



Supplement of

Geoscientists' views about science communication: predicting willingness to communicate geoscience

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Supplementary Material A

Survey on geoscience communication practices and perceptions ^(*), ^(**)

Indicator		Question
Biographical profile		
Biographical profile	Age	Q1. Age: < 30, 30-40, 41-50, > 50 years old
	Gender	Q2. Gender: Female, Male, Other
	Academic context	Q3. Academic degree
		Q4. Degree area
	Area of expertise	Q10. Did you receive any training in communication? Yes, no
		Q5. Area of expertise
	Professional category	Q6. How do you describe your scientific area? Pure; applied
	Professional experience	Q7. Professional Category: post graduation student; technician; researcher; higher education professor; elementary and secondary education teacher; science communicator, other
Experiences / Practices	Geographical context	Q9. Professional experience: < 5, 5-10, 10-20, > 20 years
		Q8. Location of the institution where you work
	Experiences / Practices	
	Frequency	Q12. How many science communication activities have you carried out in the last year? More than 10; 4-9; 1-3, none
	Type of activities	What kind of science communication activities do you usually promote? (Never; rarely; usually; often) Q11.1 Field trips Q11.2 Visits to Museums Q11.3 Visits to Science Centres Q11.4 Visits to research institutions Q11.5 Workshops Q11.6 Exhibitions Q11.7 Public lectures Q11.8 Public Debates / Clarification Sessions Q11.9 Science Exhibitions (exhibitions, fairs, ...) Q11.10 Books Q11.11 Scientific papers Q11.12 Popular science news articles Q11.13 Opinion articles
		Q20. What kind of science communication initiatives in general have you participated in [Portuguese initiatives]? Select: Science Cafes (Ciência Viva); '90 seconds science' (radio show); Tertúlias FNACiência (public talks); Pint of Science; PubHD; Scientific Culture Day; Science and Technology Week; European Researchers' Night; Other
		Q21. What type of geoscience communication initiatives have you participated in [Portuguese initiatives]? Select: Living Science in Summer – Geology in Summer; Geologist's Day; European Geoparks Week; Mine Route Week, Other
	Contexts	In what contexts do you promote communication activities? (Never; rarely; usually; often) Q18.1 Formal (schools, universities, ...) Q18.2 Informal (museums, geosites, protected areas,...) Q18.3 Unconventional (market, shopping centre, street,...) Q22. Indicate the four places in Portugal where you carried out more geoscience communication activities
Experiences / Practices	Audiences	What audience do you usually communicate with? (Never; rarely; usually; often) Q13.1 Journalists Q13.2 Science journalists Q13.3 Students

	<p>Q13.4 Geosciences teachers</p> <p>Q13.5 Teachers (other fields)</p> <p>Q13.6 Geoscience technical professionals</p> <p>Q13.7 Technical professionals (other fields)</p> <p>Q13.8 Enterprises</p> <p>Q13.9 Researchers in Geosciences</p> <p>Q13.10 Researchers (other fields)</p> <p>Q13.11 Families</p> <p>Q13.12 Politicians</p> <p>Q13.13 NGOs</p> <p>Q13.14 Local communities</p> <p>Q13.15 'General Public'</p>
Peer communication	<p>What kind of science communication activities do you do, targeted at peers? (Never; rarely; usually; often)</p> <p>Q14.1 Scientific meetings and congresses</p> <p>Q14.2 Scientific publications</p> <p>Q14.3 Use of Academia platform</p> <p>Q14.4 Use of LinkedIn Platform</p> <p>Q14.5 Use of Researchgate Platform</p> <p>Q14.6 Participation in online forums</p> <p>Q28. Have you participated in scientific meetings/congress sessions dedicated to Science Communication? Yes, no</p> <p>Q29. Have you made scientific publications on science communication? Yes, no</p>
Institutional communication	<p>How do you participate in the communication of your institution (newsletter, internal newspaper, website, social media, etc.)? (Never; rarely; usually; often)</p> <p>Q15.1 Sending scientific content</p> <p>Q15.2 Sending papers and recent research results</p> <p>Q15.3 Disseminating the participation in scientific events</p> <p>Q15.4 Disseminating of science communication activities</p>
Communication with policy makers	<p>What kind of science communication activities do you do, targeted at policy makers? (Never; rarely; usually; often)</p> <p>Q16.1 Clarification sessions</p> <p>Q16.2 Meetings</p> <p>Q16.3 Non-technical reports</p>
Media	<p>What kind of science communication activities do you do, targeted at media? (Never; rarely; usually; often)</p> <p>Q17.1 Give an interview for the media (newspaper, radio or TV)</p> <p>Q17.2 Participation in media debate</p> <p>Q17.3 Sending a scientific press release</p> <p>Q17.4 Text production for popular science magazines</p> <p>Q17.5 Making opinion texts for non-specialist media</p> <p>Q17.6 Support journalists in clarifying scientific questions</p>
Participatory contexts	<p>Have you performed any of the following science communication activities? (Never; 1 time; 2-3; more than 4 times)</p> <p>Q19.1 Citizen Science Activity</p> <p>Q19.2 Public clarification session</p> <p>Q19.3 Debate with local communities</p> <p>Q19.4 Focus groups</p>
Geoparks	<p>Q23. Have you already carried out any communication actions in a Geopark in Portugal? Yes, no</p> <p>Q24. If you answered yes to the previous question (Q23), indicate which one(s)?</p>
Online platforms	<p>Which online platforms do you use to communicate science? (Never; rarely; usually; often)</p> <p>Q25.1 Email</p> <p>Q25.2 Personal blog</p> <p>Q25.3 Institutional blog</p> <p>Q25.4 Personal website</p> <p>Q25.5 Institutional website</p> <p>Q25.6 Facebook (personal account)</p> <p>Q25.7 Facebook (institutional account)</p> <p>Q25.8 Twitter (personal account)</p>

		Q25.9 Twitter (institutional account) Q25.10 YouTube (personal account) Q25.11 YouTube (institutional account) Q25.12 Instagram (personal account) Q25.13 Instagram (institutional account)
		What content related to Geosciences do you share on your social media? (Never; rarely; usually; often) Q26.1 Information related to work at my institution Q26.2 Information related to places where I do fieldwork Q26.3 Events in which I participate Q26.4 Events in my area that I find interesting, even if I don't participate Q26.5 News related to my work Q26.6 News related to colleagues I know Q26.7 Geoscience news that I find interesting Q26.8 Clarifications and opinions in discussion groups
	Geoscientific topics	Q27. Indicate three geosciences topics on which you do communication activities.
Representations / Perceptions		
Representations / Perceptions	Perception of personal preparation	Q30.1 Do you feel with the necessary skills to communicate science? Q30.2 Do you feel prepared to communicate about the social and ethical implications of science? (Not prepared at all; moderately prepared; well prepared; very well prepared; I don't know)
	Position on responsibility	In your opinion, (Strongly disagree; moderately disagree; neither agree nor disagree; moderately agree; strongly agree) Q36.2 do scientists have a moral duty to engage with the non-expert public about the social and ethical implications of their work? Q36.5 would you like to be forced to take a public position on the issues raised by your work?
	Interest in training	Q31. How willing would you be to attend training on communication with journalists and the public? Very willing; moderately willing, not willing at all
	Time	Q32. Regarding your entire professional activity, how important is it for you to find time to engage with non-specialist audiences? Not at all important; not very important; equally important; quite important; very important
	Institution attitude	Q33. To what degree does your institution value communication activities? High; medium; low
	Objectives	What are your goals when you communicate science? (Disagree; moderately agree; strongly agree) Q34.1 to make the importance of geosciences in everyday life known Q34.2 to show that geosciences are interesting Q34.3 to share my passion for geosciences Q34.4 to ensure that the public is better informed about science and technology Q34.5 to enable citizens to make more informed decisions Q34.6 to transmit the values of science Q34.7 to support policy makers Q34.8 to know people's opinion on geoscientific topics Q34.9 to make my work known Q34.10 to contribute to public debates about science Q34.11 to know the implication of geosciences and of my work in citizens' life Q34.12 to attract professionals to my area Q34.13 to promote the public image of my institution
	Motivations	Why do you do science communication? (Disagree; moderately agree; strongly agree) Q35.1 It is part of my professional duties Q35.2 To attract research funding Q35.3 Because funded research projects require Q35.4 To respond the requests of my institution Q35.5 To respond to invitations (colleagues, journalists, teachers, entities) Q35.6 It is scientist's duty
	Perceptions about the scientific field	In your opinion: Strongly disagree; moderately disagree; neither agree nor disagree; moderately agree; strongly agree

	<p>Q36.1 Has your work implications for society and/or policy makers?</p> <p>Q36.3 Is your work interesting to non-specialist audiences?</p> <p>Q36.4 Is your work too specialized to make sense to non-specialist audiences?</p>
Obstacles	<p>What obstacles do you find in the science communication? (Disagree; moderately agree; strongly agree)</p> <p>Q37.1 lack of time</p> <p>Q37.2 lack of financial support</p> <p>Q37.3 discomfort in communicating with lay audiences</p> <p>Q37.4 lack of preparation/training</p> <p>Q37.5 lack of public interest</p> <p>Q37.6 lack of public knowledge</p> <p>Q37.7 negative opinion by peers</p> <p>Q37.8 these activities make science less rigorous</p> <p>Q37.9 the complexity of my scientific field</p> <p>Q37.10 fear of creating misunderstandings and generating controversy</p> <p>Q37.11 misrepresentation of scientific content by journalists</p>
Perception on geoscientific topics	<p>Which geoscience topic do you consider:</p> <p>Q38 most pertinent to communicate?</p> <p>Q39 most difficult to communicate?</p> <p>Q40 easier to communicate?</p> <p>Q41 more attractive to communicate?</p>
Effectiveness of communication channels	<p>Q42 List the most effective communication channels in science communication (List from 1-12)</p> <p>Book, Leaflet/Brochure, Panel, Interactive module, Game, Video, Social media post, News in the media, Scientific paper, Popular science article, Public debate, TV interview</p>
Media	<p>In your opinion: (Strongly disagree; moderately disagree; neither agree nor disagree; moderately agree; strongly agree)</p> <p>Q43.1 The news coverage on geoscience is adequate.</p> <p>Q43.2 The media are more interested in negative stories about geoscience.</p> <p>Q43.3 The media are more interested in sensationalism than scientific truth.</p> <p>Q43.4 Geosciences are too complex to be communicated in the media.</p> <p>Q43.5 Journalists are not scientifically prepared to work on geoscience topics.</p> <p>Q43.6 Journalists do not correctly understand the technical details of science.</p> <p>Q43.7 Most geoscientists fail to adapt their speech for journalists and for the public.</p> <p>Q36.6 In your opinion, engagement with non-specialist audiences is better done by trained professionals and journalists? Strongly disagree; moderately disagree; neither agree nor disagree; moderately agree; strongly agree</p>
Trust in information	<p>Which entities do you trust to do geosciences communication (I don't trust; I trust a little; I trust; I trust a lot)</p> <p>Q44.1 Museums</p> <p>Q44.2 Science Centres</p> <p>Q44.3 Universities</p> <p>Q44.4 Geoparks</p> <p>Q44.5 City councils</p> <p>Q44.6 Governmental institutions</p> <p>Q44.7 Elementary and secondary schools</p> <p>Q44.8 TV</p> <p>Q44.9 Newspapers</p> <p>Q44.10 Popular science magazines</p>
Personal experience and satisfaction	<p>Q36.7 In your opinion, engaging non-specialist audiences in science is personally rewarding. Strongly disagree; moderately disagree; neither agree nor disagree; moderately agree; strongly agree</p> <p>Q45. What do you think about the number of activities you do annually? Reduced; fair; good; very good; excessive</p> <p>Q46. How do you rate your communicator experience? Unsatisfactory; few satisfactory; satisfactory; very satisfactory</p>

* The results referring to the 30 indicators studied in the scope of this work are available in supplementary material D.

** For convenience of statistical analysis some results were recoded for the present study, as in the supplementary material B and C.

Supplementary Material B

Statistic model

Frequencies

Syntax	FREQUENCIES VARIABLES=Q10_Training Q12_Activities Q1_Age Q23_Geoparks Q2_Gender Q30.1_Skills Q31_training Q33_Appreciation Q36.1_implications_Society Q37.10_Controversy Q37.11_Misrepresentations Q37.1_Lack_Time Q37.2_Lack_Support Q37.3_Discomfort Q37.4_Lack_Training Q37.5Lack_interest Q37.6_Lack_Knowledge Q37.7_Negative_Opinion Q37.8_Pouco_Rigor Q37.9_Topic_Complexity Q45_Number_Activities Q46_SciCom_Experience Q5_Expertise Q7_Professional_category Q9_Work_Experience /ORDER=ANALYSIS.	
Resources	Processor Time	00:00:00,05
	Elapsed Time	00:00:00,01

Statistics

		Q10_Trainin g	Q12_Activiti es	Q1_Age	Q23_Geopar ks	Q2_Gender
N	Valid	179	179	179	178	179
	Missing	0	0	0	1	0

Statistics

		Q30.1_Skills	Q31_training	Q33_Appreci ation	Q36.1_implic ations_Societ y	Q37.10_Cont roversy
N	Valid	178	179	179	179	179
	Missing	1	0	0	0	0

Statistics

		Q37.11_Misr epresentation s	Q37.1_Lack_ Time	Q37.2_Lack_ Support	Q37.3_Disco mfort	Q37.4_Lack_ Training
N	Valid	179	179	179	179	179
	Missing	0	0	0	0	0

Statistics

		Q37.5Lack_i nterest	Q37.6_Lack_ Knowledge	Q37.7_Negat ive_Opinion	Q37.8_Pouco _Rigor	Q37.9_Topic _Complexity
N	Valid	179	179	179	179	179
	Missing	0	0	0	0	0

Statistics

		Q45_Number _Activities	Q46_SciCom _Experience	Q5_Expertise	Q7_Professio nal_category	Q9_Work_E xperience
N	Valid	179	179	156	169	179
	Missing	0	0	23	10	0

Frequency Table*Q10_Training*

Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	Yes	38	21,2	21,2	21,2
	No	141	78,8	78,8	100,0
	Total	179	100,0	100,0	

Q12_Activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no_activities	21	11,7	11,7	11,7
	one_to_three	60	33,5	33,5	45,3
	four_or_more	98	54,7	54,7	100,0
	Total	179	100,0	100,0	

Q1_Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<30	29	16,2	16,2	16,2
	30-40	50	27,9	27,9	44,1
	41-50	41	22,9	22,9	67,0
	>51	59	33,0	33,0	100,0
	Total	179	100,0	100,0	

Q23_Geoparks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	47	26,3	26,4	26,4
	No	131	73,2	73,6	100,0
	Total	178	99,4	100,0	
Missing	System	1	,6		
Total		179	100,0		

Q2_Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	M	86	48,0	48,0	48,0
	F	93	52,0	52,0	100,0

	Total	179	100,0	100,0
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Q30.1_Skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	5,6	5,6	5,6
	Just	76	42,5	42,7	48,3
	Fairly	92	51,4	51,7	100,0
	Total	178	99,4	100,0	
Missing	System	1	,6		
Total		179	100,0		

Q31_training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	95	53,1	53,1	53,1
	2	73	40,8	40,8	93,9
	3	11	6,1	6,1	100,0
	Total	179	100,0	100,0	

Q33_Appreciation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	80	44,7	44,7	44,7
	2	73	40,8	40,8	85,5
	3	26	14,5	14,5	100,0
	Total	179	100,0	100,0	

Q36.1_implications_Society

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	5,6	5,6	5,6
	2	16	8,9	8,9	14,5
	3	153	85,5	85,5	100,0
	Total	179	100,0	100,0	

Q37.10_Controversy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	114	63,7	63,7	63,7
	2	47	26,3	26,3	89,9
	3	18	10,1	10,1	100,0
	Total	179	100,0	100,0	

Q37.11_Misrepresentations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	46	25,7	25,7	25,7
	2	78	43,6	43,6	69,3
	3	55	30,7	30,7	100,0
	Total	179	100,0	100,0	

Q37.1_Lack_Time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	32	17,9	17,9	17,9
	2	98	54,7	54,7	72,6
	3	49	27,4	27,4	100,0
	Total	179	100,0	100,0	

Q37.2_Lack_Support

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	23	12,8	12,8	12,8
	2	72	40,2	40,2	53,1
	3	84	46,9	46,9	100,0
	Total	179	100,0	100,0	

Q37.3_Discomfort

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	113	63,1	63,1	63,1
	Agree	53	29,6	29,6	92,7
	3	13	7,3	7,3	100,0
	Total	179	100,0	100,0	

Q37.4_Lack_Training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	78	43,6	43,6	43,6
	2	76	42,5	42,5	86,0
	3	25	14,0	14,0	100,0
	Total	179	100,0	100,0	

Q37.5Lack_interest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	64	35,8	35,8	35,8
	2	91	50,8	50,8	86,6
	3	24	13,4	13,4	100,0
	Total	179	100,0	100,0	

Q37.6_Lack_Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	70	39,1	39,1	39,1
	2	78	43,6	43,6	82,7
	3	31	17,3	17,3	100,0
	Total	179	100,0	100,0	

Q37.7_Negative_Opinion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	102	57,0	57,0	57,0

	2	52	29,1	29,1	86,0
	3	25	14,0	14,0	100,0
	Total	179	100,0	100,0	

Q37.8_Pouco_Rigor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	152	84,9	84,9	84,9
	2	22	12,3	12,3	97,2
	3	5	2,8	2,8	100,0
	Total	179	100,0	100,0	

Q37.9_Topic_Complexity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	115	64,2	64,2	64,2
	2	53	29,6	29,6	93,9
	3	11	6,1	6,1	100,0
	Total	179	100,0	100,0	

Q45_Number_Activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	72	40,2	40,2	40,2
	2	85	47,5	47,5	87,7
	3	22	12,3	12,3	100,0
	Total	179	100,0	100,0	

Q46_SciCom_Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	43	24,0	24,0	24,0
	2	88	49,2	49,2	73,2
	3	48	26,8	26,8	100,0
	Total	179	100,0	100,0	

Q5_Expertise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Geological and Energy Resources	36	20,1	23,1	23,1
	Internal Geodynamics, Geophysics, Petrology and Geochemistry	34	19,0	21,8	44,9
	External Geodynamics and Palaeontology	25	14,0	16,0	60,9
	Geoconservation and Geotourism	13	7,3	8,3	69,2
	History and Education	28	15,6	17,9	87,2
	Environment, Environmental Geology and Engineering	20	11,2	12,8	100,0
	Geology				
	Total	156	87,2	100,0	
Missing	System	23	12,8		
Total		179	100,0		

Q7_Professional_category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PostGradStudent	20	11,2	11,8	11,8
	Technician	50	27,9	29,6	41,4
	Researcher	66	36,9	39,1	80,5
	Teacher	33	18,4	19,5	100,0
	Total	169	94,4	100,0	
Missing	System	10	5,6		
Total		179	100,0		

Q9_Work_Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5	38	21,2	21,2	21,2

5-10	17	9,5	9,5	30,7
10-20	45	25,1	25,1	55,9
>20	79	44,1	44,1	100,0
Total	179	100,0	100,0	

```

NOMREG Q12_Activities (BASE=LAST ORDER=ASCENDING) BY Q9_Work_Experience
Q33_Appreciation
      Q37.2_Lack_Support Q46_SciCom_Experience Q5_Expertise
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001)
      SINGULAR(0.00000001)
/MODEL
/STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT=INCLUDE
/PRINT=CLASSTABLE FIT PARAMETER SUMMARY LRT CPS MFI.

```

Nominal Regression

Missing Value
Handling

Definition of Missing

User-defined missing
values are treated as
missing.

Cases Used

Statistics are based on
all cases with valid data
for all variables in the
model.

Syntax

```
NOMREG
Q12_Activities
(BASE=LAST
ORDER=ASCENDING
) BY
Q9_Work_Experience
Q33_Appreciation

Q37.2_Lack_Support
Q46_SciCom_Experience Q5_Expertise
/CRITERIA CIN(95)
DELTA(0)
MXITER(100)
MXSTEP(5)
CHKSEP(20)
LCONVERGE(0)
PCONVERGE(0.000001)

SINGULAR(0.00000001)
/MODEL

/STEPWISE=PIN(.05)
POUT(0.1)
MINEFFECT(0)
RULE(SINGLE)
ENTRYMETHOD(LR)
REMOVALMETHOD(LR)

/INTERCEPT=INCLUDE

/PRINT=CLASSTABLE FIT PARAMETER
SUMMARY LRT CPS
MFI.
```

Resources	Processor Time	00:00:00,03
	Elapsed Time	00:00:00,03

Case Processing Summary

		N	Marginal Percentage
Q12_Activities	no_activities	18	11,5%
	one_to_three	55	35,3%
	four_or_more	83	53,2%
Q9_Work_Experience	<5	29	18,6%
	5-10	13	8,3%
	10-20	39	25,0%
	>20	75	48,1%
Q33_Appreciation	1	67	42,9%
	2	66	42,3%
	3	23	14,7%
Q37.2_Lack_Support	1	21	13,5%
	2	64	41,0%
	3	71	45,5%
Q46_SciCom_Experience	1	37	23,7%
	2	78	50,0%
	3	41	26,3%
Q5_Expertise	Geological and Energy Resources	36	23,1%
	Internal Geodynamics, Geophysics, Petrology and Geochemistry	34	21,8%
	External Geodynamics and Palaeontology	25	16,0%
	Geoconservation and Geotourism	13	8,3%
	Geoconservation and Geotourism	28	17,9%
	Environment, Environmental Geology and Engineering	20	12,8%
	Geology		
Valid		156	100,0%
Missing		23	
Total		179	
Subpopulation		129 ^a	

a. The dependent variable has only one value observed in 117 (90,7%) subpopulations.

Model Fitting Information

Model	Model Fitting			
	Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	276,948			
Final	166,127	110,821	28	,000

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	167,711	228	,999
Deviance	148,576	228	1,000

Pseudo R-Square

Cox and Snell	,509
Nagelkerke	,597
McFadden	,373

Likelihood Ratio Tests

Effect	Model Fitting			
	Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	166,127 ^a	,000	0	.
Q9_Work_Experience	191,617	25,490	6	,000
Q33_Appreciation	186,938	20,812	4	,000
Q37.2_Lack_Support	177,631	11,504	4	,021
Q46_SciCom_Experience	199,849	33,722	4	,000
Q5_Expertise	189,771	23,644	10	,009

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

		95% Confidence Interval for Exp(B)							
		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
Q12_Activities ^a no_activities	Intercept	,195	1,435	,018	1	,892			
	[Q9_Work_Experience=1]	1,629	1,220	1,782	1	,182	5,097	,467	55,686
	[Q9_Work_Experience=2]	4,423	1,704	6,736	1	,009	83,377	2,953	2354,045
	[Q9_Work_Experience=3]	-,122	1,107	,012	1	,912	,885	,101	7,750
	[Q9_Work_Experience=4]	0 ^b	.	.	0	.	.	.	.
	[Q33_Appreciation=1]	-5,395	1,743	9,583	1	,002	,005	,000	,138
	[Q33_Appreciation=2]	-2,006	,987	4,133	1	,042	,135	,019	,930
	[Q33_Appreciation=3]	0 ^b	.	.	0	.	.	.	.
	[Q37.2_Lack_Support=1]	1,760	1,234	2,036	1	,154	5,812	,518	65,223
	[Q37.2_Lack_Support=2]	-,323	,868	,139	1	,710	,724	,132	3,968
	[Q37.2_Lack_Support=3]	0 ^b	.	.	0	.	.	.	.
	[Q46_SciCom_Experience=1]	2,886	1,219	5,604	1	,018	17,919	1,643	195,403
	[Q46_SciCom_Experience=2]	1,037	1,033	1,009	1	,315	2,822	,373	21,367
	[Q46_SciCom_Experience=3]	0 ^b	.	.	0	.	.	.	.

	[Q5_Expertise =1]	-4,42 9	1,895	5,461	1	,019	,012	,000	,489
	[Q5_Expertise =2]	-1,58 0	1,191	1,758	1	,185	,206	,020	2,128
	[Q5_Expertise =3]	-21,7 07	9804,6 14	,000	1	,998	3,741E -10	,000	. ^c
	[Q5_Expertise =4]	-20,6 09	,000	.	1	.	1,121E -9	1,121E- 9	1,121E- 9
	[Q5_Expertise =5]	,084	1,113	,006	1	,940	1,088	,123	9,640
	[Q5_Expertise =6]	0 ^b	.	.	0	.	.	.	.
one_to_t	Intercept	-2,66 1	1,143	5,423	1	,020			
hree	[Q9_Work_Ex perience=1]	-1,07 4	,679	2,502	1	,114	,342	,090	1,293
	[Q9_Work_Ex perience=2]	3,731	1,283	8,457	1	,004	41,716	3,375	515,598
	[Q9_Work_Ex perience=3]	,069	,565	,015	1	,902	1,072	,354	3,241
	[Q9_Work_Ex perience=4]	0 ^b	.	.	0	.	.	.	.
	[Q33_Apprecia tion=1]	-,301	,811	,137	1	,711	,740	,151	3,629
	[Q33_Apprecia tion=2]	,288	,797	,131	1	,718	1,334	,280	6,368
	[Q33_Apprecia tion=3]	0 ^b	.	.	0	.	.	.	.
	[Q37.2_Lack_ Support=1]	-1,56 8	,869	3,257	1	,071	,208	,038	1,144
	[Q37.2_Lack_ Support=2]	-,417	,463	,812	1	,367	,659	,266	1,633
	[Q37.2_Lack_ Support=3]	0 ^b	.	.	0	.	.	.	.
	[Q46_SciCom_ Experience=1]	3,826	,791	23,37 1	1	,000	45,878	9,726	216,398
	[Q46_SciCom_ Experience=2]	1,817	,622	8,532	1	,003	6,151	1,818	20,815
	[Q46_SciCom_ Experience=3]	0 ^b	.	.	0	.	.	.	.
	[Q5_Expertise =1]	,275	,855	,104	1	,747	1,317	,247	7,036

[Q5_Expertise =2]	,441	,819	,290	1	,590	1,554	,312	7,735
[Q5_Expertise =3]	,750	,872	,739	1	,390	2,117	,383	11,696
[Q5_Expertise =4]	,997	1,045	,910	1	,340	2,711	,349	21,040
[Q5_Expertise =5]	1,675	,883	3,595	1	,058	5,338	,945	30,149
[Q5_Expertise =6]	0 ^b	.	.	0	.	.	.	.

a. The reference category is: four_or_more.

b. This parameter is set to zero because it is redundant.

c. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.

Classification

Observed	Predicted			Percent Correct
	no_activities	one_to_three	four_or_more	
no_activities	10	4	4	55,6%
one_to_three	2	32	21	58,2%
four_or_more	3	9	71	85,5%
Overall Percentage	9,6%	28,8%	61,5%	72,4%

Supplementary Material C
Summary of the results of the demographic and descriptive analysis

Demographics													
	< 30		30-40		40-50		> 50 years old						
Q1. Age	29	0,16201	50	0,27933	41	0,22905	59	0,32961					
	Female		Male		Other								
Q2. Gender	93	0,51955	86	0,48045									
	Bachelor's		Master's		PhD								
Q3. Academic degree	32	0,17877	75	0,41899	72	0,40223							
	Geology		Biology and Geology; Environmental Sciences; Env. Education		Geological Engineering/Mine Engineering		Biology		Geophysics; Meteorology; Oceanography; Physics		Geography; Aerospace Engineering		
Q4. Degree area	125	0,69832	28	0,15642	8	0,04469	8	0,04469	6	0,03352	4	0,02235	
	Geological and Energy Resources		Internal Geodynamics, Geophysics, Petrology and Geochemistry		External Geodynamics and Palaeontology		Geoconservation and Geotourism		History and Education		Environment, Environmental Geology and Engineering Geology		Other
Q5. Area of expertise	36	0,20112	34	0,18994	25	0,13966	13	0,07263	28	0,1676	20	0,10615	23 0,12291
	Technician		Higher education professor / Researcher				Elementary and secondary education teacher		Post graduation student		Other		
			Higher education professor		Researcher						Science communicator		Other
Q7. Professional category	50	0,27933	36	0,20112	30	0,1676	33	0,18436	20	0,11173	7	0,03911	3 0,01676

Descriptive analysis

Frequency						
	<i>None</i>		<i>1 - 3 activities</i>		<i>More than 4 activities</i>	
Q12. How many science communication activities have you carried out in the last year?	21	0,117318	60	0,335196	98	0,547486
Institution attitude						
	<i>High</i>		<i>Medium</i>		<i>Low</i>	
Q33. To what degree does your institution value communication activities?	80	0,446927	73	0,407821	26	0,145251
Perception about geoscientific area						
	<i>Disagree</i>		<i>Neither agree nor disagree</i>		<i>Agree</i>	
Q36.1 Has your work implications for society and/or policy makers?	10	0,055866	16	0,089385	153	0,854749
Q36.2 do scientists have a moral duty to engage with the non-expert public about the social and ethical implications of their work?	5	0,027933	13	0,072626	161	0,899441
Q36.3 Is your work interesting to non-specialist audiences?	15	0,083799	23	0,128492	141	0,787709
Q36.4 Is your work too specialized to make sense to non-specialist audiences?	108	0,603352	29	0,162011	42	0,234637
Obstacles to science communication						
What obstacles do you find in the science communication?	<i>Disagree</i>		<i>Moderately agree</i>		<i>Strongly agree</i>	
Q37.1 lack of time	32	0,178771	98	0,547486	49	0,273743
Q37.2 lack of financial support	23	0,128492	72	0,402235	84	0,469274
Q37.3 discomfort in communicating with lay audiences	113	0,631285	53	0,296089	13	0,072626
Q37.4 lack of preparation/training	78	0,435754	76	0,424581	25	0,139665
Q37.5 lack of public interest	64	0,357542	91	0,50838	24	0,134078
Q37.6 lack of public knowledge	70	0,391061	78	0,435754	31	0,173184
Q37.7 negative opinion by peers	102	0,569832	52	0,290503	25	0,139665

Q37.8 these activities make science less rigorous	152	0,849162	22	0,122905	5	0,027933
Q37.9 the complexity of my scientific field	115	0,642458	53	0,296089	11	0,061453
Q37.10 fear of creating misunderstandings and generating controversy	114	0,636872	47	0,26257	18	0,100559
Q37.11 misrepresentation of scientific content by journalists	46	0,256983	78	0,435754	55	0,307263

Self-perceived competence

	<i>Not prepared</i>		<i>Moderately prepared</i>		<i>Well/very well prepared</i>	
Q30.1 Do you feel with the necessary skills to communicate science?	10	0,05618	76	0,426966	92	0,516854
Q30.2 Do you feel prepared to communicate about the social and ethical implications of science?	44	0,247191	73	0,410112	61	0,342697

Personal satisfaction

	<i>Nothing/not very important</i>		<i>Equally important</i>		<i>Quite/very important</i>	
Q32. Regarding your entire professional activity, how important is it for you to find time to engage with non-specialist audiences?	15	0,083799	42	0,234637	122	0,681564
	<i>Disagree</i>		<i>Neither agree nor disagree</i>		<i>Agree</i>	
Q36.7 In your opinion, engaging non-specialist audiences in science is personally rewarding?	11	0,061453	14	0,078212	154	0,860335
	<i>Reduced</i>		<i>Fair/Good</i>		<i>Very good/Excessive</i>	
Q45. What do you think about the number of activities you do annually?	72	0,402235	85	0,47486	22	0,123
	<i>Unsatisfactory</i>		<i>Satisfactory</i>		<i>Very satisfactory</i>	
Q46. How do you rate your communicator experience?	43	0,240223	88	0,49162	48	0,268156

Contact with journalists

	<i>Often</i>		<i>Usually</i>		<i>Rarely</i>		<i>Never</i>	
Q13.1 Journalists	5	0,027933	16	0,089385	71	0,396648	87	0,486034
Q13.2 Science journalists	3	0,01676	7	0,039106	82	0,458101	87	0,486034

	Q2	Q3	Q4	Q5	Q12	Q13.1	Q13.2	Q30.1	Q30.2	Q32	Q33	Q36.1	Q36.2	Q36.3	Q36.4	Q36.7	Q37.1	Q37.2	Q37.3	Q37.4	Q37.5	Q37.6	Q37.7	Q37.8	Q37.9	Q37.10	Q37.11	Q45	Q46			
> 50	Male	PhD	Geology	Geocns & Geot	1 - 3	Never	Rarely	Well prepared	Mod prepared	Quite important	High	Strongly agree	Strongly agree	Moderately agree	Moderately disagree	Strongly agree	Str agree	Mod agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Few satis		
> 50	Male	PhD	Geology	Environ & Eng Geology	> 10	Rarely	Rarely	Well prepared	Mod prepared	Quite important	High	Moderately agree	Strongly agree	Moderately agree	Moderately disagree	Moderately agree	Disagree	Mod agree	Disagree	Disagree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Good	Very satisf		
41-50	Female	PhD	Geology	Environ & Eng Geology	None	Rarely	Rarely	Very well prep	Well prepared	Quite important	Medium	Moderately agree	Strongly agree	Moderately agree	N agree nor disagree	Moderately agree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Very good	Very satisf		
< 30	Male	Master's	Bio & Geol; Environ	Geo Energy Resources	1 - 3	Rarely	Never	Mod prepared	Well prepared	Equ important	High	Strongly agree	Moderately agree	Moderately agree	Moderately disagree	Moderately agree	Mod agree	Str agree	Mod agree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Unsatisf		
> 50	Female	PhD	Geology	Hist & Educ	None	Never	Never	Mod prepared	Very well prep	Equ important	Medium	Moderately agree	Moderately agree	Moderately agree	Strongly disagree	Moderately agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Satisfactory		
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30-40	Male	PhD	Geology	Ext Geod & Palaeont	> 10	Usually	Rarely	Very well prep	Very well prep	Very important	High	Strongly agree	Strongly agree	Strongly agree	Strongly disagree	Strongly agree	Mod agree	Str agree	Mod agree	Mod agree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Fair	Very satisf		
30-40	Male	Master's	Geology	Geo Energy Resources	> 10	Often	Rarely	Very well prep	Very well prep	Very important	High	Strongly agree	Strongly agree	Strongly agree	Moderately disagree	Strongly agree	Mod agree	Mod agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Very good	Satisfactory	
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> 50	Female	PhD	Biology	Ext Geod & Palaeont	1 - 3	Rarely	Rarely	Well prepared	Well prepared	Very important	High	Moderately agree	Strongly agree	Strongly agree	Strongly disagree	Strongly agree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Fair	Satisfactory	
< 30	Male	Bachelor's	Bio & Geol; Environ	Environ & Eng Geology	> 10	Rarely	Never	Well prepared	Not prepared	Very important	High	Moderately agree	N agree nor disagree	Moderately agree	N agree nor disagree	Moderately agree	Mod agree	Str agree	Mod agree	Mod agree	Str agree	Str agree	Str agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Fair	Satisfactory	
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< 30	Female	Master's	Bio & Geol; Environ	Environ & Eng Geology	None	Never	Never	Mod prepared	Mod prepared	Equ important	Medium	Strongly agree	Moderately agree	Moderately agree	Strongly disagree	Strongly agree	Str agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Few satis	
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> 50	Female	Master's	Geology	Geocns & Geot	1 - 3	Never	Never	Well prepared	Well prepared	Quite important	Medium	Strongly agree	Strongly agree	Strongly agree	Moderately agree	Moderately agree	Str agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Fair	Very satisf	
> 50	Male	Master's	Geology	Ext Geod & Palaeont	> 10	Never	Never	Well prepared	Well prepared	Equ important	Medium	Moderately agree	Moderately agree	Moderately agree	Strongly disagree	Strongly agree	Mod agree	Disagree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Fair	Very satisf	
> 50	Male	Master's	Geology	Geocns & Geot	> 10	Never	Never	Well prepared	Mod prepared	Equ important	High	Strongly agree	Strongly agree	Strongly agree	Strongly disagree	Strongly agree	Disagree	Str agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Very good	Very satisf	
30-40	Female	Bachelor's	Bio & Geol; Environ	Hist & Educ	None	Never	Never	Not prepared	Not prepared	Not very important	Low	Strongly disagree	Strongly agree	Moderately disagree	Strongly disagree	Moderately disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Few satis	
30-40	Female	PhD	Geology	Int Geod, Geoph, Petrol Geoch	1 - 3	Never	Rarely	Mod prepared	Mod prepared	Equ important	Medium	Moderately agree	Moderately agree	N agree nor disagree	N agree nor disagree	Moderately agree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Mod agree	Few satis	
> 50	Male	PhD	Geology	Int Geod, Geoph, Petrol Geoch	1 - 3	Never	Rarely	Mod prepared	Mod prepared	Equ important	Medium	Moderately agree	Moderately agree	N agree nor disagree	N agree nor disagree	N agree nor disagree	Mod agree	Mod agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Few satis
< 30	Male	Bachelor's	Bio & Geol; Environ	Geo Energy Resources	> 10	Rarely	Never	Well prepared	Mod prepared	Quite important	Low	N agree nor disagree	Strongly agree	Moderately agree	Strongly disagree	Moderately agree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Satisfactory
30-40	Female	Master's	Geology	Geo Energy Resources	1 - 3	Never	Never	Well prepared	Mod prepared	Equ important	High	Strongly agree	Strongly agree	Moderately agree	Moderately agree	Moderately agree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Good	Satisfactory
> 50	Female	Master's	Geology	Geo Energy Resources	> 10	Often	Often	Well prepared	Well prepared	Very important	Medium	Moderately agree	Strongly agree	Strongly agree	N agree nor disagree	N agree nor disagree	Mod agree	Mod agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Very good	Very satisf
< 30	Female	Master's	Geology	Environ & Eng Geology	> 10	Often	Often	Well prepared	Well prepared	Equ important	Medium	Moderately agree	Moderately agree	N agree nor disagree	N agree nor disagree	N agree nor disagree	Mod agree	Str agree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Satisfactory
41-50	Male	Bachelor's	Geology	Int Geod, Geoph, Petrol Geoch	4 - 9	Never	Never	Not prepared	Not prepared	Very important	High	Strongly agree	Moderately agree	N agree nor disagree	Moderately disagree	Moderately agree	Disagree	Disagree	Disagree	Disagree	Mod agree	Mod agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Reduced	Unsatisf
> 50	Male	PhD	Geology	Geo Energy Resources	> 10	Often	Often	Very well prep	Very well prep	Very important	Low	Strong																				

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