The GreenWashing Machine
Is CSR more than communication?

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Plan

Increasing globalization and huge challenge raised by climate change :

$\nearrow$ consumer interest for CSR

$\Rightarrow$ so they do for firms !

The Corporate Social Responsibility (CSR) : Notion not well defined

$\Rightarrow$ Verifiability of the real commitment of firms in CSR is weak

Consumers want more CSR and may be willing to pay for that

⇓

Firms are aware of that demand for CSR and may find it profitable to invest in CSR if the demand is high enough

⇓

CSR is costly, so firms may be tempted to communicate over a non-existent or overestimated effort in CSR.

1. Famous critics raised by Friedman (1971) who considers that the only social responsibility of the firm is to make profits

   ⇒ "*instrumental* view of CSR", Mitchell, Agle, and Wood (1997) ; Odgen and Watson (1999)

2. CSR is seen as a way to substitute "hard law" by "soft law" determined by the firms themselves.

Common aspect

Scepticism : "*The image of multinational companies working hard to make the world a better place is often just that - an image*", said a report of the British NGO ChristianAid (2004)

This skepticism is reinforced by the Greenwashing

Defined by Greenpeace as
"the act of misleading consumers regarding the environmental
practices of a company or the environmental benefits of a
product or service."

TerraChoice Environmental Marketing Inc.'s survey

1,018 products bearing 1,753 environmental claims :
all but one made *"claims that are demonstrably false or that risk
misleading intended audiences."*

The "instrumental view of CSR" is retained.

If firms include CSR in their product, which is costly, then they want the consumers know the CSR content.

⇒ CSR & Communication are Strategic complements

This paper investigates the extent to which firms use "green" communication and advertising as a substitute or complement with CSR

i Theoretical model : Core structure of the framework relies on Dewatripont and Tirole (2005).
⇒ "usual suspects" that will have a higher probability to prefer the communication strategy.

ii Test empirically some implications, using an original database on CSR level for the biggest 595 European firms (VIGEO) and on the level of *reporting*, proxy of "Green" communication.

Determinants of CSR largely studied : Garriga and Melé (2004) distinguish 4 families of theories explaining the development of CSR : (i) the instrumental theories, (ii) the political theories, (iii) the integrative theories and (iv) the ethic theories.

- Nelson (1974) showed that advertising strategy will depend on the nature of the good itself
- McWilliams and Siegel (2001) suggest that the goods can be divided into the "search goods" and the "experience goods"
- McWilliams and Siegel (2001) showed a positive correlation between experience goods and advertising.
- Siegel and Vitalino (2007) investigates empirically the determinants of CSR and confirm that CSR tends to be more important for experience goods.

a Theoretical framework explaining when communication and CSR are strategic complements or substitutes

b Original estimation of the level of CSR *reporting* for the 595 biggest European firms and a new index of their effective level of CSR built from VIGEO data.

c Different level of commitments, from the simple communication in CSR reports (the "cues" communication in Dewatripont and Tirole (2005)) to the external certification (the "issue-relevant" communication in Dewatripont and Tirole (2005)).

Core structure of the framework relies on Dewatripont and Tirole (2005) :

Provide a simple framework for the study of modes of communication.

They Introduce two types of relations between a sender, S, and a receiver, R. Either their relation is governed by a

  (i) *Supervisory Decision Making (SDM)* : Under the former, the information the communication may convey helps the receiver to decide whether she chooses action A or the status quo.

  (ii) or by an *Executive Decision Making (EDM)* : without any communication, the receiver would never choose to take action A.

✓The action considered in this paper is to buy a more expansive product.

✓Payoff of R under the status quo is 0

✓The consumer (receiver) would then choose action A if the product contains CSR

✓The consumer attributes an *ex ante* probability that the product contains CSR

$$\alpha^* = \frac{-r_L}{r_H - r_L}$$

where r_L (r_H) is the low (high) revenue.

Revenue : $\neq$ between prices of both products and the indirect utility the consumer derives

Firms Know how consumers value the CSR content.

With p_H (p_L) the price charged for a (non) CSR product, $r_L = E[U(CSR = 0)] - p_H < 0$, $r_H = E[U(CSR > 0)] - p_H > 0$.

If the consumer does not choose A, it gets $E[U(CSR = 0)] - p_L = 0$.

Focus on a particular case developed in D & T 05 that involves cue communication.

"Cues" : convey no hard information on the CSR content but may convey information on the type of the sender, the firms.

A "good news" is expected to raise the *congruence* (*a priori* convergence of interest) between the consumer and the firm.

Remark : A suspicious consumer that doesn't believe ads corresponds to an EDM. More gullibility $\Leftrightarrow$ SDM

Both actors may modify the *ex ante* decision that depends on the *ex ante* probability.

To do this, they make efforts, x and y.

Their costs $S(x)$ and $R(y)$ are increasing and differentiable. As in D & T 05, we assume the communication efforts are strategic complements.

In most cases, communication and CSR are strategic complements.

Several models are considered

In particular, we focus on a case that is not developed in D & T 05, when cues coexist with the fact that the sender knows the receiver payoffs.

The models are the following :

1. Firms know the consumer payoff : hard information communication
2. Firms know the payoffs : cues
3. Hard information and cues
4. Costly cues
5. Continuous choice of the level of CSR

Firms know the consumer payoff :
hard information communication

Result

When only hard information can be sent. It is optimal to practice
CSR iif

$$\alpha < \alpha^{***}$$
$$s_H > S(x^*)$$

with α^{***} the level above which the consumer rumberstamps A,
s_H the payoff of the firm that has practiced CSR (inferior to s_L).

Firms know the payoffs : cues

Result

When only cues can be sent, it is never optimal to invest in
CSR.

Hard information and cues

Aim is allowing the following possibilities :

Proposition (Hard Greenwashing)

When cues and hard information communication coexist, if $\bar{\alpha} > \alpha^{***}$, then the optimal solution is No-CSR/Cue, that is hard (or full) green washing.

If $\bar{\alpha} < \alpha^{***}$, practicing CSR is the only way to sell the product. The optimal choice depends on the gains the firm obtains relatively to the cost of communicating hard information.

A cue is always sent by a CSR firm if the ex ante probability, with no communication at all, is nil.

Costly cues

Cost of the "cue" is a function of α for firms, it is negligible for consumers.

Result

Proposition

*According to the relative elasticities of x, y with respect to s_H, of the elasticities of the cost functions to an increase of x and α, an increase of s_H **may or may not** increase the incentive to practice CSR.*

Continuous choice of the level of CSR

Result

If we assume that $\rho(r_H)$ (degree of trust,or gullibility, of the consumer) is known by the consumer. The continuity of α and/or r_H rules out the possibility of hard greenwashing, except for a misperception of this function by the firm.

Remark : Firms know $\rho(.)$ exists but not the function. This allows now to really consider that α measures the quality of the communication.

Proposition (Light greenwashing)

If r_H is continuous and endogenous, and if firms can ex ante commit to a level of r_H^* they pretend to have invested in, then the presence of cues reduces the optimal level of CSR.

Data

According to the model, three sets of information are needed :

(i) The effective level of social responsability for the firms,

(ii) The "hard information" which is a reliable certification provided by the firm in order to give a clear assessment of the level of CSR to the consumers,

(iii) The "cues" which is here the non-verifiable information or communication related to CSR provided by the firm.

The level of CSR will be approximated by the extra-financial rating provided by VIGEO for 595 European firms

Vigeo proposes different CSR principles of universal application translated into action steps for management. They propose 6 evaluations fields and 37 criteria. These fields are : (1) Human Rights, (2) Human Ressources, (3) Environment, (4) Business Behaviour, (5) Community Involvement, and (6) Corporate Governance. These objectives are evaluated on the basis of about 200 action steps.

FIGURE: Number of firms in the VIGEO database by country
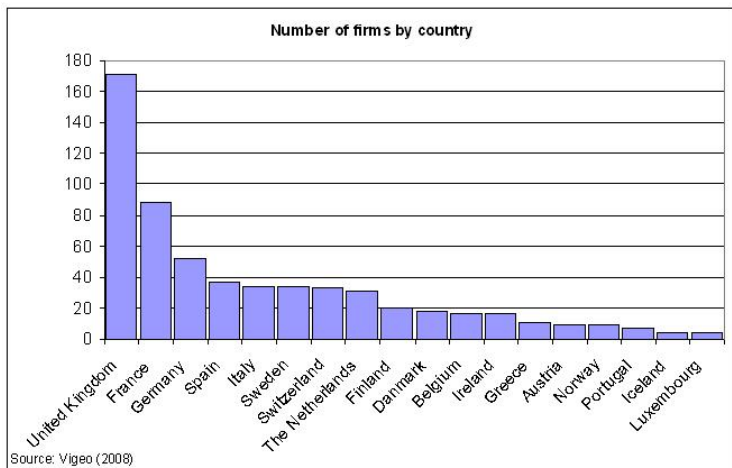
FIGURE: Number of firms in the VIGEO database by sector
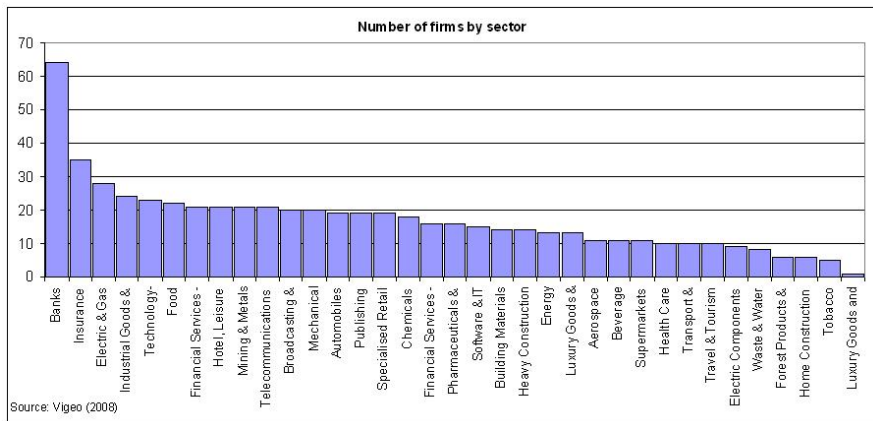
Use of a principal component analysis

The main goal of the analysis : See global patterns of behaviour regarding different CSR aspects and to give an assessment of the global level of CSR according to the different items.

The idea is to reduce the whole categories to the fewest number of significant common factor.

2 methodologies : Kaiser and Cattell. The first one recommends to keep 13 factors, the second, only one or two. The advantage of the second one is to focus on broad "CSR behaviours".

The first axis : a quantitative assessment of the global corporate social performance

According to this interpretation of the first axis, the best performances in terms of CSR are observed in France (-3,4), in the UK (-2,6) and in the Netherlands (-1,9). The worst performances are observed in Ireland (4,1), Iceland (2,6) and Austria (2,1). In terms of sectors, the best performances are observed in the chemical sectors (-3,1), in the automobile sector (-2,6) and in the energetic sector (-2,1). On the other site, the food sector (3,5), and the mechanical component sector (3,2) have the worst marks in terms of CSR performance.

Few observations can be made at this point :

- The level of CSR performance does not depend on the legal system on the country. France and UK with very different legal system have the best performances. On the contrary, Nordic countries for example have heterogeneous performances (between 3,3 for Danmark against -1,5 for Norway) despite they have very similar legal system.

- The sectors who have the best performances in terms of CSR are also sectors which have to face a negative image in the public opinion regarding the environmental or social responsability (automobiles, energy, chemical products).

- Generally, the corporate social performance is higher for the companies which are quoted on stock exchange.

This axis is re-scaled between 0 (the worst) and 1 (the best)

TABLE: Description of the factorial axises (coordinates of the different variables)

Variables	Factor 1	Factor 2	factor 3	Factor 4
HR	-0,82	0,27	0,15	-0,10
HRts	-0,79	0,03	0,21	-0,03
ENV	-0,88	0,06	-0,31	-0,08
CS	-0,82	-0,04	0,35	0,17
CG	-0,41	-0,87	-0,02	0,10
CIN	0,04	0,21	-0,20	0,89
Austria	2,1	1,3	-0,2	-0,6
Belgium	0,3	3,3	1,2	-0,4
Denmark	3,3	3,9	-1,2	0,0
Finland	-0,3	0,4	-1,1	-0,2
France	-3,4	7,4	1,1	-1,7
Germany	-0,6	5,0	0,9	1,1
Greece	2,1	2,9	-2,1	1,0
Iceland	2,6	0,0	-0,7	2,1
Ireland	4,1	-1,6	-0,2	1,5
Italy	0,7	3,9	3,3	-0,7
Luxembourg	0,6	0,0	1,4	0,2
Norway	-1,5	-0,3	0,8	-0,6
Portugal	0,4	2,4	-0,4	1,6

Variables	Factor 1	Factor 2	factor 3	Factor 4
Spain	1,4	4,4	-0,5	-1,8
Sweden	1,1	2,4	0,2	-0,2
Switzerland	1,0	0,5	0,0	-0,5
The Netherlands	-1,9	-2,2	1,9	0,1
United Kingdom	-2,6	-17,7	-3,0	1,1
DJStoxx 600 (497 firms)	-4,3	-1,4	-0,5	0,3
Eurostoxx (264 firms)	-2,2	-1,4	-0,5	0,3
SBF250 (90 firms)	-3,6	7,6	1,0	-1,3
SBF120 (85 firms)	-3,9	7,1	0,7	-1,0
CAC40 (40 firms)	-6,6	5,4	-0,1	-0,1
DJStoxx 200 (200 firms)	-10,7	-0,2	-2,1	0,8

Source : VIGEO data, PCA realized by the authors.

TABLE: Description by sector of the factorial axises (coordinates of the different variables)

Variables	Factor 1	Factor 2	factor 3	Factor 4
Aerospace	-0,7	-0,5	-0,2	-1,0
Automobiles	-2,6	2,6	-1,6	-3,0
Banks	-2,0	3,1	6,5	1,3
Beverage	-0,2	0,6	-1,4	1,1
Broacasting and advertising	2,4	0,5	0,3	1,3
Building materials	0,0	2,0	-1,1	-0,7
Chemicals	-3,1	0,8	-0,6	2,3
Electric and gas utilities	-1,9	2,2	-3,1	-2,3
Electric components	1,1	-1,2	1,1	-0,5
Energy	-2,1	-0,3	-2,4	-3,2
Financial services	1,4	-2,9	2,7	-1,4
Food	3,5	-2,9	-1,6	-1,2
Forest products	-1,4	2,6	-2,5	-0,3
Health care equipments	2,4	-0,1	2,1	1,2
Heavy construction	0,7	2,2	0,3	-2,4
Home construction	-0,5	-2,6	-4,0	-0,8
Hotel, leisure goods	1,8	-2,1	3,2	-0,1
Industrial goods and services	2,4	-3,1	1,7	-2,7

Variables	Factor 1	Factor 2	factor 3
Insurance	-1,9	-1,5	4,3
Luxury goods and cosmetics	0,2	2,1	0,4
Mechanical components	3,2	1,1	1,7
Mining and metals	-0,3	-1,5	-0,6
Pharmaceutical and biotechnologies	1,0	1,2	-1,5
Publishing	-0,2	-2,3	0,2
Software and IT services	1,4	-0,4	-0,7
Specialised retail	0,1	-1,7	-1,4
Supermarkets	-0,2	0,8	-2,7
Technology - Hardware	-1,2	1,6	-2,0
Telecommunications	-0,8	0,4	-4,1
Tobacco	-0,5	-1,6	-1,6
Transports and logistic	0,3	2,0	-1,5
Travel and tourism	-1,0	-1,3	-0,3
Waste and water utilities	-1,7	-1,0	-1,6

Source : VIGEO data, PCA realized by the authors.

Communication

The main methodological difficulty is that this level of advertising is unobservable :

- Communication on CSR is not separably available.

$\Rightarrow$ Consider the level of Sustainable Development reporting as a proxy of the general level of CSR communication

These extra-financial reports are not homogenized and are purely voluntary (untill 2001 in France, but the loi NRE does not include sanctions.)

Most of these reports are not certified and the firms are free to give the information they want.

The sustainable development reporting made some progress in the last years : different organizations provided clear and homogenized guidelines.

The *Global Reporting Initiatives* (GRI) is probably the most famous one and is clearly supported by international organizations such as the United Nations.

$\Rightarrow$ Over the 593 firms of our sample, 406 have made at least one sustainable development report but only 187 (31%) used the GRI guidelines and 86 (14%) realized an external certification of their report.

Analyses of the content of annual report has been used as a general proxy of corporate social performance (Dejean and Oxibar, 2003). However, as noted by Ullman (1985) and Igalens and Gond (2005), the analysis of annual reports involves more a measurement of "*social discourse*" than of CSR per se. (Our hypothesis here)

⇒ The difference between the "social discourse" and the CSR measured by VIGEO data will be then considered as a possible greenwashing.

The external certification of the sustainable development reports will be a proxy of the 'hard information" level sent by the firm. (This certification has a significant cost)

Use of Corporateregister.com for the CSR reports.
We have whether or not the firms have already produced a
report, how many reports were produced, how many pages
each reports contain, the type of report and if the firm was
member of Global Compact, GRI or AA1100.
From these data, we build two measures of
CSR-communication : **communication experience** (measured
by the total number of reports) and the **communication effort**
which is a combination of (1) number of reports per year and
(2) the number of pages for the last report.

FIGURE: Communication experience
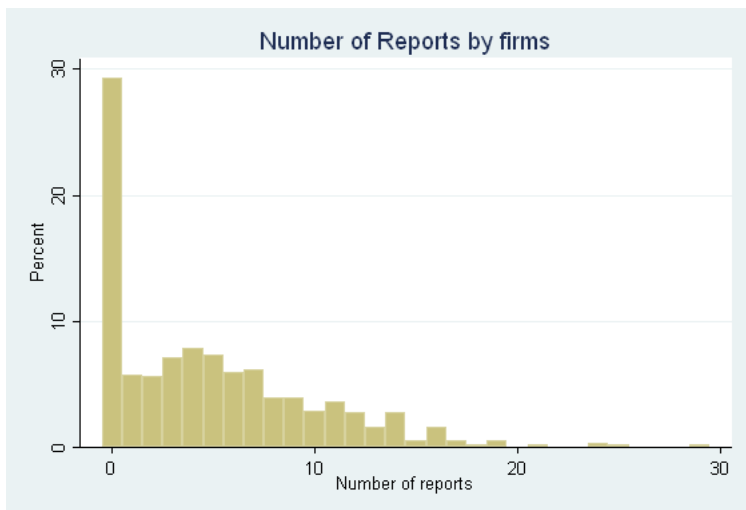
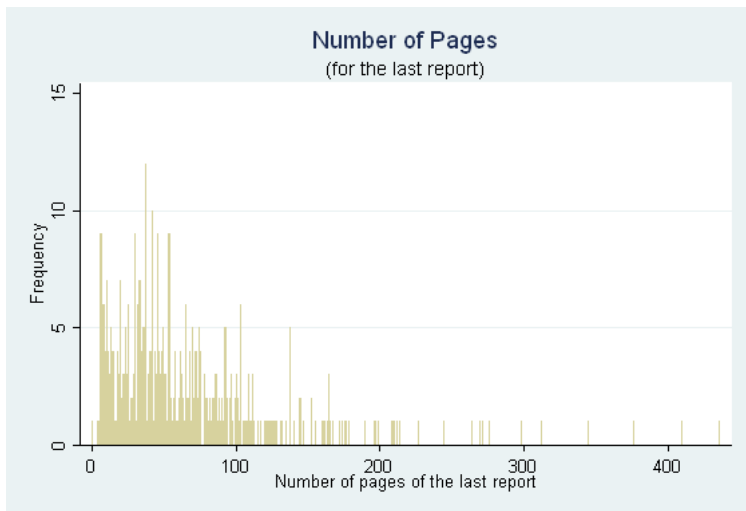Source : Corporateregister.com, data collected by the authors

FIGURE: Communication effort

We propose the following estimable equation :

$$RSENORM = \alpha X + \beta X^2 + \gamma Y + \chi Z + \epsilon \qquad (1)$$

RSENORM : level of CSR. X : variables related to CSR communication (the number of reports per year and the number of pages measuring the effort of communication ; and the total number of reports measuring the experience of communication.)

α : coefficients to be estimated associated to matrix X.

β : coefficients to be estimated associated to matrix X^2.

Y : variables measuring the "hard information" in our model (here GRI, the fact to follow the GRI guidelines, and GRI+ if an external certification is asked by the firm).

Z : control variables including the sector and the country of the firm

The error term ϵ is assumed to be i.i.d.

TABLE: Prediction of the model : signs of the estimated coefficients

Variables	Estimated coefficient	Sign
X (cues)	α	+
X^2	β	-
Y (hard information)	γ	+

TABLE: OLS estimates of CSR

Dep. Var.	(1) RSENORM	(2) RSENORM
Number of Pages (last report)	0.000575***	0.00116***
	(3.566)	(3.587)
[Number of Pages (last report)]^2		-2.28e-06**
		(-2.513)
Number of Reports (Total)	0.0143***	0.0204***
	(5.465)	(3.939)
[Number of Reports (Total)]^2		-0.000669**
		(-2.571)
Number of Reports (per year)	0.0162	0.0573***
	(1.045)	(2.698)
[Number of Reports (per year)]^2		-0.00322**
		(-2.587)
GRI	0.0933***	0.0661***
	(4.096)	(2.850)
GRI +	0.00236	0.0242
	(0.0950)	(1.017)
Constant	0.526***	0.506***
	(4.122)	(3.938)
Observations	437	437
R-squared	0.583	0.615
Country-specific fixed effects	Yes	Yes
Sector fixed effects	Yes	Yes

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

$\Rightarrow$ Interactions between the level of CSR and communication

TABLE: Distribution of GRI+ and CSR

	CSR		
	0	1	Total
GRI+			
0	77 (97,4%)	57 (77%)	134
1	2 (2,5%)	17 (23%)	19
Total	79 (100%)	74 (100%)	153

TABLE: Distribution of GRI and CSR

	CSR		
	0	1	Total
GRI			
0	75 (95%)	34 (45,95%)	134
1	4 (5%)	40 (54,05%)	19
Total	79 (100%)	74 (100%)	153

We propose the following specification (columns 1 and 3) :

$$GRI = \phi RSENORM + \varphi X + \gamma Z + \epsilon \qquad (2)$$

Two values of GRI tested : GRI = 1 if the firm follows the GRI guidelines. GRI+ = 1 only if the firm realizes an external certification of her report.
RSENORM : index of CSR ϕ : estimated coefficient associated to RSENORM
X : variables related to CSR communication φ : coeff associated to the matrix X.
Z : control variables
ϵ is the error term and is assumed to be i.i.d.
Estimation are performed using a robust probit estimator.

This first set of estimation does not take account of an effect predicted by the theoretical model : r_H affects negatively the effect of α on the optimal effort of hard information.
$\Rightarrow$ Inclusion of a term of interaction between communication variables and RSENORM

We thus estimate the following equation (columns 2 and 4) :

$$GRI = \phi RSENORM + \varphi X + \eta X.RSENORM + \gamma Z + \epsilon \quad (3)$$

TABLE: Probit estimates of hard information (GRI)

Dependant Variable	(1) GRI (checked)	(2) GRI (checked)	(3) GRI	(4) GRI
CSR	3.094***	4.213*	3.206***	4.379***
	(3.174)	(1.899)	(4.324)	(3.879)
Number of Pages (last report)	0.00479*	0.0259***	0.0160***	0.00931
	(1.710)	(2.686)	(5.405)	(1.061)
Number of Reports (per year)	0.127	0.760	0.264	2.119***
	(0.699)	(0.826)	(1.015)	(2.732)
Total number of Reports	0.196***	0.0770	0.107***	-0.0145
	(4.684)	(0.558)	(3.000)	(-0.148)
CSR x Number of Pages		-0.0333**		0.0110
		(-2.194)		(0.758)
CSR x Number of Reports per year		-1.006		-3.076***
		(-0.782)		(-2.816)
CSR x Number of Reports		0.231		0.205
		(0.927)		(1.245)
Constant	-3.981***	-5.006***	-1.519**	-1.324
	(-4.048)	(-3.548)	(-2.194)	(-1.636)
Country-specific fixed effects	Yes	Yes	Yes	Yes
Sector fixed effects	Yes	Yes	Yes	Yes
Observations	297	297	404	404
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE: OLS estimates of the CSR communication (cues)

Dep. Var.	(1) Number of Pages (Last report)	(2) Number of Reports (per year)	(3) Number of Reports (total)
RSENORM	50.84***	0.476**	5.796***
	(3.982)	(2.336)	(5.208)
Number of Pages (last report)		0.00213	0.00618*
		(1.260)	(1.656)
Number of Reports (per year)	6.401**		1.361**
	(2.489)		(2.148)
Number of Reports (Total)	1.350*	0.0988***	
	(1.836)	(4.638)	
GRI +	11.91	-0.0788	1.938***
	(0.998)	(-0.625)	(3.203)
GRI	38.61***	-0.100	1.596***
	(4.954)	(-0.638)	(3.065)
Constant	-20.07	-0.213	-2.134
	(-1.407)	(-1.471)	(-1.105)
Country Fixed Effects	Yes	Yes	Yes
Sector Fixed Effects	Yes	Yes	Yes
Observations	437	437	437
R-squared	0.548	0.387	0.651

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

TABLE: Determinants of CSR subcomponents

Dep.var.	(1) HRTS	(2) HR	(3) ENV	(4) CS	(5) CG	(6) CIN
Number of Pages (last report)	0.0671***	0.117***	0.0384	0.0530**	-0.0330	0.116***
	(2.759)	(4.699)	(1.464)	(2.393)	(-1.566)	(3.423)
[Number of Pages (last report)]^2	-0.000126	-0.000251***	-4.26e-05	-9.82e-05	0.000128**	-0.000290***
	(-1.549)	(-3.600)	(-0.600)	(-1.519)	(2.262)	(-3.191)
Number of Reports (Total)	1.084***	1.135***	2.892***	1.197***	0.728***	2.432***
	(3.553)	(2.953)	(7.126)	(3.447)	(2.680)	(5.554)
[Number of Reports (Total)]^2	-0.0345***	-0.0364**	-0.0918***	-0.0446**	-0.0180*	-0.0817***
	(-2.818)	(-2.128)	(-4.298)	(-2.496)	(-1.737)	(-4.502)
Number of Reports (per year)	1.561	3.598*	1.480	3.257**	1.804	-0.0211
	(1.047)	(1.802)	(0.858)	(2.388)	(1.249)	(-0.00961)
[Number of Reports (per year)]^2	-0.0728	-0.208*	-0.0337	-0.193**	-0.121	-0.0261
	(-0.838)	(-1.813)	(-0.335)	(-2.399)	(-1.466)	(-0.210)
GRI	4.514***	1.473	3.478**	3.721**	2.776*	3.623*
	(2.647)	(0.928)	(2.150)	(2.492)	(1.904)	(1.760)
GRI+	1.146	3.184*	3.263*	2.71	-0.926	4.230*
	(0.610)	(1.798)	(1.898)	(1.345)	(-0.548)	(1.773)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Observations	584	584	584	584	584	584
R-squared	0.430	0.565	0.606	0.489	0.637	0.501

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

- High correlation between the performances related to different CSR subcomponents. The correlation is lower with corporate governance which seems to have its own determinants and specific effects.
- Globally, the performance in environment and community involvements seems to have the highest explicative power for the determinants of communication
- For all CSR subcomponents : non-linear relation between *communication experience* and CSR performance.
- For Human ressources, community involvement and business behaviour : non-linear relation of *communication effort* with CSR performance.
- For the determinants of GRI and GRI+, Human Rights, Community involvement and Business Behaviour performances have a positive impact on the probability to follow the GRI guidelines or to ask for an external certification. Corporate governance has the opposite effect.

Theory : encompasses both equilibria with an investment in CSR and light greenwashing.

⇒ Dual effect of an increase in the level of CSR. It increases the reward for the consumer and the probability it will buy the product but it also raises incentives to practice light greenwashing.

Empirics :

- Inverted U-shape with communication experience and communication efforts
- The CSR level will affect positively the probability of "hard information"
- The interaction variable between CSR and communication is negative
- the communication effort is positively influenced by the level of CSR, and by the communication experience. This last effect may be explained by a learning effect which reinforce the efficiency of CSR strategies.