



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



How scary! An analysis of visual communication concerning genetically modified organisms in Italy

Vera Ventura, Dario G. Frisio and Giovanni Ferrazzi

Department of Economics, Management and Quantitative Methods, Università degli Studi di Milano

Several studies evidence the role of media in influencing public perception towards genetically modified organisms, while visual communication has been scarcely investigated. This paper aims at evaluating the exposure of Italian population to scary GMO-related images. A set of 517 images collected through Google are classified considering fearful attributes and an index that accounts for the scary impact (SI) of these images is built. Then through an ordered logistic regression we estimate the relationship between the SIIndex and a set of variables that describes the context in which images appear. Results reveal that the first (and most viewed) Google result images contain the most frightful contents. In addition, agri-food sector in Italy is strongly oriented in offering a negative representation of genetically modified organisms. Exposure to scary images could be a factor that affects the negative perception of GMOs in Italy.



1. Introduction

1.1. *GMO and public acceptance*

Genetically modified organisms have recently become one of the most controversial “science and society” issue, the center of a debate that divides scientific community and public opinion in the European Union.

In 2004 the Italian Academy of Science, together with 15 scientific societies published a consensus document in support of the safety of GMOs¹. Recently, more than twenty of Europe's most prominent plant scientists signed a joint letter warning that Europe may lose its research lead unless plant science is adequately funded, GM plant varieties that have been found safe are allowed and field trials are protected from vandalism².

European population express an extremely opposite attitude toward GMO. The 2010 Eurobarometer on life science and biotechnology reveals an overall suspicion of GM foods amongst the public. The 61% of Europeans agree that GM food makes them feel uneasy and a higher proportion (70%), think that GM food is fundamentally unnatural. A recent meta-analysis of 70 studies (Frewer et al., 2013) confirms that European consumers have more negative perception, attitudes and intention to purchase GM food compared to North Americans. Moreover, consumer resistance is a key barrier to the diffusion of genetically modified foods.

In the economics literature many studies investigate the factors that drive public resistance. Costa-Font et al. (2008) model consumers acceptance of GMOs as a complex decision-making process that includes individual attitudes, knowledge of product and process and perceptions of risk/benefit associated with GM food.

Individual attitudes comprehend socio-demographic and cultural factors. Many studies suggest that differences in cultural sensitivities are one of the main explanation for the differing levels of resistance to biotechnology (Gaskell et al., 1999; Heiman et al., 2000; Moon and Balasubramanian, 2004; Han and Harrison, 2007).

Another aspect that influence GMO acceptance is the perception of risks, mainly related to health and environmental concerns. Frewer et al. (1998) suggests that individual behaviors are driven by perceptions or beliefs about risks rather than the technical risks estimates provided by experts. For

¹ http://www.siga.unina.it/circolari/Consensus_ITA.pdf

² http://www.umu.se/digitalAssets/151/151958_open-letter-to-decision-makers-in-europe.pdf

Gaskell et al. (2004) the skeptical position derives from the absence of perceived benefits, that acts as predominant attribute, while risks appear to be less relevant. It follows that GM food fails to meet the key criterion of an innovation, the improvement of the *status quo*. Still, Costa-Font and Mossialos (2007) states the existence of simultaneity and endogeneity of risk and benefit perception: those individuals that are likely to identify high risks with regard to GM food might be those who also identify lower benefits. Savadori et al. (2004) comparing risk perception of biotechnology application among public (non-expert) and expert samples, found that public perceived all biotechnology application as more risky.

1.2. The role of media

Similar studies empirically show a direct association between knowledge of GM technology and support to GM foods (Magnusson and Koivisto Hursti, 2002; Malyska et al. 2014). It follows that knowledge plays a crucial role in public acceptance and some authors call for an increase in information in order to “fill the gap”. However, in the case of GMO, an extensive literature affirms that providing more information do not always corresponds in improved consumers’ GM knowledge and acceptance. This is mainly due to the presence of a media bias in risk amplification (Frewer et al., 2002; Scholderer and Frewer, 2003; Vilella-Vila and Costa-Font, 2008). Furthermore, McCluskey and Swinnen (2004) argue that “Bad News Hypothesis” is mainly driven by the demand of the audience rather than by inherent preferences of the media itself, as consumer tends to consume more bad news stories than good news stories. In confirmation of this results, Curtis et al. (2008) prove that a reduced consumption of biotechnology information, as in Lesser Developed Countries, contributes to lower risk perceptions among consumers.

1.3. Visual communication

Nevertheless, the majority of the studies that deals with the role of media in GMO-related issues focus on the analysis of written communication. They considered the trend of newspaper coverage, in terms of number of articles, as in Kalaitzandonakes et al. (2004), Marks et al. (2007), Lewison (2007) and Vilella-Vila and Costa Font (2008), a content analysis based on keywords (Marks et al., 2003; Crawley, 2007) or the comparison between scientific literature and popular magazines contents (Mcinerney et al., 2004). Differently, visual communication concerning GMOs have been less investigated. The use of images as communication tools is validated by the “picture superiority effect” theory, first proposed

by Paivio & Csapo (1973) and Nelson et al. (1976). Apart from the discussion of the cognitive processes that explain the theory, empirical findings simply states that pictures are better remembered than words. This approach is widely used in marketing (Childers and Houston, 1984; Houston et al., 1987; McQuarrie and Mick, 2003; Pieters and Wedel, 2004), whereas, to the best of our knowledge, this is the first work that shows its application in relation to risk communication and public acceptance of GMO.

This paper aims at gaining insight into the visual communication to which Italian population is exposed about GMOs, in order to investigate if images could have contributed to shape a negative public perception.

2. Methods

In one of the first phases of the study we needed to choose which media to cover, and the selection of the Google search engine derives from multiple reasons: above all, recently web searches have become one of the main tools in seeking for information. A recent survey (FullPlan, 2013) reveals that in Italy the 68% of population use a search engine more than once a day, and that one of the principal purpose of searches is to increase knowledge about something seen/read/heard in others communication mediums (TV, radio, social networks). Moreover the report disclose that, among the various services that search engines have started to offer in the last years (i.e. images, maps, news, shopping) within search results pages , the 56% of Italians click on images. This data suggest that web images are frequently used as ancillary tools to enhance comprehension of a particular topic. Additionally, Google search engine provides an advanced search section that filter results according to different criteria: images are rapidly displayed and easily collected, making data recovering effective.

We used the Google advanced search service, in order to filter images for the country of origin (Italy). The search has been performed using the Italian acronym for genetically modified organisms (OGM) as keyword. We collected 517 images together with the URL link of the website in which they appear.

For the construction of the Scary Impact Index, we arranged a coding scheme that would capture the most relevant features of the image. It includes the attributes that could transfer messages of “scariness”, or more in general that could provoke feelings of fear to the consumer. The complete list of attributes is listed in Table 1.

TABLE 1 HERE

The presence of each scary attribute has code 1. Obviously each image could be characterized by more than one attribute. The SIIindex accounts for the total degree of scariness of each image, as the sum of the score for each attribute. Figure 1 shows some examples of image categorization, in order to clarify the construction of the index.

FIGURE 1 HERE

A set of dummy variables that further describe the images has been created (Table 2): *satire* if the image is a satirical cartoon, *GMfree campaign* in the case of presence of the logo that promotes the ban of genetically modified organisms, *cultivated land* when images represent agricultural landscapes, *lab* if there is a representation of laboratory, *benefit* if the image shows any positive effect of GM plants (i.e. Papaya damaged by Ringspot virus versus virus resistant papaya) and two dummy variables that identify *graphs* (i.e. ISAAA tables on commercialized biotech/GM crops) and *conference/event's* flyers.

A further purpose of the work deals with the identification of the possible factors that could affect the SIIindex. They concern different aspects of the context in which image is included.

First of all, the order of appearance: through a serial *ID number* each image is classified according to its position in the Google result pages. This variable can reveal if the level of scariness follows or not a consistent pattern of distribution throughout the dataset, mainly considering that the first results are generally the most viewed by Google users. The reasons why an image occupies the first positions of the search results is beyond the purpose of this paper: the variable ID give some information about the level of public exposure to scary images that refers to GMOs.

Secondly, we considered sources, in order to understand the type of actors involved in producing information about GMO. We create dummy variables that classify the websites in which images appears: *newspapers* (both traditional and online), *blogs*, *political*, *institutional or scientific* websites, *educational* websites.

We also added the variable *conspiracy* since during the sources classification phase the presence of numerous websites concerning this issues (power of multinationals, secrets, UFOs, chemtrails) were identified. Furthermore, we create an additional dummy variable that identifies websites that focus on *agri-food* sector, regardless of the previous categories of source classification.

Finally, we built a variable that describes the overall viewpoint of the page in which image is included: *pro-GM*, *neutral* or *against GM*.

TABLE 2 HERE

As *SIIndex* is an ordinal variable, we performed an ordered logistic regression (OLR). The second version of the index, *SIIndex2*, has the aim to stress the two most fearful variables, reference to war and to hazard/death, that receive a greater weight doubling their score.

3. Results and discussion

3.1. Description of the *SIIndex*

The 517 images collected from Google show a level of scariness that ranges from 0 (no scary attributes) to a maximum degree of 5 (Table 3). Notably the 42% of results are images that have index 0, namely that do not convey any negative attributes toward GMO. These images are often neutral pictures that could have a simple descriptive function in completing the written text, and suggesting the reader that the web page presents an agricultural topic.

TABLE 3 HERE

Nevertheless the majority of images, almost 58%, are described by an index ≥ 1 , indicating that the negative message that GMO images convey slightly prevails over positive or neutral information. Frequency decreases as index grows, being the most frightful images with score 5 only 16 vs a set of 130 images scored 1.

3.2. Sources analysis

The interest in classifying the web sources arise from the necessity to outline the context of GMO related images. Moreover, online images concerning GMOs are often inserted in a web page that also include a written text that is supposed to be consistent with image: more favorable is the text, less scary will be the image. For this purpose, the classification of sources is integrated with the analysis of the global viewpoint of the web page in which images are found.

Table 4 outlines that newspapers still preserve the predominant role in information. Almost half of the results derive from the traditional journalistic activity, mostly made of printed newspapers that in parallel offer an online version of their contents. Interestingly, the second type of source involved in GMO information are blogs (176 results), a category that includes a sort of “self-made” information, mainly managed by a single person or small groups of people, in absence of a structured editorial staff. The pattern of GMO attitude of these two principal sources – newspapers and blogs- shows some remarkable differences. Though for newspapers No-GM contents strongly overpass the Pro-GM ones, the 45,2% of articles convey neutral information, as news reporting about the European Commission activity on genetically modified foods. On the contrary, Blog’s information presents an evident orientation toward the opposition to GMOs (75%), following a pattern very similar to the “political” category. As expected, the most favorable position is found in websites that provide scientific information (43,8%), while the opposite behavior is found for conspiracy theorists pages. More in general, the total distribution of the GMO’s viewpoint show a light prevalence of No-GM contents (57%), in line with the results shown in Table2

TABLE 4 HERE

3.3. Factors affecting the SIIndex

We performed two ordinal logistic regressions having SIindex and SIindex2 as dependent variables. The independent variables refers to image position (ID), image attributes, sources and the global viewpoint of web pages.

One of the main results of this study is that the position of the image significantly affects SIIndex (Table 5), and the sign of the relationship suggests that as ID grows, the index tends to decrease. In other words, the first results of the web searches contain the most scary images. Apart from the analysis of the mechanisms able to define the order of appearance of results, that go beyond the purpose of this work, the meaning of the relationship ID/SIIndex must be read in terms of exposure.

The dynamics of Web results consultation are characterized by the highest visibility for the first pages, while almost anyone will reach to consult the content of the least results. It follows that the majority of web users have access to a set of images that convey negative messages concerning GMOs. Then, exposition to scary images could be a factor that affects the negative perception of genetically modified organisms in Italy.

Considering the variables that describes the attributes of images it emerges that the role of GM free campaign is not significant. Three variables that refers to agricultural landscapes, laboratory, and infographics negatively affect the SIIndex, conveying almost neutral information about GMOs. Among them, the variable that shows the strongest relationships is *Graph*, confirming the prominent role of scientific production in supplying objective and unbiased information. On the contrary, the presence of images that refers to events, almost represented by conferences, has the effect to reinforce negative communication on GMOs.

TABLE 5 HERE

Moving to sources, the first aspect of interest is that none of the variables *Newspapers*, *Blogs*, *Political site*, *Scientific site*, *Institution*, *Educational site* show significant relationships with SIIndex. Though this results could be expected for the categories *Newspapers* and *Blogs* because of the great diversification of the actors involved, the lack of significance for institutional and scientific sources could reveal their weakness in proposing positive or at least objective information to the public.

The most surprising results concern the variables *Agri-food* and *Conspiracy theorists*, that paradoxically show a very similar behavior: the relationship with SIIndex is significant and positive (.6820189 and .9223643 respectively), meaning that this two categories tends to enhance the Scary Impact of images. The fact that agri-food specialized websites deals with GMO themes using a type of communication similar to conspiracy theorist raise serious concerns about the ability of this sector in managing innovation.

The regression output also illustrates that the influence of the variables concerning global viewpoint is not uniform. It emerges that the overall attitude of web page in which image appears positively affects the SIIndex only in the case of No-GM contents (1.091264), showing concordance between image and written text. On the contrary, web pages that offer a neutral viewpoint are not endowed with the same coherence and could even present visual elements of fear.

Finally, the regression using SIIndex2 (for which the categories “war” and “hazard/death” are double-counted) shows consistent results for all the variables, except for *Satire* that turns to be significant and positive, probably because this type of visual communication frequently use elements of fear that refers to death or war, with the extent to reinforce the caricature of the topic.

4. Conclusions

The attempt of this work was to investigate visual communication concerning genetically modified organisms in Italy, and its potential role in influencing public perception. We decided to use Google as

the world leader in web search engine, and collected 517 images filtered for Italy as Country of origin and OGM (GMO) as keyword. The categorization of results allowed the construction of an index that describes the degree of “scariness” of pictures, and then investigate the potential factors affecting it.

The descriptive analysis shows that the majority of images (58%) contain at least one scary element, and that they are inserted in web pages that convey in the 57% of cases a negative attitude toward GMOs.

Public exposure to GMO-related scary images is confirmed by the results of the OLR. Moreover, agri-food sector in Italy appears strongly oriented in offering a negative representation GMOs. We can assume that this could be partially due to interest in protecting the market of traditional/typical/local food products in Italy. Nevertheless, in line with McCluskey and Swinnen (2004), we suggest that “Bad News Hypothesis” could also be applied to agri-food stakeholders that, driven by the need for profits, tends to support consumers’ fears concerning GMOs. In future prospects, the work could extend the analysis in others EU Countries in order to make comparisons with Italian results.

References

- Childers, T. L., Houston, M. J., 1984. Conditions for a picture-superiority effect on consumer memory. *Journal of Consumer Research*, 643-654.
- Costa-Font, J., Mossialos, E., 2007. Are perceptions of 'risks' and 'benefits' of genetically modified food (in) dependent?. *Food Quality and Preference*, 18(2), 173-182.
- Costa-Font, M., Gil, J. M., Traill, W. B., 2008. Consumer acceptance, valuation of and attitudes towards genetically modified food: Review and implications for food policy. *Food Policy*, 33(2), 99-111.
- Crawley, C. E., 2007. Localized debates of agricultural biotechnology in community newspapers: A quantitative content analysis of media frames and sources. *Science Communication*, 28(3), 314-346.
- Curtis, K. R., McCluskey, J. J., Swinnen, J. F., 2008. Differences in global risk perceptions of biotechnology and the political economy of the media. *International Journal of Global Environmental Issues*, 8(1), 77-89.
- Frewer, L.J., Howard, C. Aaron, I., 1998. Consumers Acceptance Of Transgenic Crops. *Pesticide Science* 52, 338-393.
- Frewer, L. J., Miles, S., Marsh, R., 2002. The media and genetically modified foods: evidence in support of social amplification of risk. *Risk analysis*, 22(4), 701-711.
- Frewer, L. J., van der Lans, I. A., Fischer, A. R., Reinders, M. J., Menozzi, D., Zhang, X., Zimmermann, K. L., 2013. Public perceptions of agri-food applications of genetic modification—a systematic review and meta-analysis. *Trends in Food Science & Technology*, 30(2), 142-152.
- FullPlan, 2013. Survey 2013: gli Italiani e i motori di ricerca. www.fullplan.it
- Gaskell, G., Bauer, M. W., Durant, J., Allum, N. C., 1999. Worlds apart? The reception of genetically modified foods in Europe and the US. *Science*, 285(5426), 384-387.
- Gaskell, G., Allum, N., Wagner, W., Kronberger, N., Torgersen, H., Hampel, J., Bardes, J., 2004. GM foods and the misperception of risk perception. *Risk analysis*, 24(1), 185-194.
- Han, J. H., Harrison, R. W., 2007. Factors influencing urban consumers' acceptance of genetically modified foods. *Applied Economic Perspectives and Policy*, 29(4), 700-719.
- Heiman, A., Just, D. R., Zilberman, D., 2000. The role of socioeconomic factors and lifestyle variables in attitude and the demand for genetically modified foods. *Journal of Agribusiness*, 18(3), 249-260.

- Houston, M. J., Childers, T. L., Heckler, S. E., 1987. Picture-word consistency and the elaborative processing of advertisements. *Journal of Marketing Research*, 359-369.
- Kalaitzandonakes, N., Marks, L. A., Vickner, S. S., 2004. Media coverage of biotech foods and influence on consumer choice. *American Journal of Agricultural Economics*, 86(5), 1238-1246.
- Lewison, G., 2007. The reporting of the risks from genetically modified organisms in the mass media, 2002–2004. *Scientometrics*, 72(3), 439-458.
- Magnusson, M. K., a Koivisto Hursti, U. K., 2002. Consumer attitudes towards genetically modified foods. *Appetite*, 39(1), 9-24.
- Małyska, A., Maciąg, K., Twardowski, T., 2014. Perception of GMOs by scientists and practitioners—the critical role of information flow about transgenic organisms. *New biotechnology*, 31(2), 196-202.
- Marks, L. A., Kalaitzandonakes, N., Allison, K., Zakharova, L., 2003. Media coverage of agrobiotechnology: did the butterfly have an effect?. *Journal of Agribusiness*, 21(1), 1-20.
- Marks, L. A., Kalaitzandonakes, N., Wilkins, L., Zakharova, L., 2007. Mass media framing of biotechnology news. *Public Understanding of Science*, 16(2), 183-203.
- McCluskey, J. J., Swinnen, J. F., 2004. Political economy of the media and consumer perceptions of biotechnology. *American Journal of Agricultural Economics*, 86(5), 1230-1237.
- McInerney, C., Bird, N., Nucci, M., 2004. The Flow of Scientific Knowledge from Lab to the Lay Public The Case of Genetically Modified Food. *Science Communication*, 26(1), 44-74.
- McQuarrie, E. F., Mick, D. G., 2003. Visual and verbal rhetorical figures under directed processing versus incidental exposure to advertising. *Journal of consumer research*, 29(4), 579-587.
- Moon, W., Balasubramanian, S. K., 2004. Public attitudes toward agrobiotechnology: the mediating role of risk perceptions on the impact of trust, awareness, and outrage. *Review of Agricultural Economics*, 26(2), 186-208.
- Nelson, D. L., Reed, V. S., Walling, J. R., 1976. Pictorial superiority effect. *Journal of Experimental Psychology: Human Learning and Memory*, 2(5), 523.
- Paivio, A., Csapo, K., 1973. Picture superiority in free recall: Imagery or dual coding?. *Cognitive psychology*, 5(2), 176-206.
- Pieters, R., Wedel, M., 2004. Attention capture and transfer in advertising: Brand, pictorial, and text-size effects. *Journal of Marketing*, 68(2), 36-50.
- Savadori, L., Savio, S., Nicotra, E., Rumiati, R., Finucane, M., Slovic, P., 2004. Expert and public perception of risk from biotechnology. *Risk analysis*, 24(5), 1289-1299.

Scholderer, J., Frewer, L. J., 2003. The biotechnology communication paradox: experimental evidence and the need for a new strategy. *Journal of consumer policy*, 26(2), 125-157.

Vilella-Vila, M., Costa-Font, J., 2008. Press media reporting effects on risk perceptions and attitudes towards genetically modified (GM) food. *The Journal of Socio-Economics*, 37(5), 2095-2106.

Tables and Figures

Table 1. Coding scheme for the construction of the SIindex. Source: own elaboration

	YES	NO
IMAGINARY VEGETABLE Modification of vegetables	1	0
IMAGINARY ANIMAL Modification of animals	1	0
MODIFICATION OF SIZE Bigger vegetable/animal	1	0
MODIFICATION OF COLOUR I.e. blue oranges	1	0
MODIFICATION OF SHAPE I.e. square cherry	1	0
SYRINGE Presence of syringe	1	0
WAR Reference to war, i.e. weapons	1	0
HAZARD/DEATH Reference to risk, i.e. skulls	1	0
DNA Presence of DNA double helix	1	0
DRUG Presence of medicines, pills	1	0
ACTIVISM Images of activists, demonstrations	1	0
MONSTER Presence of monstrous creature	1	0

Figure1. Examples of different score for SIIndex. Source: own elaboration



IMAGE 1

Attributes: No scary attributes

Index=0

Source:

<http://www.beppegrillo.it/movimento/parlamento/2013/12/ogm-il-governo-letta-fa-contenta-la-multinazionale-monsanto.html>



IMAGE 2

Attributes: Imaginary vegetable, modification of shape, modification of colour

Index=3

Source:

<http://www.genitronsviluppo.com/2009/05/18/ogm-effetti-manipolazione-genetica/>



IMAGE 3

Attributes: Imaginary vegetable, modification of colour, modification of shape, reference to hazard, reference to war.

Index= 5

Source:

<http://progettogalileo.wordpress.com/2008/10/06/gli-ogm-uccidono-le-api-anzi-no-sono-i-cellulari-una-collezione-di-bufale-su-lunita/>

Table 2. Variables description. Source: own elaboration

	Variable name	Description	Obs	Mean	Std. Dev.	Freq
Depvar						
	Scary index		517	1.191	1.374	
	Scary Index2		517	1.398	1.635	
Position						
	ID		517	259	149.389	
Content						
	Satire	<i>dummy variable</i>	517			38
	GMfree Campaign	<i>dummy variable</i>	517			68
	Lab	<i>dummy variable</i>	517			32
	Cultivated land	<i>dummy variable</i>	517			62
	Benefit	<i>dummy variable</i>	517			8
	Graph	<i>dummy variable</i>	517			51
	Conference/Event	<i>dummy variable</i>	517			13
Source						
	Newspapers	<i>dummy variable</i>	517			250
	Blogs	<i>dummy variable</i>	517			176
	Political	<i>dummy variable</i>	517			22
	Scientific	<i>dummy variable</i>	517			32
	Institutional	<i>dummy variable</i>	517			7
	Educational	<i>dummy variable</i>	517			8
	Agri-food	<i>dummy variable</i>	517			86
	Conspiracy	<i>dummy variable</i>	517			48
Global viewpoint						
	<i>Pro Gmo</i>	<i>dummy variable</i>	517			47
	<i>Neutral</i>	<i>dummy variable</i>	517			294
	<i>Against GM</i>	<i>dummy variable</i>	517			176

^aRemoved for estimation purpose.

Table 3. Distribution of the SIIndex. Source: own calculation

Index	Frequency	%	Aggregate %
0	220	42.55	42.55
1	130	25.15	67.70
2	74	14.31	82.01
3	50	9.67	91.68
4	27	5.22	96.91
5	16	3.09	100.00
Total	517	100	100

Table 4. Descriptive analysis of sources. Source: own calculation

Source	N.	No GM	Pro GM	Neutral
		%	%	%
Newspaper	250	44	10.8	45.2
Blog	176	75	6.82	18.18
Conspiracy Theorists	48	97.92	0	2.08
Scientific site	32	12.5	43.75	43.75
Political site	22	72.73	4.55	22.73
Educational Site	8	0	0	100
Institutional site	7	42.86	0	57.14
Others	27	48.15	11.11	40.74
Total	570	57.02	10	32.98
Agrifood	86	53.49	9.30	37.21

Table5. Results of ordinal logistic regressions. Source: own elaboration

	Scary Index		Scary Index2	
Observations	517		517	
Pseudo R ²	0.1346		0.1230	
	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>
ID	-.0033 ***	(.00062)	-.0030 ***	(.000609)
<i>Attribute</i>				
Satire	.4745	(.3403277)	.6803 ***	(.3364444)
GM-free Campaign	-.1053	(.2755486)	.0117	(.277455)
Lab	-1.6934 ***	(.3856224)	-1.5341 ***	(.3857567)
Cultivated Land	-1.960 ***	(.3107058)	-1.8127 ***	(.3304531)
Graph	-3.3146 ***	(.5316474)	-3.2126 ***	(.5475042)
Conference/Event	.9913 ***	(.3689245)	.8552 ***	(.3705618)
<i>Source</i>				
Newspapers	-.2197	(.3161397)	-.2199	(.3106426)
Blogs	.07878	(.3077282)	-.0064	(.3004029)
Political site	-.2162	(.4109145)	-.2569	(.3868802)
Scientific site	-.1696	(.5253672)	-.2186	(.5094864)
Institution	-1.3359	(-1.762543)	-1.2530	-1.790.332
Educational site	-.4382	(.8043538)	-.4020	(.7587101)
Agri-food	.6820 ***	(.2387072)	.5863 **	(.2378865)
Conspiracy theorist site	.9224 ***	(.2703427)	1.1499 ***	(.2865907)
<i>Viewpoint</i>				
No-GM	1.0913 ***	(.4071605)	1.0539 **	(.3991348)
Neutral	.5151	(.4019045)	.3417	(.3923226)

Significance at *p<0.05, **p<0.01, ***p<0.001