factors (country of origin, cultural and economic context…), iii) the internal context (identity of company chair, existence of social reporting committee…). In particular, country of origin, social and political context, economic context, cultural context are influential determinants of the extent of environmental disclosure. These general contextual factors help to explain differences in environmental concerns, the strength of green politics and, more specifically, the demands for firms to act as 'green' firms and to be socially responsible. This author finds that the process of CSR reporting depends on country of origin, corporate size and corporate culture.

Environmental accounting or green accounting covers information relating to all aspects of the environment such as sustainable operations and environment expenditure. This is relatively a recent branch in the domain of accounting and still it is at an early stage of development across the world.

1. Theoretical framework

Mostovicz et al. (2011) argue for blending different theoretical foundations from the management and organization literature in order to draw comparisons between current global CSR practice and the potential for its further adoption in emerging markets. It is more suitable to mobilize multi-theoretical frameworks to explain the phenomenon of environmental disclosure, since there isn't a theory specifically designed to explain it (Branco and Rodrigues, 2007; Alberti-Alhtaybat et al., 2012). According to Gray et al. (1995), three theoretical approaches have been generally used in the corporate social and environmental reporting literature: (1) decision-usefulness approach; (2) economic theory approach; and (3) social and political theory approach. Nevertheless, other theories could deal with the environmental reporting, such as resource dependency theory and institutional theory. Environmental disclosure could be explained by the competing predictions from economic base and socio-political theories.

1.1. Capital market transactions. The decision-usefulness approach suggests that environmental information may exert an effect on share price behavior through future cash flows or cost of capital (Dhaliwal et al., 2011; Dhaliwal et al., 2012). Firms that voluntary engage in environmental disclosure reduce their cost of finance (cost of equity capital or cost of debt). Therefore, these firms have the opportunity to raise equity capital with lower costs, since investors are more attracted by ethical investing on their portfolio investments decision. In addition, investors may accept a lower profitability in firms that disclose environmental values that are in line with their affinities and expectations. With respect to cost of debt, firms can get funds from banks with lower cost of debt when disclosing information dealing with pollution and environmental issues. If firm voluntarily engages in environmental disclosure, creditors will perceive this as a self-regulation

mechanism undertaken by the firm to reduce the effect of expected future regulatory costs on firm's future cash flows. Creditors will, in this case, underestimate the default risk and thereby require lower cost of debt (Khlif et al., 2015).

1.2. Agency theory. According to Jensen and Meckling (1976), the agency relation is regarded as follows: the separation of ownership from control could create a conflict between the shareholders' welfare and the managers' welfare. They argue that corporate disclosure is a governance mechanism, which tends to mitigate the agency costs. Economic theory approach suggests that environmental disclosure reduces information asymmetry between managers and external users of information especially investors. Accordingly, agency costs will be lower. Thus, the high commitment of the companies in CED mitigates agency problems.

Besides, the majority of Tunisian firms are classified as family firms. Therefore, in this type of businesses, type II agency problems tend to be more intense than in other businesses. Ali et al. (2007) argue that these problems come from the conflict between the director shareholders and the nondirector shareholders. In this case, the family members tend to control their business through their substantial participation in the capital and in their position in the board of directors.

1.3. Legitimacy theory & stakeholders theory. Social and political theory approach is based on stakeholder theory and the legitimacy theory perspectives. These theories have been widely used in accounting literature to explain environmental disclosure practice (Campbell et al., 2003; Deegan, 2002; Guthrie and Parker, 1989; Patten, 1992; Roberts, 1992; Wilmshurst and Frost, 2000).

Disclosure of environmental issues in the annual report is a fundamental requirement for a firm in order to satisfy the increasing information needs of its stakeholders. Stakeholder and legitimacy theories state that firms use environmental disclosure to enhance their status, provide information to stakeholders regarding their polluting activities and discharge the social contract between firms and environmental organizations. While legitimacy theory focuses on the expectations of society in general, stakeholder theory is more concerned with the demands of particular groups within the society and the ability of different stakeholders to put pressure on the firms to disclose environmental information (Deegan, 2002).

To conclude, stakeholder theory highlights that firms try to manage their relationships with numerous stakeholders who have varied needs. Consequently, firms tend to disclose environmental information in order to gain the confidence of their stakeholders and to have effective communication with them.

2. Key concepts for environmental information

2.1. Air pollution. Air pollution is possibly the best known of all types of pollution. It is mainly caused by the gases and particles released into the atmosphere by cars, power plants, other industries or by natural events (volcano!). Acid rain and smog (dense smoke over cities) are the two results of air pollution that cause heart and lung problems for all animals, not just humans.

2.2. Soil pollution. Soil pollution is often of industrial origin, that is, some companies do not always take the necessary precautions to avoid toxic waste leaks. Agriculture is also one of the causes of soil pollution. Just think fertilizers, insecticides, pesticides.

2.3. Water pollution. The pollution water is often directly related to soil pollution. The rain quickly carries pesticides and other toxic substances to land, seas and oceans. Eutrophication of lakes and rivers is one of the effects of this pollution. It leads to, among others, an increase in the presence of algae, as well as a decrease in animal and plant biodiversity.

2.4. Radioactive pollution. This type of pollution is mainly caused by industries in the production of electricity from a nuclear power plant. Wastes that result from the process are radioactive and very dangerous to living beings: they emit dangerous particles that can cause tumors or mutations.

2.5. Noise pollution. Noise pollution is perhaps not as damaging as the previous one, but it can still cause hearing problems, irritability, insomnia and even depression. However, it is difficult to determine the effects of this pollution on living beings other than humans.

2.6. Light pollution. Light pollution refers to the abnormal or embarrassing nocture presence of light and the effect of this artificial light on the entire ecosystem. This topic is actually slightly controversial, because many deny whether it is an actual type of pollution.

3. Research methodology

3.1. Methodological tools. We chose to examine the performances of the actors in the company by using a common technique in cognitive approaches, that of cognitive mapping. Cognitive mapping is a graphical modeling technique that has been used in numerous studies in management sciences. The

cognitive map is not only tool for analyzing managerial cognition, but also it is the most popular for the presentation of cognitive structures (G. Nassreddine, J. Anis, 2012).

3.2. Description of the empirical investigation. To meet the research objectives noted above, a survey was conducted among players in companies in Tunisia. We chose an exploratory approach using multiple case studies. Through the use of multiple case studies, we aimed to create a better understanding of the phenomenon by studying the phenomenon in its natural setting. The use of case studies is particularly interesting in the case of little-known phenomena. The case studies, thus, allowed multiple accounts of the specificities and characteristics of corporate governance.

The data were derived from 10 firms. The decision to base our study on a sample of firms from various sectors was based on the assumption that a variety of issues could be addressed. The output is a cognitive map for the actors that reflect their perceptions of the behavioral approach to corporate governance.

The method used to create the cognitive maps was the questionnaire.

3.3. The construction of the cognitive maps. First, we will present the construction of the concepts and the methodological approach. Then, we will examine how the cards were developed.

3.4. Concepts. We addressed this issue by the representations constructed by the players using the method of cognitive maps, which is a method that can be applied to poorly structured situations. An analysis based on cognitive maps can allow an understanding of the process of structuring, because the model is built or rebuilt simultaneously with the mental modeling. That is, this construction takes the form of an adapting structure.

The method helps to identify ways to achieve a given goal, the same way, it helps to identify the goals justifying the use of such means. Thus, the method facilitates communication and negotiation. The concepts are presented in the table below.

Table 1. Key concepts for environmental information

Air pollution
Soil pollution
Water pollution
Radioactive pollution
Noise pollution
Light pollution

3.5. The input. This step was designed to compile a matrix of direct influence between the variables in a scoring session. The matrix of direct influence (MID) describes the relationship of direct influence between the variables defining the system, and the matrix of direct potential influences (MIDP) represent the potential direct influences and dependencies between the existing and potential variables. The scoring has developed as the input matrix of direct influences (MID). The influences are rated from 0 to 3, with the ability to report potential influences.

3.6. Matrix of direct influences (MID). The matrix of direct influence (MID) describes the relationship of the direct influences between the variables defining the system.

3.7. Matrix of direct potential influences (MIDP). The matrix of direct potential influences (MIDP) represents the potential direct influences and dependencies between the existing and potential variables.

It complements the MID and also takes into account possible relationships in the future.

Table 2. Matrix of potential direct influences

	Air pollution	Soil pollution	Water pollution	Radioactive pollution	Noise pollution	Light pollution
Air pollution	0	0	0	0	3	1
Soil pollution	0	0	1	0	2	2
Water pollution	0	0	0	0	1	1
Radioactive pollution	0	1	1	0	2	0
Noise pollution	2	0	2	0	0	0
Light pollution	1	0	0	2	0	0

Table 3. Matrix of indirect influences (MII)

	Air pollution	Soil pollution	Water pollution	Radioactive pollution	Noise pollution	Light pollution
Air pollution	40	20	55	33	35	30
Soil pollution	90	30	98	89	44	60
Water pollution	70	24	75	71	27	20
Radioactive pollution	60	20	65	74	27	75
Noise pollution	70	25	65	120	25	104
Light pollution	44	18	70	40	33	40

Conclusion and implications of the research

Environmental information, which used to have a minor role in the company's reporting, is now actively involved in the process of the decision making by the users of corporate reporting. In addition, it helps stakeholders to assess whether the firm is a good corporate citizen. However, this development created new users' expectations about environmental and pollution information. This paper aims to explore the cognitive maps regarding environmental pollution information in a weak regulative setting.

This plan (Figure 1) visualizes the concepts (variables) structuring the cognitive universe of the actors that can be projected in terms of influences/dependencies. By the distribution of the scatter plot variables in this plan, particularly in relation to different quadrants, we can distinguish four major categories of variables.

The first quadrant includes the most prominent concepts in the dynamics of thought of the actors. For the actors in each organization, the notion of "air pollution" and "soil pollution" are the most dominant in their cognitions, reflecting an intention based on laws logic.

Faced with voluntary disclosures gaps, several studies (Gray et al., 1995; Deegan and Rankin, 1997) put forward the idea of regulatory responsibility for environmental companies to obtain better disclosures.

The second quadrant contains the relay variables that are by definition both very influential and very dependent. In analyzing the plan influences/dependencies, there are players for the concepts or ideas illustrating the concepts of "water pollution".

The third quadrant contains the dependent variables. They are both influential and not very dependent and, therefore, particularly sensitive. This quadrant shows the results that are explained by the variables and motor relay.

The fourth quadrant contains the variables that are simultaneously autonomous and influential, but only slightly dependent. These variables are relatively excluded from the dynamics of thought of the Tunisian companies. The plan's influences/dependencies show the existence of a single variable relating to economic factors.

To supervise the preparation and disclosure of these reports and help businesses to better meet the expectations of stakeholders, many guides have been developed by various national and international organizations (Enviro-reporting, 2007). Among these, the GRI Guidelines are the most known and used for voluntary disclosures.

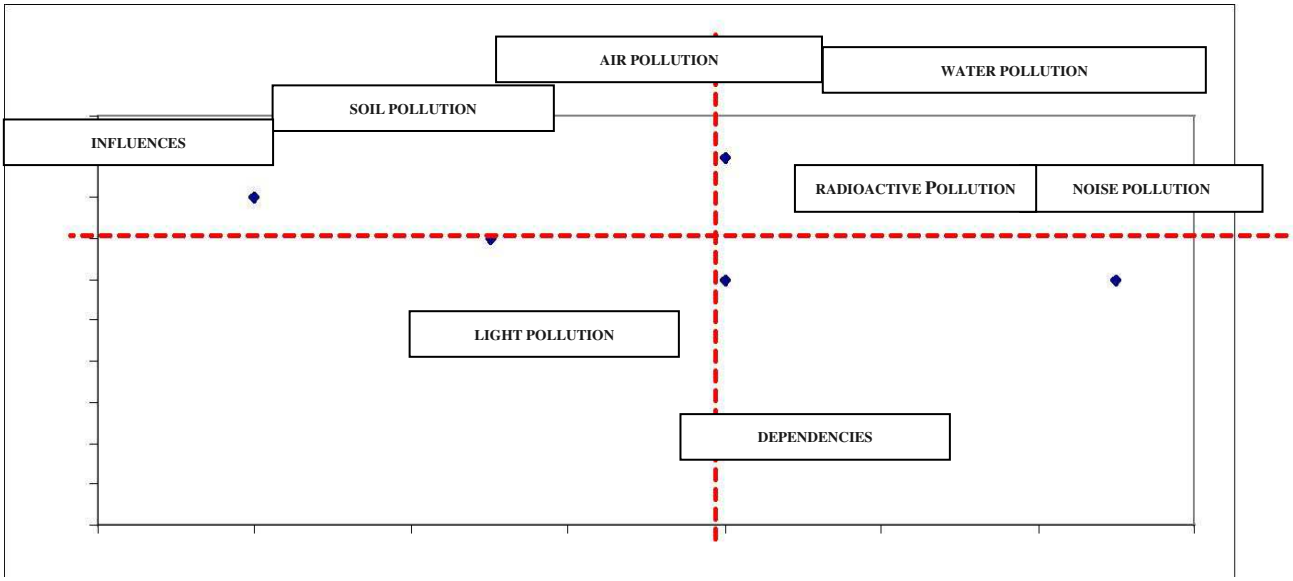

Fig. 1. Cognitive mapping through the plan of influences/dependencies

This research provides some lines of thought about environmental and pollution reporting that should be explored further. Our research can only help the launch of a debate on corporate accountability and transparency. Other studies could be carried out about the investment decision making on the basis of environmental and pollution information. More investigations into cognitive accounting regarding social disclosure should be addressed in Tunisian setting. Accounting for the environment and environmental reporting are implications of Islamic principles (Kamla, 2007; Kamla et al., 2006). This issue is worth to be more examined in further studies.

Therefore, our findings are relevant for the producers and users of environmental and pollution reporting. With respect to producers, our results shed light on the importance of environmental disclosure as a tool to legitimize company's activities. With respect to users, our study contributes to the scarce body of the literature exploring the environmental and pollution reporting in emerging African countries. Finally, our findings may be of interest also to environmental organisms, which are focusing on the establishment of environmental and pollution reporting guidelines in emerging markets. While our study provides evidence that environmental disclosure remain under developed in Tunisia, regulators need to impose some standards to reduce uncertainty among stakeholders concerning this issue. This study recommends that there is a need to develop an environmental responsibility framework in Tunisia. A number of initiatives and pressures must be taken to encourage companies to improve their environmental reporting even the companies that considered as polluters. More concern of the environmental information stakeholders needs should be promoted in order to encourage Tunisian firms to disclose this type of information.

References

1. Abelson, R., & Rosenberg, M. (1958). Symbolic psy-cho-logic: A model of attitudinal cognition. *Be-havioral Science, 3*(1), 1-13.
2. Act n. 1996-112 (the December 30, 1996) on the Tunisian firms' accounting system.
3. Act n. 2005-96 (the October 18, 2005) on the strengthening of the financial security.
4. Adams, C. A. (2002). Internal organizational factors influencing corporate social and ethical reporting: Beyond current theorizing. *Accounting Auditing and Accountability Journal, 15*(2), 223-250.
5. Adeyeye, A. (2011). Universal standards in CSR; are we prepared? *Corporate Governance: The international journal of business in society, 11*(1), 107-119.
6. Aerts, W. D., Cormier, S. P., & Magnan, M. (2008). Corporate environmental disclosure, financial markets and the media: An international perspective. *Ecological Economics,* 643-659.
7. Alberti-Alhtaybat, L. V., Hutaibat K., & Al-Htaybat, K. (2012). Mapping corporate disclosure theories. *Journal of Financial Reporting & Accounting, 10*(1), 73-94.
8. Ali, A., Chen, T. Y., & Radhakrishman, S. (2007). Corporate disclosures by family firms. *Journal of Accounting and Economics, 44,* 238-286.
9. Amran, A., Lee, S. P. & Devi, S. (2014). The influence of corporate structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and Environment, 23,* 217-235.
10. Anbumozhi, X. L. V. (2009). Determinants factors of corporate environmental information disclosure: an empirical study of Chinese listed companies. *Journal of Cleaner Production, 17,* 593-600.
11. Anderson, J. J. (1973). Silicate water mass analysis off the Northwest Coast of Africa. *InvestigationsPesqeras, sup. 2,* 53-64.
12. Arvidsson, S. (2011). Disclosure of non-financial information in the annual report A management –team perspective. *Journal of Intellectual Capital, 12*(2), 277-300.
13. Audet, M. (1994). Plasticité, instrumentalité et réflexivité [Plasticity, instrumentalisty and reflexivity]. In P. Cossette (Ed.). *Cartes cognitive set organisations, Collection [Cognitive maps serve the study of organizations, Collection],* 187-198. Québec/Paris: Les Presses de l'Université Laval/Éditions ESKA.
14. Baker, A. K., & Haslem, J. A. (1973). Information needs of individual investors. *The Journal of Accountancy,* 64-69.
15. Barberis, N., Shleifer, A., Vishny, R. W. (1998). A Model of Investor Sentiment. *Journal of Financial Economics, 49*(3), 307-343.
16. Bayoud, N. S., Kavanagh, M., & Slaughter, G. (2012b). Factors Influencing Levels of Corporate Social Responsibility Disclosure by Libyan Firms: A Mixed Study. *International Journal of Economics and Finance, 4,* 13-29.
17. Bayoud, N. S., Kavanagh, M., &Slaughter, G. (2012a). Corporate Social Responsibility Disclosure and Corporate Reputation in Developing Countries: The Case of Libya. *Journal of Business and Policy Research, 7,* 131-160.
18. Beyer, A., Cohen, D. A., Lys, T. Z., & Walther, B. R. (2010). The financial reporting environment: review of the recent literature. *Journal of Accounting and Economics, 50,* 296-343.
19. Bonsón, E., & Brdnarová, M. (2014). CSR reporting practices of Eurozone companies. *Spanish Accounting Review, Forthcoming.*
20. Bougon, M. G., & Komocar, J. M. (1994). Les cartes cognitives composites. Une théorie holistique et dynamique des organisations [Composite cogni-tivemaps. A holistic and dynamic organization theory]. In P. Cossette (Ed.), *Cartes*

cognitive set organisations, Collection [Cognitive maps serve the study of organizations, Collection], 37-56. Québec/Paris: Les Presses de l'Université Laval/ Éditions ESKA.
21. Branco, M. C., & Rodrigues, L. L. (2007).Issues in corporate social and environmental reporting research: An overview. *Issues in Social and Environmental Accounting, 1*(1), 72-90.
22. Brehm, M. L., Back, K. W., & Bogdonoff, M. D. (1964). A physiological effect of cognitive dissonance under stress and deprivation. *The Journal ofAbnormal and Social Psychology, 69*(3), 303-310.
23. Buzby, S. L. (1974). Selected items of information and their disclosure in annual reports. *The Accounting Review, 49*(3), 423-435.
24. Campbell, D., Craven, B., & Shrives, P. (2003). Voluntary social reporting in three FTSE sectors: a comment on perception and legitimacy. *Accounting Auditing and Accountability Journal, 16*(4), 558-581.
25. Chakroun, R. (2012a). Confrontation between Supply and Demand for Voluntary Information in the Annual Reports in an Emerging Country: The Tunisian Case. *International Journal of Accounting and Financial Reporting, 2*(2), 333-366.
26. Chakroun, R. (2012b). La perception de l'utilité de l'information volontaire dans les rapports annuels par les analystes financiers tunisiens. *RecherchesenComptabilitéet Financ, 8,* 35-60.
27. Chatterjee, R., Mirshekary, S., Al Farooque, O., & Safari, M. (2010). Users' Information Requirements and Narrative Reporting: The Case of Iranian Companies. *Australasian Accounting Business and Finance Journal, 4*(2), 79-96.
28. Clarkson, P. M., Gordon, Y. L., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting Organizations and Society, 33,* 303-327.
29. Cormier, D., & Gordon, I. M. (2001). An examination of social and environmental reporting strategies. *Accounting, Auditing & Accountability Journal, 14*(5), 587-617.
30. Cossette, P. (1994). Les cartescognitives au service de l'étude des organisations [Cognitive maps serve the study of organizations]. In P. Cossette (Ed.), *Cartes cognitive set organisations, Collection [Cognitive maps serve the study of organizations, Collection],* 3-12. Québec/Paris: LesPresses de l'Université Laval/Éditions ESKA.
31. Cossette, P., Audet, M. (1994). Qu'est-ce qu'une carte cognitive? [What is a cognitive map ?]. In P. Cossette (Ed.), *Cartescognitivesetorganisations, Collection [Cognitive maps serve the study of organizations, Collection],* 13-33. Québec/Paris: LesPresses de l'Université Laval/Éditions ESKA.
32. Cowen, S., Ferreri, L., & Parker, L. (1987). The impact of corporate characteristics on social responsibility disclosure: a typology and frequency-based analysis. *Accounting, Organisation and Society, 12*(2), 111-122.
33. Crawford, P. E., & Williams, C. C. (2010). Should corporate social reporting be voluntary or mandatory? Evidence from the banking sector in France and the United States. *Corporate Governance: The international journal of business in society, 10*(4), 512-526.
34. Daniel, K., Hirshleifer, D., Subrahmanyam, A. (1998). Investor Psychology and Security Market Under- and Overreactions. *Journal of Finance, 53*(6), 1839-1885.
35. De Bondt, W. F. M., & Thaler, R. (1985). Does the Stock Market Overreact? *The Journal of Finance, 40*(3), 793-805.
36. Deegan, C. (2002). The legitimizing effect of social and environmental disclosures – a theoretical foundation. *Accounting Auditing and Accountability Journal, 15*(3), 282-311.
37. Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review, 86*(1), 59-100.
38. Dhaliwal, D. S., Radhakrishman, S., Tsang, A., & Yang, Y. G. (2012). Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure. *The Accounting Review, 87*(3), 723-759.
39. Dittrich, P., & Speroni di Fenizio, P. (2005). Chemical Organization Theory, arXiv:q-bio.MN/0501016.
40. Dong, Y., Fu, R., Gao, F., & Ni, C. (2015). Determinants and Economic Consequences of Nonfinancial Disclosure Quality. *European Accounting Review, Forthcoming.*
41. Driss, R., & Jarboui, A. (2014). Social disclosure: What are the main explanatory factors? An empirical test in the Tunisian context. *International Journal of Accounting and Economics Studies, 2*(1), 34-49.
42. Durnev, A., & Kim, E. H. (2005). To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation. *The Journal of Finance*, *Vol. LX, No. 3,* 1461-1493.
43. Esa, E., & Mohd Ghazali, N. A. (2012). Corporate social responsibility and corporate governance in Malaysian government-linked companies. *Corporate Governance: The international journal of business in society, 12*(3), 292-305.
44. Fairchild, R. J. (2005). The Effect of Managerial Over-confidence, Asymmetric Information, and Moral.
45. Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Standford, CA: Stanford University Press.
46. Ford, J. D., & Hegarty, W. H. (1984). Decision makers' beliefs about the causes and effects of structure: An exploratory study. *Academy of Management Journal, 27*(2), 271-291.
47. Forker, J. J. (1992). Corporate Governance and Disclosure Quality. *Accounting and Business Research, 22*(86), 111-124.
48. Global Reporting Initiative (GRI). (2006). *Sustainability Reporting Guidelines 3*. Retrieved from http://www.globalreporting.org
49. Gomez, P. Y. (1996). *Le gouvernement de l'entreprise [corporate governance: economic models and business practices]*. Paris: Éditions Masson.
50. Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal, 8*(2), 47-77.
51. Griffin, D., & Tversky, A. (1992). The Weighing of Evidence and the Determinants of Confidence. *Cognitive*

Psychology, 24(3), 411-435.
52. Guide of good corporate governance practice of the Tunisian enterprises. (2008). Arab Institute of Business Leaders.
53. Guide of the annual report of the Tunisian enterprises. (2009). Arab Institute of Business Leaders.
54. Guthrie, J., &Parker, L. D. (1989). Organizational social reporting: A rebuttal of legitimacy theory. *Accounting and Business Research, 19*(76), 343-352.
55. Haniffa, R., & Cooke, T. (2002). Culture, Corporate Governance and Disclosure in Malaysian Corporations. *ABACUS, 38*(3), 317-347.
56. Harmon-Jones, E. (2000). A cognitive dissonance theory perspective on the role of emotion in the maintenance and change of beliefs and attitudes. In N. H. Frijda, A. R. S. Manstead, & S. Bem (Ed.), *Emotions and beliefs,* 185-211. Cambridge, UK: Cambridge University Press.
57. Harmon-Jones, E., & Harmon-Jones, C. (2007). Cognitive dissonance theory: An update with a focus on the action-based model. In J. Shah, & W. Gardner (Ed.), *Handbook of motivation science* (pp. 71-83). New York, NY: Guilford Publications.
58. Hassan, O. A. G., Giorgioni, G., Romilly, P., & Power, D. M. (2012). The information gap in corporate annual reports: evidence from Egypt. *African Journal of Accounting, Auditing and Finance, 1*(4), 338-358.
59. Hazard on Capital Structure Decisions. Retrieved from http://dx.doi.org/10.2139/ssrn.711845
60. Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31,* 405-440.
61. Heath, C., & Tversky, A. (1991). Preference and belief - ambiguity and competence in choice under uncertainty. *Journal of Risk and Uncertainty, 4*(1), 5-28.
62. Hossain, M., Tan, L. M., & Adams, M. (1994). Voluntary Disclosure in an Emerging Capital Market: Some Empirical Evidence from Companies Listed on the Kuala Lumpur Stock Exchange. *International Journal of Accounting, 29,* 334-351.
63. IAS 16. Property, plant and equipment.
64. IAS 37. Provisions, contingent liabilities and contingent assets.
65. Ibrahim, H., & Abdul Samad, F. M. (2011). Corporate Governance and Agency Costs Evidence from Public Listed Family Firms in Malaysia. *International Corporate Governance*, *14,* 109-130.
66. Jensen, M., & Meckling, W. (1976). Theory of the firm, managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3,* 305-360.
67. Jolls, C. (2009). Behavioral Law and Economics (Working Paper No. 130). Yale Law School.
68. Kahneman, D., Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. *Econometrica, 47*(2), 263-291.
69. Kamla, R. (2007). Critically Appreciating Social Accounting and Reporting in the Arab Middle East: A Postcolonial Perspective. *Advances in International Accounting, 20,* 105-177.
70. Kamla, R., Gallhofer, S., & Haslam, J. (2006). Islam, nature and accounting: Islamic principles and the notion of accounting for the environment. *Accounting Forum, 30,* 245-265.
71. Kempler, D. (2005). *Neurocognitive Disorders in Aging*. Thousand Oaks, CA: Sage Publications.
72. Khan, H. (2010). The effect of corporate governance elements on corporate social responsibility (CSR) reporting: empirical evidence from private commercial banks of Bangladesh. *International Journal of Law and Management, 52*(2), 82-109.
73. Khemir, S., & Baccouche, C. (2010). Analysis of the determinants of corporate social responsibility disclosure in the annual reports of Tunisian listed firms. *Research in Accounting in Emerging Economies, 10,* 119-144.
74. Khlif, H., Guidara, A., and Souissi, M. (2015). Corporate social and environmental disclosure and corporate performance. *Journal of Accounting in Emerging Economies, 5*(1), 51-69.
75. Komocar, J. M. (1994). Cartes causales d'un milieu de travail [Causal Mapsworkplace]. In P. Cossette (Ed.), *Cartes cognitives et organisations [cognitivemaps and organizations]*(pp. 155-184). Quebec:Les Presses de l'Université Laval.
76. Leventis, S., & Weetman, P. (2004). Voluntary disclosures in an emerging capital market: Some evidence from the Athens stock exchange. *Advances in International Accounting, 17,* 227-250.
77. McNally, G. M., Eng, L. H., & Hasseldine, C. R. (1982). Corporate financial reporting in New Zealand: An analysis of user preferences, corporate characteristics and disclosure practices for discretionary information. *Accounting and Business Research, 49,* 11-20.
78. Meltzoff, A. N. (2005). Imitation and other minds: The 'Like Me' hypothesis. In S. Hurley & N. Chater (Eds.), *Perspectives on imitation: From cognitive neuroscience to social science, vol. 2* (pp. 55-77). Cambridge, UK: MIT Press.
79. Miller, M. H. (1977). Debt and Taxes. *Journal of Finance, 32*(2), 261-275.
80. Mostovicz, E. I., Kakabadse, A., and Kakabadse, N. K. (2011). The four pillars of corporate responsibility: ethics, leadership, personal responsibility and trust. *Corporate Governance: The international journal of business in society, 11(*4), 489-500.
81. Myburgh, J. E. (2001). The informativeness of voluntary disclosure in the annual reports of listed industrial companies in South Africa. *Meditari Acoountancy Research, 9,* 199-216.
82. Nassreddine, G., Anis, J. (2012). Cognitive Mapping: Testing Application of Causal Algebra. *Applied mathematics, 3*(4).
83. Nassreddine, G., Anis, J. (2014). Cognitive Governance, Cognitive mapping and cognitive conflicts: Structural analysis with the MICMAC method. *Cogent economics and finance (Taylor and Francis), 2.*

84. Nassreddine, G., Anis, J. (2014). Corporate Governance, Behavioral Approach and Cognitive Mapping Technique. *Contemporary economics, 8*(2).
85. Oliver, R. L. (1980). A Cognitive Model of the Ante-cedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research, 17*(4), 460-469.
86. Order of the finance minister (the April 7, 2000). Regulation of the Financial Market Council relates to public offering.
87. Patten, D. M. (1991). Exposure, Legitimacy, and Social Disclosure. *Journal of Accounting and Public Policy, 10,* 297-308.
88. Patten, D. M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: a note on legitimacy theory. *Accounting, Organisations and Society, 17*(5), 471-475.
89. Peters, S., Miller, M., & Kusyk, S. (2011). How relevant is corporate governance and corporate social responsibility in emerging markets? *Corporate Governance: The international journal of business in society, 11*(4), 429-445.
90. Pupion, P., & Leroux, E. (2006). Le mimétisme rationnel comme facteur d'adoption d'un ERP, Systèmes [Rational imitation as a factor in adoption of ERP]. *Systèmes d'information et management, 11*(3), 37-66.
91. Ritter, J. R. (2003). Difference between European and American IPO markets. *European Financial Management, 9*(4), 421-434.
92. Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of Stakeholder theory. *Accounting Organizations and Society, 17*(6), 595-612.
93. Scheinkman, J. A., & Xiong, W. (2003). Overconfidence and Speculative Bubbles. *Journal of Political Economy, 111*(6), 1183-1219.
94. Sherif, M., & Hovland, C. I. (1961). *Social judgment:Assimilation and contrast effects in communication and attitude change*. Westport, CT: GreenwoodPress.
95. Svenson, O. (1981). Are we all less risky and more skill-ful than our fellow drivers? *Acta Psychologica, 47*(2), 143-148.
96. Teoh, H. Y., & Thong, G. (1984). Another Look at CSR and Reporting: An Empirical Study in Developing Country. *Accounting,Organization and Society, 9*(2), 189-206.
97. Thaler, R. H. (1996). Doing Economics Without Homo Economicus. In S.G. Medema, & W.J. Samuels (Eds.), *Foundations of Research in Economics: HowDo Economists Do Economics* (pp. 227-237). Cheltenham, UK: Edward Elgar.
98. Turel, A. (2010). The Expectation Gap in Internet Financial Reporting:Evidence from an Emerging Capital Market. *Middle Eastern Finance and Economics, 8,* 1450-2889.
99. Unerman, J. (2000). Methodological issues: Reflections on quantification in corporate social reporting content analysis. *Accounting Auditing and Accountability Journal, 13*(5), 667-680.
100. Vurro, C., & Perrini, F. (2011). Making the most of corporate social responsibility reporting: disclosure structure and its impact on performance. *Corporate Governance: The international journal of business in society, 11*(4), 459-474.
101. Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology, 39*(5), 806-820.
102. Wilmshurst, T. D., & Frost, G. R. (2000). Corporate environmental reporting: A test of legitimacy theory. *Accounting Auditing and Accountability Journal, 13*(1), 10-26.
103. Yaftian, A. M., & Mirshekary, S. (2005). Perceptions and characteristics of financial statement providers in developing countries: The case of Iran. *The Journal of International Accounting, Auditing and Taxation, 14,* 33-54.
104. Yates, J. F. (1990). *Judgment and decision making*. Englewood Cliffs, NJ: Prentice Hall.
105. Zacharakis, A. L., & Shepherd, D. A. (2001). The nature of information and overconfidence on venture capitalists' decision making. *Journal of Business Venturing, 16*(4), 311-332.
106. Zeghal, D., & Ahmed, S. A. (1990). Comparison of social responsibility information disclosure media used by Canadian firms. *Accounting, Auditing and Accountability Journal, 3*(1), 38-53.