

**SISSA**

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# Outreach and public engagement of Italian Departments of Earth Sciences

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*To my mum,  
who always has been  
and always will be with me.*



## **Abstract**

Leading academic institutions, governments, and funders of research across the world have spent the last few decades fretting publicly about the need for scientists and research organisations to engage more widely with the public and be open about their research. Within a frame of growing universities competition and marketisation, global literature asserts that the role of public communication has changed from a virtue to a duty for scientists in many countries and disciplines. However, knowledge about what research institutions are doing and what factors drive their “going public” is still very limited. An attempt to examine the public engagement efforts at the departmental level has been made with a recent cross-national study of thousands of research institutes in different countries. Notwithstanding this, the public communication of university departments within the Italian academic context is still poorly understood.

The present thesis aims to investigate cultures of science communication at the level of research institutes and to define key concepts of public communication of Italian Departments of Earth Sciences. By focusing on a very narrow and complete sample of research institutes in Italy ( $n = 8$ , 100% response rate), I investigate how public engagement varies in intensity, type of activities and target audiences across departments. Three benchmark findings emerge: i) public communication remains far from being fully instituted and taken-for-granted across research institutes; ii) variation in communication is associated with institutional commitment to public communication, although culture and strategy, rather than available funding, seems to play a key role; iii) capacity building and commitment of resources are generally increasing. Overall, data point to a growing national phenomenon and a potential change in the culture of Italian academic institutions to open up their research to unspecific publics at the departmental level, by boosting their commitment in terms of both funding and communication staff. Future research should monitor this evolution by investigating the implications of this professionalisation for science communication and the narratives that emerge from research institutes.

Due to the limited size of the sample investigated, a robust statistical analysis was not possible. Thus, to check whether findings presented here also occur in other types of research units, and to observe the future evolution of public communication at the departmental level of Italian universities, further investigation is needed.

## Acknowledgments

I would have never thought, after completing my PhD thesis, to find myself one day submitting another thesis, this time in the field of science communication. Best things happen unexpectedly, though! So, after a tortuous journey that brought me from Padova to Edmonton to study super-deep diamonds, I finally ended up in SISSA studying Earth Scientists, trapped in some sort of personal metanalysis.

I would like to devote these few lines to acknowledge all the people that made this challenging and unconventional life change possible.

First of all, I wish to thank my supervisor, Nico Pitrelli, who gave me the opportunity to do this thesis, and taught me not to start sentences with a “No”.

Secondly, I thank the eight people who generously accepted to answer my questionnaire, and Giuseppe Pellegrini, who agreed to be interviewed in the frame of this work, thus giving a priceless contribution to this study.

Thank you also to all the SISSA crew: Giacomo, Marina, Alessandro, Chiara, Donato, Mila and Claudia, for supporting us, and for always trying to meet our needs.

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I would like to sincerely thank all my longtime friends: they have always encouraged me to aim high and to pursue my dreams, even when that meant to undertake unexplored and not obvious ways.

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## Preface

The present manuscript is divided into six chapters and two appendixes.

Chapter One explores the evolution of the Third Mission of universities over the past sixty years, thus providing an historical and cultural background. The shift from the *Public Understanding of Science* to modern *Public Engagement*, as well as the Third Mission policies adopted both at the European and at the national level will also be discussed. Within a context of growing competition and marketization of universities, I will describe the rise of performance-based funding mechanisms, and the role of the Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) in the implementation of Third Mission parameters to evaluate the Italian academic system.

In Chapter Two, I provide a detailed description of the research methods adopted for this study, namely questionnaire and individual interview. Due to the limited size of the sample, it was not possible to conduct a robust statistical analysis and to test for correlations among variables; thus, an interview was required to provide a meaningful comment on the results obtained and infer some conclusions.

Chapter Three describes the sample investigated in the present study, which consists of eight Departments of Earth Sciences, their geographical localization, and their size, in terms of number of researchers, post-doctoral fellows and PhD students working there.

In Chapter Four I present the results of the eight questionnaires collected, I discuss them with the interviewee, and I compare them to findings from a previous reference study.

Chapter Five draws some conclusive analyses to the present thesis work and provide an overview of the possible future evolution of the public communication at the departmental level within the Italian university context.

Chapter Six describes the limitation of the conducted research and discusses the necessity of further investigation to explore more in-depth certain aspects.

Finally, Appendixes A and B report the full script of the interview to Professor Giuseppe Pellegrini, president of *Observe Science and Society* and co-author of the reference work, and the online questionnaire submitted to the surveyed departments, respectively.

Trieste, 3<sup>rd</sup> February 2022

Signature



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# 1 Introduction

## 1.1 The evolving role of universities

As far back as ancient Greece, when Aristotle found his *Lyceum* in Athens, the main goal of the higher education system was educating and training the elite members of the community, such as lawyers, physicians, teachers and theologians. The conservation and transmission of knowledge, through teaching, was also regarded as the primary task of early universities in the Middle Ages<sup>12</sup>, when the world oldest universities were founded. The term “university” itself, which comes from the Latin expression *universitas magistrorum et scholarium*, and that was coined in this context, precisely indicates a “community of masters and scholars”.

It was not until the 19<sup>th</sup> century<sup>3</sup>, that the Prussian philosopher Wilhelm Von Humboldt encouraged the University of Berlin to combine teaching with scientific research<sup>4</sup> to achieve both comprehensive general learning and cultural knowledge. His ideal relied on a growing, educated middle class and thereby promoted the claim on general education. This concept of holistic academic education, simply known as the “Humboldt’s model”, has gradually become the core idea of all modern universities, and, despite its flaws, is still followed today<sup>5</sup>.

The traditional role or mission of the university, as it has evolved and established itself during the past Centuries, has thus traditionally been twofold: (1) formation and higher teaching on one hand and (2) research on the other<sup>6</sup>. The academic system was indeed straightforward: research provided new knowledge to formation and higher education; higher education, in turn, provided the necessary turnover to renovate academia with new generation of scientists. This loop has proved to be perfectly adequate until the second scientific revolution of modern times, when the role of scientific research in the growth not only cultural but also economic of a modern country has increased<sup>7</sup>. At the same time scientists gradually left their ivory tower, and university became a “mass university”, where

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<sup>1</sup> J. Nelles, T. Vorley, *From policy to practice: engaging and embedding the third mission in contemporary universities*, in «International Journal of Sociology and Social Policy», n. 30, 7/8 2010, pp. 341–353.

<sup>2</sup> D. Cooper, *The university in development: case studies of use-oriented research*, HSRC Press 2011.

<sup>3</sup> W. Rüegg, *A History of the University in Europe: Volume 3, Universities in the Nineteenth and Early Twentieth Centuries (1800–1945)*, Cambridge University Press 2004.

<sup>4</sup> C. Urdari et al., *Assessing the legitimacy of HEIs’ contributions to society: The perspective of international rankings*, in «Sustainability Accounting, Management and Policy Journal», n. 8, 2 2017, pp. 191–215.

<sup>5</sup> U. Schimank, M. Winnes, *Beyond Humboldt? The relationship between teaching and research in European university systems*, in «Science and Public Policy», n. 27, 6 2000, pp. 397–408.

<sup>6</sup> H. de Ridder-Symoens, W. Rüegg, *A History of the University in Europe: Volume 1, Universities in the Middle Ages*, Cambridge University Press 2003.

<sup>7</sup> E. Predazzi, *The third mission of the university*, in «Rendiconti Lincei», n. 23, 1 2012, pp. 17–22.

people studying and doing research are no longer a social élite, but a small cog in the large wheel of society. In such a context of academic revolution, the rise of the knowledge economy, along with globalisation, and both the financial and the environmental crises were unprecedented challenges that contributed considerably to redesigning and extending the missions of universities<sup>8910</sup>, by adding the so-called “Third Mission” alongside the first two (Figure 1).

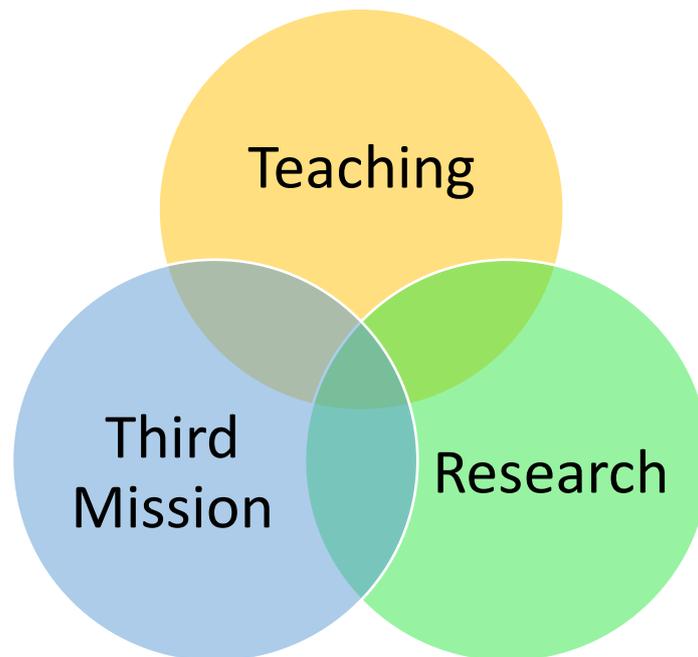


Figure 1: The three missions of university – teaching, research and the so-called Third Mission – are interconnected and contribute equally to the role that Academia plays in the society.

## 1.2 The Third Mission of university

Being generally portrayed as a vague “contribution to society”<sup>1112</sup>, the definition of Third Mission (hereafter TM) is everything but unambiguous: sometimes it simply indicates the technological transfer that conveys results stemming from scientific and technological research to the marketplace and to the wider public<sup>13</sup>; more often it refers to a wide array of

<sup>8</sup> G. Trencher *et al.*, *Beyond the third mission: Exploring the emerging university function of co-creation for sustainability*, in «Science and Public Policy», n. 41, 2 2014, pp. 151–179.

<sup>9</sup> H. E. Hadidi, D. A. Kirby, *Universities and Innovation in a Factor-Driven Economy: The Performance of Universities in Egypt*, in «Industry and Higher Education», n. 30, 2 2016, pp. 140–148.

<sup>10</sup> A. Rubens *et al.*, *Universities' third mission and the entrepreneurial university and the challenges they bring to higher education institutions*, in «Journal of Enterprising Communities: People and Places in the Global Economy», n. 11, 03 2017, pp. 354–372.

<sup>11</sup> M. Abreu *et al.*, *Entrepreneurial practices in research-intensive and teaching-led universities*, in «Small Business Economics», n. 47, 3 2016, pp. 695–717.

<sup>12</sup> C. Urdari *et al.*, *Assessing the legitimacy of HEIs' contributions to society: The perspective of international rankings*, cit.

<sup>13</sup> M. Dinnetz, *Technology Transfer – From Research to Impact*, European Commission, Brussels 2018, JRC113562 p.

activities that go under the umbrella term “science and society”. These activities are usually classified in relation to research (technology transfer and innovation), to teaching (lifelong learning/continuing education) and to university engagement in social and cultural life (social engagement)<sup>14</sup> (Figure 2). In other words, in addition to its traditional roles, the university must provide a bridge between higher knowledge and the seemingly abstract entity which commissions research: society<sup>15</sup>.

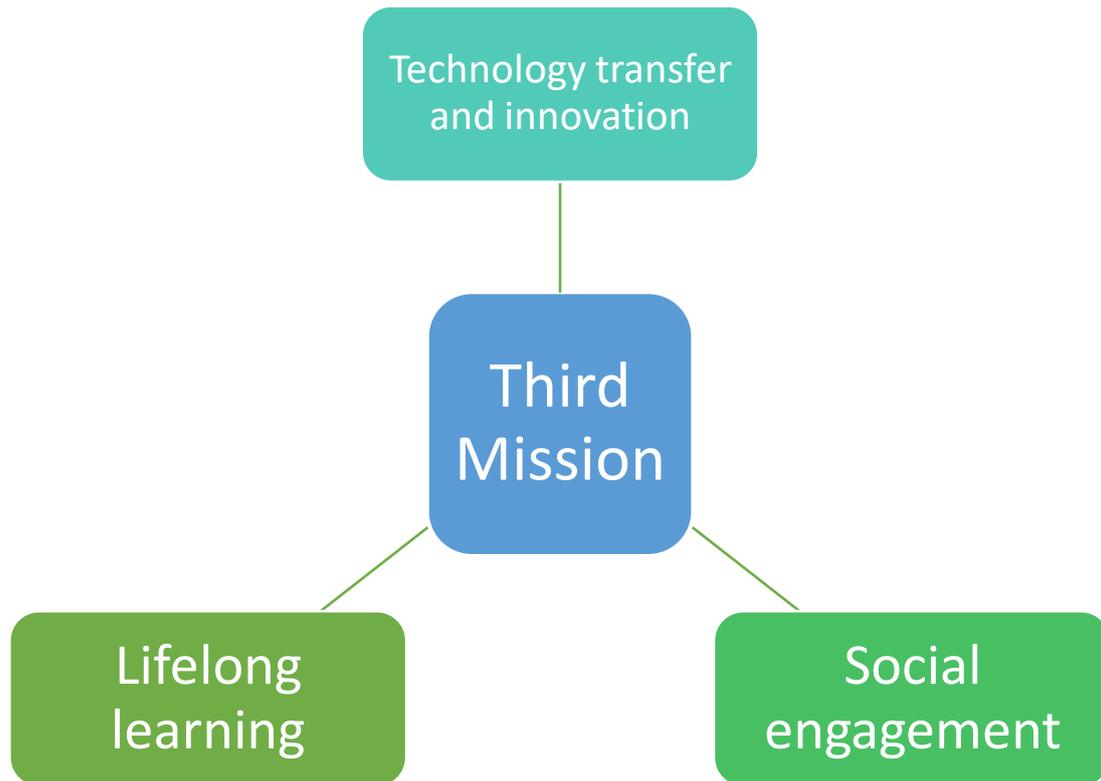


Figure 2: The three souls of Third Mission: technology transfer and innovation, lifelong learning, and social engagement.

From this perspective, TM should not be seen as a mere regulatory regime, that simply makes mandatory for universities to engage with citizens, politicians, and entrepreneurs. Instead, TM has a more elevated mission: enact the boundary through which universities endeavour to create a more favourable environment<sup>16</sup>.

Despite the fact that has been widely recognized, among both policy-makers, managers and scholars, that the university should not just equip young people with the necessary knowledge and know-how to teach and make research, but instead make them

<sup>14</sup> J.-G. Mora *et al.*, *Higher education in Albania: developing third mission activities*, in «Tertiary Education and Management», n. 21, 1 2015, pp. 29–40.

<sup>15</sup> E. Predazzi, *The third mission of the university*, cit.

<sup>16</sup> J. Vakkuri, *Institutional Change of Universities as a Problem of Evolving Boundaries*, in «Higher Education Policy», n. 17, 3 2004, pp. 287–309.

aware of the necessary ties between science and society, the TM has only recently been implemented, starting in the late 1980s<sup>17181920</sup>, and since then has triggered considerable debate. Indeed, the TM has frequently clashed with traditional academic missions, values, and culture, and has even, at times, generated individual crises of identity amongst scholars<sup>21</sup>. Hence, the TM is the most crucial mission, but at the same time is the one which most needs to be renewed within universities<sup>22</sup>.

### *1.3 Towards the Third Mission: PUS, PEST and RESP*

Despite the TM being a recent introduction, the ethical and social responsibility that universities have towards citizens already arose in the 1960s. Since then, it has gradually become clear that the population has the right to know what scientific research is aimed at, how it could affect society or, more simply, what is money from public funding spent for.

#### *1.3.1 Public Understanding of Science*

The first official steps in concretizing this new approach were taken in the 1980s, when scientists from the UK and the US realized that people had stopped listening to science and that this was potentially very dangerous. They thus started a movement called the *Public Understanding of Science* (hereafter PUS) based on a report by the Royal Society<sup>23</sup>, commonly known as the “Bodmer report” after the chair of the working group, Sir Walter Bodmer. This report has been of fundamental importance in the subsequent definition of the TM and, in general, of what it means to communicate science.

The report, entitled “The Public Understanding of Science”, stressed that a greater understanding of science and its methods is a crucial element in increasing a country’s prosperity. It is also very important in the decision-making process, both public and private, and in improving the lives of individuals and people’s intelligence, aesthetic, and morality. According to the authors, since our society is highly technological and depends on a strongly science-based industry, not knowing the principles according to which science moves is

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<sup>17</sup> H. Etzkowitz, *The norms of entrepreneurial science: cognitive effects of the new university–industry linkages*, in «Research Policy», n. 27, 8 1998, pp. 823–833.

<sup>18</sup> H. Etzkowitz, *The second academic revolution and the rise of entrepreneurial science*, in «IEEE Technology and Society Magazine», n. 20, 2 2001, pp. 18–29.

<sup>19</sup> H. Etzkowitz, *Innovation in Innovation: The Triple Helix of University-Industry-Government Relations*, in «Social Science Information», n. 42, 3 2003, pp. 293–337.

<sup>20</sup> J. Dzisah, H. Etzkowitz, *The Age of Knowledge: The Dynamics of Universities, Knowledge & Society*, BRILL 2011.

<sup>21</sup> E. M. De la Torre *et al.*, *The policy approach for the Third Mission of Universities: the Spanish Case (1983 – 2018)*, in «Regional and Sectoral Economic Studies», n. 18, 2018, pp. 13–33.

<sup>22</sup> P. Laredo, *Revisiting the Third Mission of Universities: Toward a Renewed Categorization of University Activities?*, in «Higher Education Policy», n. 20, 4 2007, pp. 441–456.

<sup>23</sup> The Royal Society, *The Public Understanding of Science*, London 1985, 41 p.

unthinkable and can only lead to a weakening of industry and of society as a whole. Politicians, managers, and citizens must therefore have a basic scientific culture and science must enter the public debate.

A further section was dedicated to the communication and management of risk and uncertainty, essential elements for policy-makers. To achieve this educational goal, the authors mainly called into question schools, where science and the scientific method should be taught, and media, which should increase the coverage of scientific news and relate constructively and synergistically with scientists.

In many ways PUS was a text deeply based on a top-down vision of science communication: the “learned” scientific community oversees educating the society, which must therefore be literate, with precise rules that indicate what scientific literacy means and how schools and universities should educate citizens. Indeed, the “deficit model” underlying the PUS approach was subsequently criticized for its simplistic and paternalistic outlook of the relationship between science and the public.

Despite its limitations, however, PUS was a big step forward in the awareness that the academic world and the scientific community must not remain confined to their ivory tower, but instead should begin to dialogue with the community they are part of. It also stressed the importance that science plays within society and emphasized that its presence in the public debate is essential for living in the modern world.

### *1.3.2 Public Engagement with Science and Technology*

Twenty years after the publication of PUS, another important change occurred: scientists from the UK published a brief article on the journal *Science*<sup>24</sup> claiming the urgency to switch from *Public Understanding of Science* to a more inclusive-sounding replacement: *Public Engagement with Science and Technology* (hereafter PEST). The new acronym invites to reconsider the relationship between science and society. The public of science should be engaged, not educated, and an open and equal discussion between scientists and non-experts should make the latter real actors in the decision-making process that addresses scientific issues with social repercussions<sup>25</sup>.

Behind the terminological issue there was obviously a change in perspective, too. This was first made clear in 2000, when the *House of Lords Select Committee on Science and*

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<sup>24</sup> From PUS to PEST, in «Science», n. 298, 2002, p. 49.

<sup>25</sup> N. Pitrelli, *The crisis of the «Public Understanding of Science» in Great Britain*, in «Journal of Science Communication», n. 2, 1 2003, p. F01.

*Technology* published the report “Science and Society”<sup>26</sup>. According to a number of researchers, it was this report that has led the British PUS to an unavoidable crossroads<sup>27</sup>, thereby marking the end of an historical cycle. Indeed, this report represented the shift between a unidirectional, top-down, relationship (PUS) to a bidirectional, engaging, dialogue (PEST) between science and society<sup>28</sup> (Figure 3). Accordingly, also the recipient of the communication was considered in a different way: it went from the traditional idea of lay people to that of publics, a heterogeneous and plural set of people with different skills and interests<sup>29</sup>. The report also included a list of activities to engage the public in the co-production of knowledge, such as local and national consultation exercises, focus groups and consensus conferences, in which a well-defined but non-expert group of citizens gauge new techniques and scientific issues.

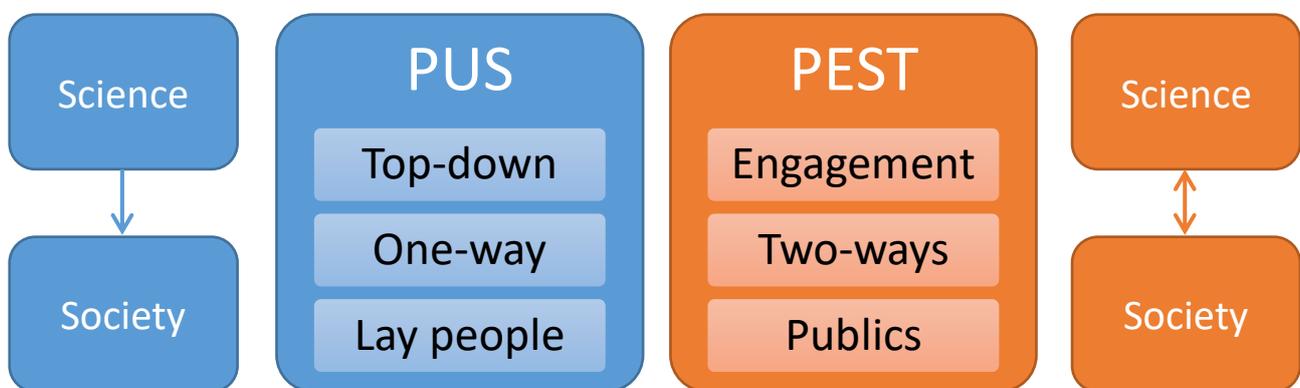


Figure 3: The change of approach from unidirectional PUS to dialogical PEST marked the transition of scientists from their ivory tower to public engagement.

### 1.3.3 Researcher Engagement with Society and Public

More recently, the dialogic scheme of PEST has been questioned again for two main reasons. First, because scientists and citizens did not establish a genuinely two-way relationship, where the public plays an active part in it. Secondly, the focus has been gradually shifted from citizens to researchers, and the role of the latter has been started to be problematized, moving from *Public Engagement with Science and Technology* to *Researcher Engagement with Society and Public* (hereafter RESP)<sup>30</sup>. Therefore, we went

<sup>26</sup> House of Lords Select Committee on Science and Technology, *Science and Society* (n. 3), London: Her Majesty's Stationary Office 2000, 92 p.

<sup>27</sup> S. Miller, *Public understanding of science at the crossroads*, in «Public Understanding of Science», n. 10, 1 2001, pp. 115–120.

<sup>28</sup> F. Sabba, *Terza Missione, Comunicazione, e Biblioteche accademiche*, in «Bibliothecae.it», n. 8, 2 2019, pp. 219–254.

<sup>29</sup> M. Entradas, *Science and the public: The public understanding of science and its measurements*, in «Portuguese Journal of Social Science», n. 14, 1 2015, pp. 71–85.

<sup>30</sup> S. Scamuzzi, Tipaldo, Giuseppe, *Apriti scienza. Il presente e il futuro della comunicazione della scienza in Italia tra vincoli e nuove sfide*, Il Mulino, Bologna 2015.

from the simple deficit-dialogue dichotomy to a three-way, circular, interaction, called engagement<sup>31</sup>. It has also become evident that the plurality of publics will not fully change the perspective on science until citizens will not think about their role within the scientific process and until a frame within which to insert questions and issues relevant to the involvement of citizens will be proposed<sup>32</sup>.

It is in this theoretical frame that the concepts of *Public Engagement* (hereafter PE) and *Third Mission* (TM) laid their foundations. PE and TM are basically two sides of the same coin. The first is an open definition which includes all communicative practices and inclusive models that involve research and society<sup>33</sup>: this means not only outreach activities to engage the public, but also the recognition of the mutual benefit that such activities have for both the university and the citizen<sup>34,35</sup>. With the second, PE is institutionalized and recognized as a responsibility that every university has towards society.

### 1.4 The Third Mission in Europe

Although some European countries had already included the TM in their higher education systems, it was only after the publication of the report “Science and Society” that the European Council, held in Lisbon on March 22<sup>nd</sup>-23<sup>rd</sup>, 2000, putted utilitarian knowledge production and university knowledge transfer high on its political agenda for the first time. The meeting conclusions<sup>36</sup> read: «The Union has today set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion». The ambitious goals of the Lisbon Agenda were:

1. preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market;
2. modernising the EU social model, investing in people and combating social exclusion;
3. sustaining the healthy economic outlook and favourable growth prospects by applying

<sup>31</sup> M. Bucchi, B. Trench, *Science communication research: themes and challenges*, *Routledge Handbook of Public Communication of Science and Technology*, Routledge 2014<sup>2a</sup> ed.

<sup>32</sup> R. Bonney *et al.*, *Can citizen science enhance public understanding of science?*, in «Public Understanding of Science», n. 25, 1 2016, pp. 2–16.

<sup>33</sup> G. Pellegrini, A. Rubin, *Comunicare la ricerca. Uno studio sul ruolo dei ricercatori nello spazio pubblico della comunicazione*, in «Problemi dell'informazione», 3/2017 2017.

<sup>34</sup> M. Anzivino *et al.*, *Il Public Engagement degli accademici italiani: un'opportunità; di rapporto tra università; e territorio*, in «Stato e mercato», 3/2018 2018.

<sup>35</sup> M. Anzivino *et al.*, *The two dimensions of Italian academics' public engagement*, in «Higher Education», n. 82, 1 2021, pp. 107–125.

<sup>36</sup> *Lisbon European Council 23-24.03.2000: Conclusions of the Presidency*, s.d.  
[https://www.europarl.europa.eu/summits/lis1\\_en.htm](https://www.europarl.europa.eu/summits/lis1_en.htm) (accessed 11/01/22).

an appropriate macro-economic policy mix.

This strategy has been implemented in the Frameworks Programmes promoted by the European Commission for the funding of research and technological development. Already in the fifth Framework Program (1998-2002), it was possible to trace a specific funding line called *Raising Public Awareness of Science*. With the sixth Framework Program (2002-2007), the European Commission recognizes a paradigm shift from *Science and Society* to *Science in Society*. It is within the sixth Framework Program that in 2005 the “European Researchers’ Night” (hereafter ERN) project was born, with the aim of establishing a mutual interest between researchers and citizens, through a series of annual outreach activities carried out by researchers from European universities. ERN takes place in a European context that, starting from the seventh Framework Program (2007-2013) up to the eighth Framework Program (2014-2020), called Horizon 2020, is strongly focused on the relationship between science and society. The paradigm is redefined once again as *Science with and for Society*, placing within it the paradigm of *Responsible Research and Innovation* (RRI). RRI stands as an interaction model that manages to involve all social actors, from researchers and scientists to citizens up to institutions, in an inclusive and responsible process based on a communicative and participatory relationship<sup>37</sup> (Figure 4).

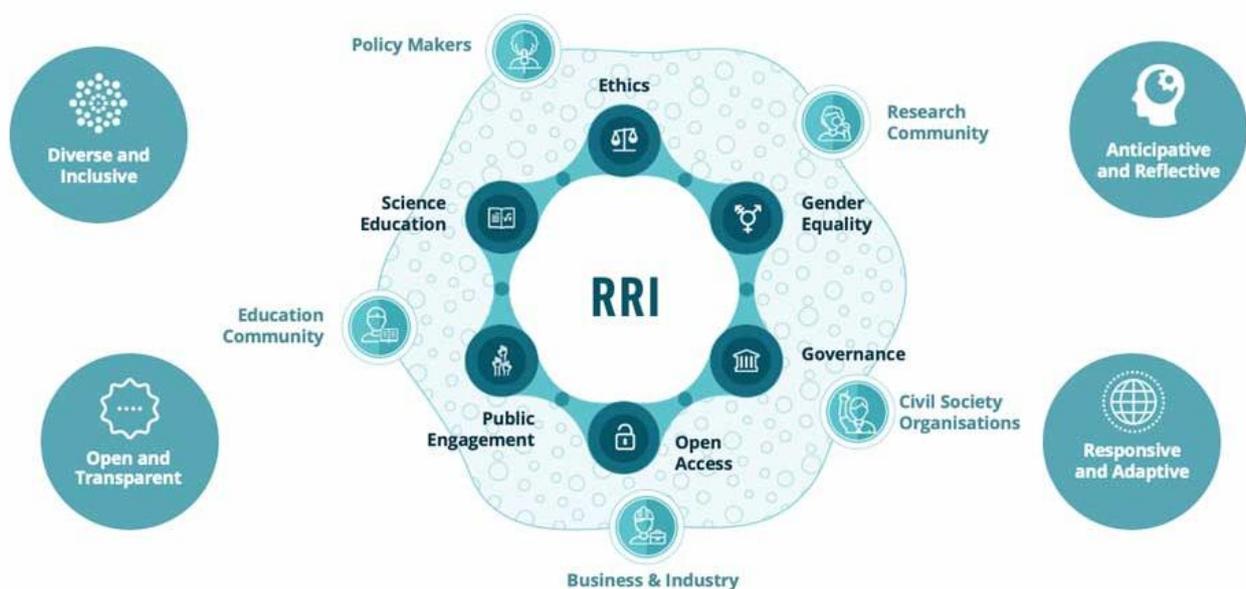


Figure 4: RRI conducts research and innovation by considering societal needs and challenges throughout the whole research and innovation process. Source: @RRITools Twitter account (accessed 13/01/2022).

<sup>37</sup> A. De Bortoli, M. Flores, *Digital Public Engagement: il dialogo possibile tra ricerca e società attraverso i nuovi media. Alcuni casi di successo*, in «Problemi dell'informazione», 3/2017 2017.

### 1.5 *The Third Mission in Italy*

Thanks to the progress made at the European level, in the last eight years TM has been the focus for Italian universities, too. ERN is now an essential annual event for most departments, and more researchers decide to engage in outreach activities. Being the TM not fully institutionalized, however, makes public engagement still very dependable on the resources, both economical and human, that single departments have<sup>38</sup>. Moreover, so far the TM has been carried out at different levels: at a university level, when the researcher represents his/her institution, at a disciplinary level, when the researcher is linked to society through his/her field of study, and at a personal level, when the researcher feels an inner motivation to engage with people different from his/her peers. All these aspects yield to a non-homogeneous panorama of efforts and PE activities, that makes it very difficult to monitor, measure and compare to gather a complete evaluation of Italian TM<sup>39</sup>.

Nevertheless, a first step towards the regulation of TM within the Italian academic system has been the first assessment performed by the Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) within the Evaluation of Research Quality “VQR 2004-2010”<sup>40</sup>. At that time, however, TM indicators were still too immature and undefined to be properly quantified, and ANVUR discouraged their use.

The official recognition of the TM alongside research and teaching came indeed later, mainly through two decrees: the Legislative Decree 19/2012, which defined the implementation principles of the AVA system (Self-assessment, Periodic Assessment, Accreditation), where all ANVUR activities are included<sup>41</sup>. The AVA system was designed to improve the quality of research and teaching and is based on an internal procedure of planning, management, self-assessment, external assessment, and amelioration. Universities started to implement the AVA system in 2013, after the Ministerial Decree 47/2013, which acknowledged ANVUR’s requests.

In 2014 the first real campaign to survey research activities began through the SUA-RD (Single Annual Form for Departmental Research), where TM is explicitly inserted in a dedicated section called SUA-TM. Here, beyond the previously identified entrepreneurial and economic indicators, new social parameters, such as Public Engagement, lifelong

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<sup>38</sup> F. Sabba, *Terza Missione, Comunicazione, e Biblioteche accademiche*, cit.

<sup>39</sup> M. Cassella, *La Terza missione dell’università: cos’è, come si valuta (con un’appendice sulle biblioteche)*, in «Biblioteche oggi Trends», n. 3, 2 2017, pp. 59–68.

<sup>40</sup> VQR 2004-2010 – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, s.d. <https://www.anvur.it/attivita/vqr/vqr-2004-2010/> (accessed 20/01/22).

<sup>41</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, AVA – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, s.d. <https://www.anvur.it/attivita/ava/> (accessed 21/01/22).

learning, and museums, were identified.

Thanks to the implementation of SUA-TM, the second Evaluation of Research Quality “VQR 2011-2014”<sup>42</sup>, approved with the Ministerial Decree 458/2015, was based on more solid and standardized parameters, that made it possible to compare universities in a proper way. This evaluation was made through an informed peer review process by a specific committee, called Commission of Experts for the Evaluation of the Third Mission (CETM). CETM was divided into two groups: CETM A evaluated the valorisation and exploitation of scientific results, whereas CETM B evaluated the production of public goods in a cultural, social and educational context. The results of “VQR 2011-2014” were published in 2017 in the “Third Mission Report”<sup>43</sup> and synthesised within the “VQR 2011-2014 Final Report”<sup>44</sup>.

With “VQR 2011-2014” the periodic evaluation of the TM within the Italian academic system officially began. The goal of ANVUR was to make the TM an integral part of the university strategy and to evaluate its quality with precise deadlines, like research and teaching, to increase the awareness of researchers of their relationship with society<sup>45</sup>.

In 2018 new guidelines for the SUA-RD 2015-2017 were published<sup>46</sup>. In particular, the part about TM seen as production of public goods was extended, with the consequence that the social, cultural, and economic aspects of TM were reinforced.

In January 2020 the third Evaluation of Research Quality “VQR 2015-2019”<sup>47</sup>, approved with the Ministerial Decrees 1110/2019 and 444/2020, began. The interdisciplinary Group of Experts Evaluators (GEV) responsible for the evaluation of the TM is composed by 30 experts, chosen not only among high-qualified university professors, but also among personalities from the productive and financial world, from cultural institutions and territories. The GEV will evaluate the case studies carried out by the departments in the following fields: enhancement of intellectual or industrial property, academic entrepreneurship, intermediation and technology transfer structures, artistic and cultural heritage, health protection, lifelong learning, public engagement, public goods and policies

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<sup>42</sup> VQR 2011-2014 – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, s.d. <https://www.anvur.it/attivita/vqr/vqr-2011-2014/> (accessed 22/01/22).

<sup>43</sup> CETM - Commissione di Esperti della valutazione della Terza Missione, *Rapporto finale sulla Terza Missione*, ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, Rome s.d.

<sup>44</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, *Rapporto Finale VQR 2011-2014*, Rome 2017.

<sup>45</sup> A. Bonaccorsi, *Valutazione, ITALIADECIDE, Rapporto 2017. Università, Ricerca, Crescita*, Il Mulino 2017, pp. 114–115.

<sup>46</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, *Linee guida per la compilazione della Scheda Unica Annuale Terza Missione e Impatto Sociale SUA-TM/IS per le Università*, Rome 2018.

<sup>47</sup> VQR 2015-2019 – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, s.d. <https://www.anvur.it/attivita/vqr/vqr-2015-2019/> (accessed 22/01/22).

for inclusion, open science and activities related to the Sustainable Development Goals (SDG). The GEV will assign to each case study one of the five levels of judgment, as explained in the “Methods of assessment of VQR 2015-2019 case studies” published in February 2021<sup>48</sup>. In the document the definition of impact is not linked to scientific results, but rather the aim is to give individual Institutions the opportunity to make the most of what is believed to have had the greatest impact in the group of TM activities carried out.

### *1.6 Public Engagement*

In the aforementioned documents, *Public Engagement* (PE) is defined as a set of non-profit cultural, social and educational activities, carried out by universities with different levels of involvement: from free individual initiative to research projects, up to institutional actions. Due to this fragmentation, what ANVUR’s evaluation considers is not the detail of PE activities, but rather i) the capability shown by departments to fully integrate these activities within their institutional mission, ii) the diversification and continuity of activities throughout the years, iii) the impact in terms of stakeholders involved, and iv) the presence of a self-evaluation process. The evaluation takes also into account other factors such as socio-economical context, size, and specialization of the department. Being TM not mandatory, Institutions can be evaluated only about what they declare, but the implementation of TM into the VQR has pushed and will continue pushing departments to carry out PE activities and monitor their success<sup>49</sup>.

As previously stated, PE activities must have a cultural, social and educational value, but are also performed to attract funds for research and teaching. In this regard, other topics were gradually added to the list proposed by SUA-RD in 2014: publications for the general public (e.g., articles in newspapers, university magazine); participation in radio and television broadcasts; participation in public events (e.g., science cafés); organization of public events (e.g., ERN, open days); training courses for professors and technicians; temporary or permanent exhibitions; creation of websites, blogs, and social media accounts; draft of programs of public interest (policy-making); collaboration with local entities for urban development and enhancement; orientation days and laboratories for high-school students; dissemination activities aimed at children and young people; school textbooks authored by the teaching staff.

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<sup>48</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, *Modalità di conferimento dei casi studio VQR 2015-2019*, Rome 2021.

<sup>49</sup> E. Zavarrone, *SITM: sistema IULM per la Terza missione, Università e Terza Missione: il cerchio da chiudere*, Carocci Editore 2018, p. 144.

### 1.7 Competition and marketisation of universities

Since the 1980s, the management of public sector institutions have considerably changed in many countries, including Italy. The New Public Management (hereafter NPM) approach, emerged in the late 1970s as part of a neo-liberal economic approach to policy-making known as the “Washington Consensus”<sup>50</sup>, represented a paradigmatic shift away from the notion of public sector management as «a process through which policies were formulated, resources allocated, and programs implemented» towards a vision of public sector management being «a policy issue in its own right»<sup>51</sup>. Proponents of the NPM approach argue that private sector management practices are required to maximise the efficiency and quality of public sector institutions<sup>5253</sup>.

#### 1.7.1 Performance-based funding mechanisms

In the case of public sector universities, NPM has been embodied in the development of various performance-based funding mechanisms underpinned by a «more contractual-oriented vision of how to support research»<sup>5455</sup>. This market-like approach to the allocation of resources is supposed to provide greater accountability and solve the problem of chronic underfunding<sup>5657</sup>. It entails measuring the comparative “performance” of individual institutions and distributing resources disproportionately to those that perform the best. The key idea behind the rationale for performance-based university funding is that promoting competition for resources among institutions drives up efficiency and quality across the system, and incentives lesser-performing institutions to improve<sup>5859</sup>.

In such a competitive context for public funding, PE has gradually shifted from its social, cultural and educational goals, to become a branding and public relations strategy to

<sup>50</sup> J. Williamson, *Democracy and the “Washington consensus”*, in «World Development», n. 21, 8 1993, pp. 1329–1336.

<sup>51</sup> M. Barzelay, *The New Public Management: Improving Research and Policy Dialogue*, The New Public Management, University of California Press 2001.

<sup>52</sup> E. Ferlie et al., *The New Public Management in Action*, Oxford University Press 1996.

<sup>53</sup> J.-E. Lane, *New Public Management: An Introduction*, Routledge 2002.

<sup>54</sup> A. Geuna, *The Changing Rationale for European University Research Funding: Are There Negative Unintended Consequences?*, in «Journal of Economic Issues», n. 35, 3 2001, pp. 607–632.

<sup>55</sup> M. Turri, *The difficult transition of the Italian university system: growth, underfunding and reforms*, in «Journal of Further and Higher Education», n. 40, 1 2016, pp. 83–106.

<sup>56</sup> A. Geuna, B. R. Martin, *University Research Evaluation and Funding: An International Comparison*, in «Minerva», n. 41, 4 2003, pp. 277–304.

<sup>57</sup> OECD - Organisation for Economic Co-operation and Development, *The OECD Report on Regulatory Reform*, Paris 1997.

<sup>58</sup> M. Herbst, *Performance-Based Budgeting or Funding, Financing Public Universities: The Case of Performance Funding*, Springer Netherlands, Dordrecht 2007, pp. 65–94.

<sup>59</sup> D. Hicks, *Performance-based university research funding systems*, in «Research Policy», n. 41, 2 2012, pp. 251–261.

attract more partners and students<sup>60</sup>.

### 1.7.2 The Italian “institutional meritocracy”

Until the 1990s, the organisation and funding of Italian higher education was delivered in a heavily centralised fashion<sup>61,62</sup>. This centralisation was especially evident in the provision of funds to universities, with university budgets characterised by firm itemisation and funds allocated strictly according to each budget item<sup>63</sup>. In 1993, however, a new funding mechanism was introduced, which scrapped the itemisation of university funds in order to «a) increase the level of funding and administrative autonomy of universities and b) allocate an increasing quota of public resources not on a historical basis but on a rewarding model»<sup>64</sup>.

This shift in funding arrangements was consistent with various other changes in the organisation and management of higher education systems in Italy, Europe, and globally, which share core elements of the NPM paradigm. In Italy as elsewhere, universities since the 1990s have been encouraged to tighten their links with non-university sectors, including offering commercial services; their research and teaching activities began to be more closely scrutinised; and there was a «drive to establish a “brand name” for each university to make individual institutions more attractive to prospective students and research customers»<sup>65</sup>.

Supporters of such reforms claimed that a more advanced higher education system could only be achieved through «a more entrepreneurial, quality-oriented, innovation and competition driven organizational model of university» and «strong decentralization», with the State steering «at a distance and evaluat[ing] universities’ performance»<sup>66</sup>. These reforms were further galvanised by the Bologna process, which ratified the Sorbonne agreement on the homogenisation of European higher education systems agreed by Italian, French, British and German ministers<sup>67</sup>.

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<sup>60</sup> J. Blanton, *Engagement as a Brand Position in the Higher Education Marketplace*, in «International Journal of Educational Advancement», n. 7, 2 2007, pp. 143–154.

<sup>61</sup> S. Boffo, R. Moscati, *Evaluation in the Italian Higher Education System: Many Tribes, Many Territories... Many Godfathers*, in «European Journal of Education», n. 33, 3 1998, pp. 349–360.

<sup>62</sup> R. Moscati, *The Implementation of the Bologna Process in Italy*, a cura di A. Amaral et al., *European Integration and the Governance of Higher Education and Research*, Springer Netherlands, Dordrecht 2009, pp. 207–225.

<sup>63</sup> S. Boffo, R. Moscati, *Evaluation in the Italian Higher Education System: Many Tribes, Many Territories... Many Godfathers*, cit.

<sup>64</sup> A. Geuna, M. Sylos Labini, *Il finanziamento pubblico delle università italiane: venti anni di riforme incompiute* (n. 201319), *Department of Economics and Statistics Cognetti de Martiis. Working Papers*, University of Turin 2013.

<sup>65</sup> R. Moscati, *The Implementation of the Bologna Process in Italy*, cit.

<sup>66</sup> M. Vaira, *Verso un’Università post-fordista? Riforma e ristrutturazione organizzativa nell’Università italiana*, in «Rassegna Italiana di Sociologia», 3/2003 2003.

<sup>67</sup> Ibidem.

Against this backdrop, the Italian government has successively introduced new funding strategies that entail institutional competition – both in teaching and research – as a resource allocation strategy<sup>68</sup>. Italy has followed the trend of other European countries of reducing the government's block grant to universities (the *Fondo di Finanziamento Ordinario* or FFO) – from 61.3% in 2000 to 56.1% in 2014 – replaced by an important increase in external contractual funding from 10.1% to 16.3% of the total income of universities, as well as an increase in income from student fees (from 10.8% to 14.7%)<sup>69</sup>.

It is within the FFO block grant itself where the greatest changes have been made, particularly in the introduction of performance-based formulas to distribute an increasing share of it. The introduction of the FFO in 1993 encompasses perfectly the two main premises of the NPM paradigm: greater accountability and market-like allocation of resources<sup>70</sup>. The FFO funding flows are divided into three main components: a basic quota, a performance-based rewarding share, and a small portion destined to cover special legal dispositions. Since 2008, when a ministerial decree had passed stating that the performance-based rewarding share should not be less than 7 percent of the FFO, the portion allocated based on evaluation has increased up to 21.6% in 2015<sup>71</sup>. From this 21.6%, 65% was allocated according to the results of “VQR 2004-2010”.

This performance-based funding mechanism is certainly increasing the efficiency of universities, as theorized by NPM promoters, but is also distorting the historically undifferentiated nature of Italian academic system<sup>72</sup>, with the consequence of exacerbating the differences between Northern and Southern Italy and promoting the so-called “institutional meritocracy”<sup>73</sup>. This new model presupposes both the inevitability and the desirability of a vertically stratified higher education system in which institutions are positioned basing on their worth or “merit”. In addition, according to this model, merit is an intrinsic parameter, not dependable on pre-existing stocks of economic, cultural, and social capital, and can therefore be objectively measured<sup>74</sup>.

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<sup>68</sup> M. Dal Molin *et al.*, *New Public Management Reforms in the Italian Universities: Managerial Tools, Accountability Mechanisms or Simply Compliance?*, in «International Journal of Public Administration», n. 40, 3 2017, pp. 256–269.

<sup>69</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, *Rapporto Biennale 2016*, s.d. <https://www.anvur.it/rapporto-biennale/rapporto-biennale-2016/> (accessed 24/01/22).

<sup>70</sup> J.-E. Lane, *New Public Management: An Introduction*, cit.

<sup>71</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, *Rapporto Biennale 2016*, cit.

<sup>72</sup> J. L. Mateos-González, V. Boliver, *Performance-based university funding and the drive towards ‘institutional meritocracy’ in Italy*, in «British Journal of Sociology of Education», n. 40, 2 2019, pp. 145–158.

<sup>73</sup> *Ibidem*.

<sup>74</sup> S. S. Amsler, C. Bolsmann, *University ranking as social exclusion*, in «British Journal of Sociology of Education», n. 33, 2 2012, pp. 283–301.

### 1.8 Aim of the work

Competition through marketisation has brought pressure on institutions to open up to public communications, and to compete for public visibility<sup>757677</sup>, which is likely to have consequences for the societal conversation around science<sup>7879</sup>.

Hitherto, however, systematic studies have only focused on organisational public communication at the central level of universities<sup>80818283</sup>. These studies point to a growing orientation on the part of organisations towards the media and journalists to build a reputation and image through self-promoting scientific findings and scientists. It has also been found that research that serves news values well (surprise, large numbers, crises and catastrophes, conflict, human interest, etc.) has a better chance of being communicated than research that contributes to enlightening society<sup>84</sup>. From these findings it seems evident that at the central communications level, communication of science serves the goals of public visibility rather than PE.

Little is known about PE at other levels of the academic organisation. For example, very few studies investigated the communication structures and functions of departments and research centres, despite their prominent role in building science-society relations. Not only they are the places where scientific knowledge is produced, but they also have a privileged position in accessing publics and influencing public debate.

A first preliminary attempt to measure communication activities of research institutes was made in Portugal<sup>85</sup>, where emerging capacity building measures for public

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<sup>75</sup> P. Weingart, P. Pansegrau, *Reputation in science and prominence in the media: the Goldhagen debate*, in «Public Understanding of Science», n. 8, 1 1999, pp. 1–16.

<sup>76</sup> S. Rödter, *Science and the Mass Media – ‘Medialization’ as a New Perspective on an Intricate Relationship*, in «Sociology Compass», n. 5, 9 2011, pp. 834–845.

<sup>77</sup> D. Rowe, K. Brass, *The uses of academic knowledge: the university in the media*, in «Media, Culture & Society», n. 30, 5 2008, pp. 677–698.

<sup>78</sup> M. Entradas *et al.*, *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, in «PLOS ONE», n. 15, 7 2020, p. e0235191.

<sup>79</sup> R. Moscati, *The Implementation of the Bologna Process in Italy*, cit.

<sup>80</sup> F. Marcinkowski *et al.*, *Organizational Influence on Scientists’ Efforts to Go Public: An Empirical Investigation*, in «Science Communication», n. 36, 1 2014, pp. 56–80.

<sup>81</sup> H. P. Peters, *Scientific Sources and the Mass Media: Forms and Consequences of Medialization*, a cura di S. Rödter *et al.*, *The Sciences’ Media Connection – Public Communication and its Repercussions*, Springer Netherlands, Dordrecht 2012, pp. 217–239.

<sup>82</sup> D. Rowe, K. Brass, «*We take academic freedom quite seriously*»: *How university media offices manage academic public communication*, in «International Journal of Media & Cultural Politics», n. 7, 1 2011, pp. 3–20.

<sup>83</sup> J. Metag, M. S. Schäfer, *Hochschulen zwischen Social Media-Spezialisten und Online-Verweigerern. Eine Analyse der Online- und Social Media-Kommunikation promotionsberechtigter Hochschulen in Deutschland, Österreich und der Schweiz*, in «Studies in Communication - Media (SCM)», n. 6, 2 2017, pp. 160–195.

<sup>84</sup> S. Rödter, *Science and the Mass Media – ‘Medialization’ as a New Perspective on an Intricate Relationship*, cit.

<sup>85</sup> M. Entradas, M. M. Bauer, *Mobilisation for public engagement: Benchmarking the practices of research institutes*, in «Public Understanding of Science», n. 26, 7 2017, pp. 771–788.

communication of the institutes' research activities were reported.

Another attempt was made in 2018, when the first systematic multi-country study of research institutes with a two-fold goal – to comparatively assess public communication across countries and areas of research, and to examine the factors that explain public communication activity – was conducted. This work pointed to disciplinary cultures in science communication, both in terms of intensity and choices of formats of engagement. Natural sciences have often been found to be less active than social sciences<sup>868788</sup> – astronomy<sup>89</sup>, and climate science<sup>90</sup> may be exceptions. Natural sciences engage more in educational activities for schools and the wider public; social sciences tend to be more active in civic-related activities<sup>91</sup>. More recent research shows that this activity associates with the organisational contexts in which scientists work: a global survey of astronomers showed that those scientists working with more resources from their institutions are also more active communicators, regardless of the global region in which they worked<sup>92</sup>.

In 2020 first empirical observations as a baseline study on cultures of science communication across countries and disciplines at the level of research institutes were offered to define key concepts of public communication of departments<sup>93</sup>.

The present thesis, which will focus on the Departments of Earth Sciences of Italian universities, is intended as a spin-off of the last study, and will share its goals. The choice of the type of institute to investigate has only depended on the academic background of the thesis' author.

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<sup>86</sup> M. W. Bauer, P. Jensen, *The mobilization of scientists for public engagement*, in «Public Understanding of Science», n. 20, 1 2011, pp. 3–11.

<sup>87</sup> P. Jensen, *A statistical picture of popularization activities and their evolutions in France*, in «Public Understanding of Science», n. 20, 1 2011, pp. 26–36.

<sup>88</sup> J. C. Besley *et al.*, *Scientists' views about communication objectives*, in «Public Understanding of Science», n. 27, 6 2018, pp. 708–730.

<sup>89</sup> M. Entradas, M. W. Bauer, *Bustling public communication by astronomers around the world driven by personal and contextual factors*, in «Nature Astronomy», n. 3, 2 2019, pp. 183–187.

<sup>90</sup> M. Entradas *et al.*, *Public communication by climate scientists: what, with whom and why?*, in «Climatic Change», n. 154, 1 2019, pp. 69–85.

<sup>91</sup> M. Entradas, M. M. Bauer, *Mobilisation for public engagement: Benchmarking the practices of research institutes*, cit.

<sup>92</sup> M. Entradas, M. W. Bauer, *Bustling public communication by astronomers around the world driven by personal and contextual factors*, cit.

<sup>93</sup> M. Entradas *et al.*, *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

## 2 Methods and data

The research strategy adopted in this study is based on two complementary methodological approaches often used in qualitative research: questionnaire and personal interview. Due to the extremely low number of institutes surveyed, in fact, it was not possible to conduct a robust statistical analysis and to test for correlations among variables; thus, an interview was required to provide a meaningful comment on the results obtained and derive some conclusions from them.

### 2.1 Procedure and sample design

An online survey was distributed to surveyed research institutes on October 18<sup>th</sup>, 2021. One week before the questionnaires were distributed, respondents had been pre-notified by email about the study and asked for collaboration. To obtain a complete survey from each institute within short time, the respondents were chosen among former colleagues that the author personally met or worked with during her academic career. This first contact also served to verify whether these people were able to assess the communication efforts of the institute, either a responsible for communications tasks or a researcher involved in the Third Mission committee of the department. If they were not, they were asked to either recommend someone else from their institutes to participate in the survey, or to ask for help while answering the questions. We could not control for the respondents' role as many of these institutes are small and do not have a communications person. In our study, six of respondents were researchers, one was Director, and one was communication staff; four of the questionnaires were answered by two or more people in collaboration. Five respondents reported to be part of the Third Mission committee of their department.

A simplified and shortened version of Entradas *et al.* (2020) questionnaire<sup>94</sup>, with questions on practices, audiences addressed, rationales and resources for public communication, was used. The questionnaire was designed in English and not translated to avoid mistranslations from one language to another. One questionnaire per institute was collected and all were 100% complete (the questionnaires can be found in Appendix B).

A number of modes were used to collect data. Given the intensifying challenge of obtaining responses to surveys, this is now standard practice in survey methodology<sup>95</sup>. Considered the low number of questionnaires submitted and the personal relationship to each respondent, reminders were not sent automatically, but only in case of need as

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<sup>94</sup> Ibidem.

<sup>95</sup> D. A. Dillman, *Mail and Telephone Surveys: The Total Design Method*, Wiley 1978.

personal emails. Also, the possibility to receive help by phone while compiling the survey was offered, but none of the respondents opted for it. However, two of them asked for clarification either by phone call or text message. There is strong evidence that the between-mode differences are slight compared to the potential bias of lower response rates (RRs).

## *2.2 Dependent variables*

My three dependent variables measured the level of public communication activity: “public event making”, “traditional news media”, and “new media channels”. I asked respondents to report estimated frequencies of activities. Activities were measured on an ordinal scale: Never (none); Annually (once a year), Quarterly (2–6 times a year), Monthly (7–20 times a year), Weekly, ‘Don’t know’. “Public event making” (7 items) included public lectures, public exhibitions, open days, science festivals/fairs, science cafés/debates, international events and talks at schools; “Traditional news media” (13 items) included interviews for newspapers, interviews for the radio, interviews for the TV, other TV, press conferences, press releases, newsletters, brochures/non-academic publications, articles in magazines, multimedia, popular books, policy briefs, materials for schools; “New media” (7 items) included website (updates), Facebook, Instagram, TikTok, Twitter, YouTube and Podcasts.

## *2.3 Independent variables*

### *2.3.1 The organisational environment*

I controlled for the effect of the size of the institution, i.e., the number of researchers working at the institute, which is likely to have an influence in level of public communication activity; and for the effect of research budget. Options were 1) less than €100.000, (2) €100.000- €250.000 euros, (3) €250.000–500.000, (4) €500.000–€1M, and (5) more than €1M.

### *2.3.2 Dispositions to communicate publicly*

To measure the level of researchers’ involvement, I asked institutes what “percentage of researchers [in your research institute] engaged in public communication activities in the past 12 months?”. Then I asked institutes whether they had a policy in place for public communication or not. I also asked institutes whether they employed specialist staff dedicated to public communication tasks. Options were (1) we have staff ‘within the institute’, (2) ‘we do not have staff within the institute but have access to the central level/PR office of the institution/university’, and (3) ‘none’. Finally, I asked institutes “how much of your annual

budget have you allocated in the past 12 months to public communication activities? Please do not consider salaries of ‘communication staff.’”

### 2.4 Individual interview

Once completed the data collection through the online questionnaire, I decided to rely on a personal interview to compensate for the limited statistical value of my results, due to the small sample of surveyed institutes. The person chosen is Giuseppe Pellegrini, president of *Observe Science in Society*, a research centre that promotes the study and discussion of interaction among science, technology and society, with the aim of stimulating dialogue among researchers, policy makers and citizens. Also, Giuseppe Pellegrini co-authored the reference paper for the present study<sup>96</sup>, and therefore can provide a meaningful point of view on the answers obtained and compare them with the results of their study. The interviewee was first contacted by a presentation email. Once he agreed to contribute to the study, he was asked to fill and sign a consent form to allow the use of the information provided during the interview, and his direct quotations within the present thesis. The interview was held in Italian and translated into English when quoted in the main text. The conversation was conducted over Zoom on January 25<sup>th</sup>, 2021, and recorded after explicit agreement by the interviewee. The audio was then converted into text by using the online transcription platform [Sonix](#) and manually adjusted (full transcript of the interview can be found in Appendix A). The content was later analysed to extract quotes and relevant information for the study. Before the interview I drafted a list of specific questions and topic areas I wished to cover. The real-time discussion could lead to follow-up questions, often raised from the responses given by my interlocutor, that I juxtaposed to the already set ones.

The semi-structured format here adopted is a quick method for gaining in-depth data. It has several advantages: it involves a more direct interaction than questionnaires, thus allowing «depth to be achieved by providing the opportunity on the part of the interviewer to probe and expand the interviewee’s responses»<sup>97</sup>. The informal setting of the discussion encourages openness and trusts in the respondents: they feel more at ease than in a structured questionnaire or experiment, being likely to explain their view more fully. At the same time, the researcher can probe and ask to clarify parts of the given answers at any moment, he can adjust, rephrase, or restructure questions as the interview develops. Practical disadvantages of this method are the relatively long time required to prepare,

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<sup>96</sup> M. Entradas *et al.*, *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

<sup>97</sup> H. J. Rubin, I. S. Rubin, *Qualitative Interviewing: The Art of Hearing Data*, SAGE 2011.

conduct, and transcribe the interview. In addition, a lot of information risks to not be directly relevant to the research topic and it needs to be sifted through<sup>9899</sup>. The representativeness and the reliability of the sample, both key aspects of this research method, have been guaranteed through a careful selection of the interviewee, based on his expertise on the topic addressed, as well as his contribution to the study on which this thesis is based.

### 3 Sample design

Italy has 32 Departments of Earth Sciences: 24 are mixed with other disciplines (e.g., Department of Mathematics and Geosciences, University of Trieste), and 8 are exclusively dedicated to Geosciences. To avoid a statistical bias, only the 8 institutes purely dedicated to geology were considered in this study. These departments belong to the following universities: University of Turin, University of Milan “La Statale”, University of Padua, University of Florence, University of Pisa, Sapienza University of Rome, University of Naples “Federico II”, and University of Bari “Aldo Moro”. As you can see from the map (Figure 5) the distribution of these institutes is not homogeneous throughout the country: three of them are in the North (Turin, Milan and Padua), three in the centre (Florence, Pisa and Rome) and two in the South (Naples and Bari). Also, they have different sizes: the number of people working in every department, including researchers, post-doctoral fellows and PhD students, and excluding technical and administrative staff, is reported in Table 1.

Table 1: List and staff number of the 8 Italian Departments of Earth Sciences surveyed in the present study.

University	Number of people (researchers, post-doctoral fellows, PhD students)
University of Turin	84
University of Milan	75
University of Padua	141
University of Florence	89
University of Pisa	86
University of Rome	88
University of Naples	100
University of Bari	85

<sup>98</sup> K. Thompson, *Interviews in Social Research: Advantages and Disadvantages*, *ReviseSociology*, 2016 <https://revisesociology.com/2016/01/23/interviews-in-social-research-advantages-and-disadvantages/> (accessed 28/01/22).

<sup>99</sup> H. Alshenqeeti, *Interviewing as a Data Collection Method: A Critical Review*, in «English Linguistics Research», n. 3, 2014.

### Where surveyed Departments of Earth Sciences are located



Map: Chiara Anzolini • Created with Datawrapper

Figure 5: Map with the localization of the 8 Italian Departments of Earth Sciences considered in the present study.

## 4 Results and Discussion

To address my goals, I asked institutes about the type and frequency of public communication activities they had organised or in which they had participated, and how these were resourced. Public communication activities are any event or media activity to any non-peer public.

### 4.1 Communication activities

In this section I asked a series of questions about the public engagement activities the research unit participates/organises for non-specialist audiences. Data show that most of the surveyed research units engage in a variety of public events and traditional media channels, and to a lesser extent in new media.

For what concerns the frequency of **public events** organized or contributed to by the research unit during the year (Figure 6), all units reported to engage in open days (from once a year to every month) and talks at schools (from once a year to every week). Most of them engage in public lectures once per month, exhibitions once a year, international events, such as the European Researchers' Night, once per year, and science cafés 2-6 times per year. Science festivals are the least common event among all institutes, with two of them reporting to never engage in this activity.

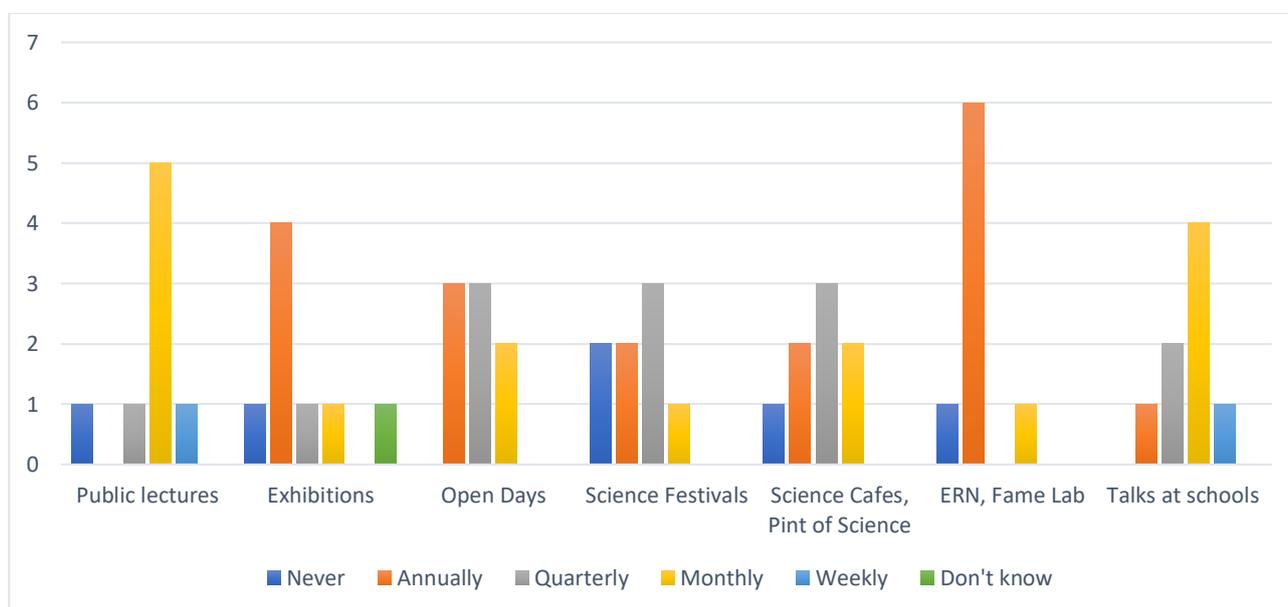


Figure 6: Frequency of public events organized or contributed to by the research unit during the year.

In the case of public events, the factor that seems to exert the highest influence is the department size. This observation is consistent with what reported by Entradas *et al.* (2020) and can be explained by the fact that public events rely mainly on the participation of researchers; thus, the bigger is the department, the larger is its workforce.

The only **traditional media channel** (Figure 7) all departments reported to engage with is the production of materials for schools (from once to 2-6 times per year). Most research units also reported to produce interviews for newspapers (from once a year to every week), interviews for the radio and interviews for the TV (from once to 2-6 times a year), press releases and newsletters (from once a year to every month), articles in magazines and multimedia/video/films (from once to 2-6 times a year). Other TV shows, press conferences and brochures/leaflets/publications were reported to never be used by two departments, whereas the other six reported to engage in them from once to 2-6 times per year. The least used channels are popular books and policy papers, with three departments reporting to never produce any of them.

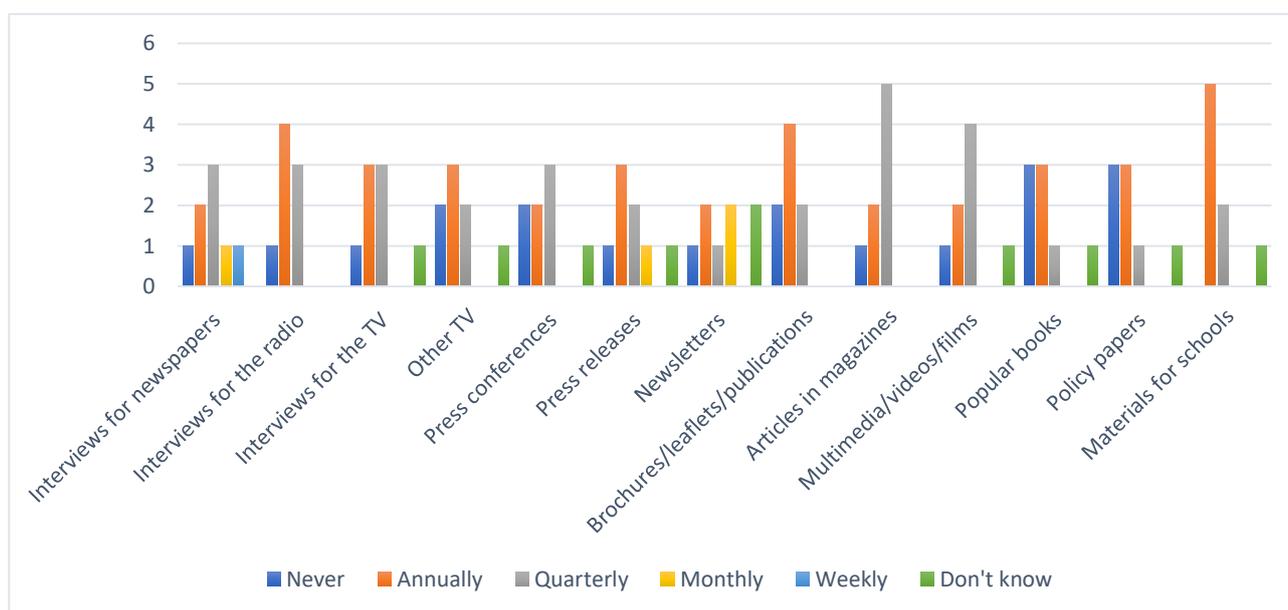


Figure 7: Frequency of use of traditional media channels throughout the year.

The use of traditional media channels, although partially dependent on the size of the department and on the percentage of active researchers, seems to rely mainly on the presence of qualified staff. This is probably because scientists are not trained in communication and therefore feel not at ease to engage in activities that are usually prerogative to journalists, such as interviews, press releases and press conferences.

As appears from both public events organized and traditional media channels used, Departments of Earth Sciences engage more in educational activities for schools and the wider public. This is typical of all natural sciences<sup>100</sup> because, as Professor Pellegrini explains, students are a favourable target to address:

<sup>100</sup> M. Entradas, M. M. Bauer, *Mobilisation for public engagement: Benchmarking the practices of research institutes*, cit.

*Working with schools is easier than with other publics first because they are eager to come to visit departments, then you have teachers that act as a mediator between scientists and students, and lastly students are generally more prepared than lay people.*

In other words, communicating to schools is a format that researchers are familiar with, because is the one they have been exposed to for their entire academic career and is very similar to the one they use with their university students. On the contrary, new communication formats need a specific preparation, that usually scientists lack of.

*We as Observa have been observing the European Researchers' Night since many years and we have noticed how hard it is for researchers to familiarize with new communication formats. Let's keep in mind that new formats have a high potential, but they must be "handled with care", because we have seen weird situations... For example, the "science dinner", which is supposed to be an informal place of exchange and dialogue, is often transformed into a conference... As the saying goes "they put new wine in old wineskins" and this is not good, but it happens.*

In addition to this, we must also consider the effect that the marketisation of universities is having also on the relationships between school and academia, as Professor Pellegrini points out:

*Beyond the fact that schools are a favourable target, we should remember that secondary school students are potential future university students. Thus, there is also a recruiting process in place that must not be overlooked.*

About **new media channels** (Figure 8), all research units reported to use Facebook (from 2-6 times per year to every week) and YouTube (from once a year to every week). Those departments that reported to use a website and an Instagram account, post from 2-6 times per year to every week. Twitter and podcasts are used by four and two units, respectively, whereas TikTok is used by none. These findings are different from what observed in the reference study, where online interactions occurred mostly through institutional websites (73% reported updating these at least monthly), with a large proportion of institutes reporting never using Facebook or Twitter (46% and 60% respectively).

I found that overall, institutes more active in one type of means of public communication are also more active in the others. However, data presented here suggest that the use of new media channels is correlated with a high percentage of active researchers involved in PE, rather than the size, as instead observed by Entradas and co-authors. This might be due to social media being a cheap and fast way to reach a large audience; therefore, small

departments with less resources have started to exploit these channels to gain more visibility and be more competitive in the university-market.

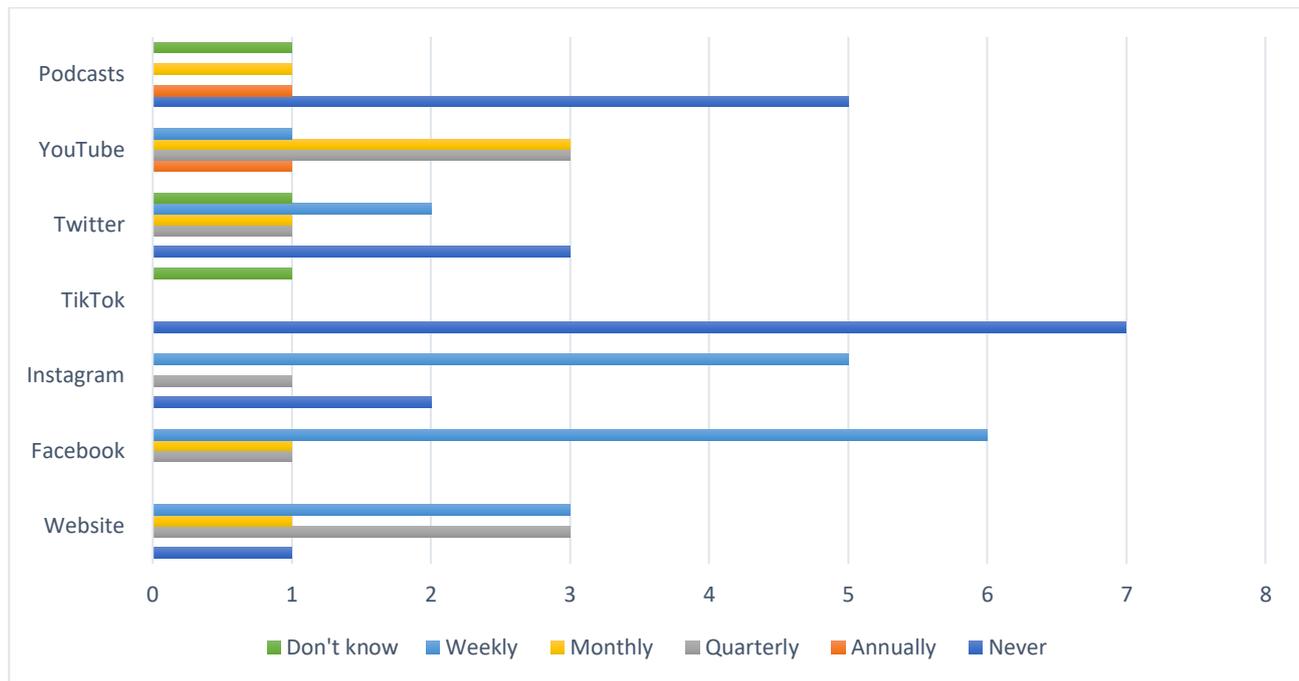


Figure 8: Frequency of use of new media channels throughout the year.

Notwithstanding that new media are used regardless of the size, their distribution is not homogeneous: some channels are used by all research units, whereas others by none, or very few. There are two possible reasons to justify this: first, the use of new media channels is not straightforward, as Professor Pellegrini explains:

*Social media need a specific expertise to be handled because every channel has its own characteristics. Therefore, some institutes decide not to use certain channels, or to use only some of them... For example, YouTube requires a great awareness of who the target is and which tools you need to reach it.*

Secondly, the choice of the social media is strongly dependent on the audience we want to address, Professor Pellegrini continues:

*When researchers want to communicate with non-experts tend to choose social networks that are more popular, less techno-scientific let's say. Conversely, to reach their network of peers they mostly use Twitter, which is a very common platform within the scientific community.*

After all these considerations, it is important to remark that claiming to use several media channels does not mean that departments have a communication strategy in place, with the consequence that their use might not lead to the expected outcomes.

### 4.2 Audiences addressed

Here I asked a series of questions about the **audiences** the research unit engages with throughout the year (Figure 9). All departments reported to engage with the general public and schools (from occasionally to very frequently), students outside teaching (from rarely to frequently) and members of local municipalities/councils/associations (from occasionally to frequently). Most of the research units engages frequently with delegates from industry, occasionally with governments/politicians/policy makers and media/journalists, and rarely/occasionally with non-governmental organisations.

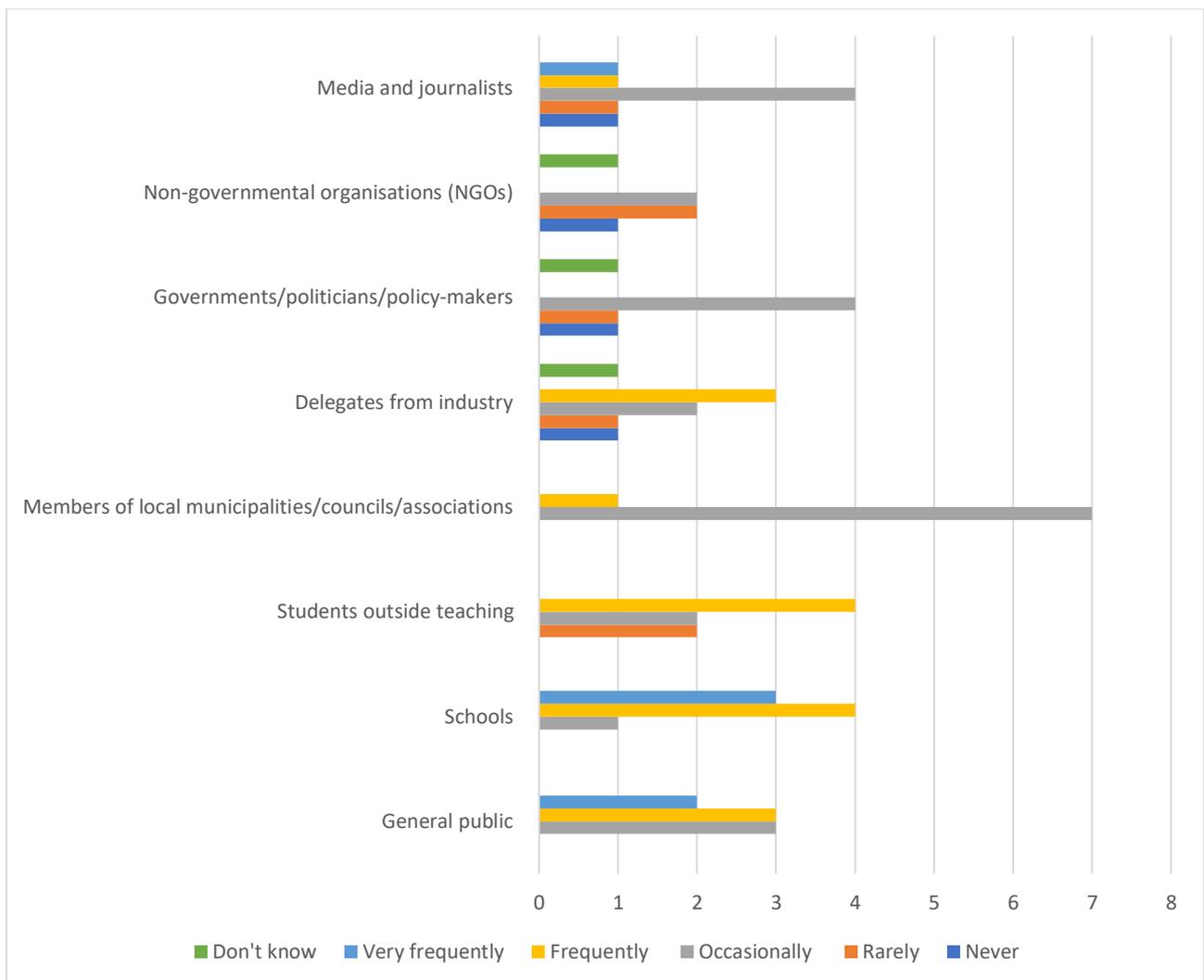


Figure 9: Frequency of interaction with different audiences throughout the year.

When asked about the **media/journalist enquiries** received in the last 12 months (Figure 10), half of surveyed research units (4) declared to have received 1-2 media/journalists enquiries. Two departments reported to have received 6-10 enquiries and one department more than 10 enquiries. One department did not receive any enquiry.

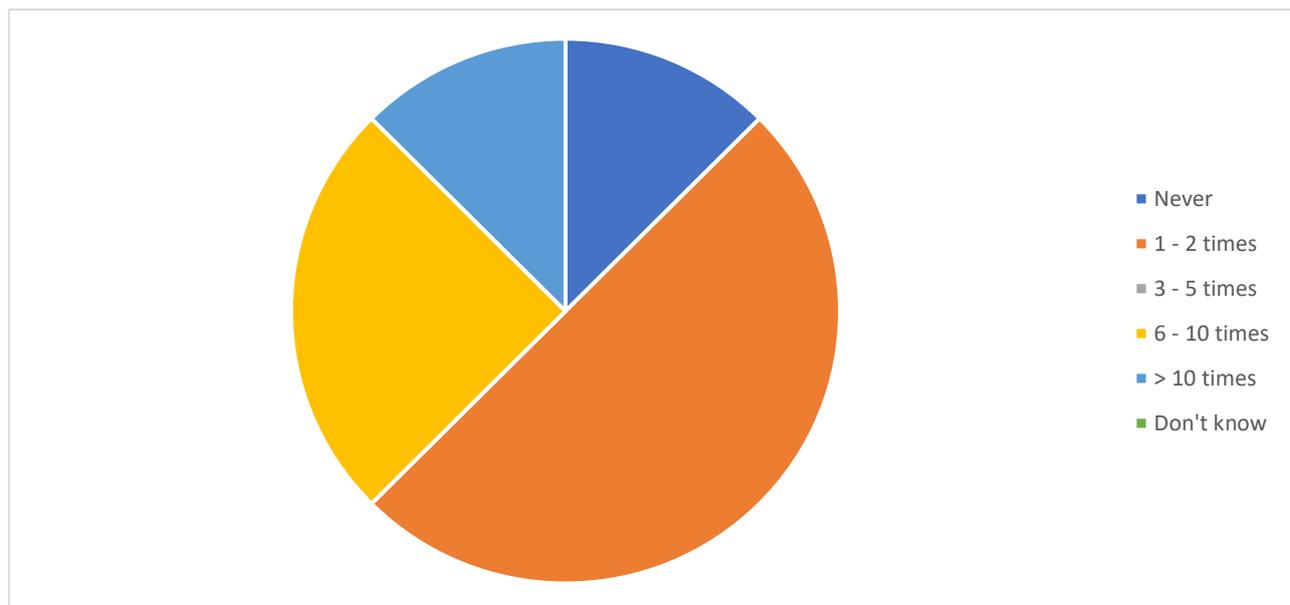


Figure 10: Frequency of media/journalists enquiries in the last 12 months.

Most research units (6) do not have a **list/database of journalists and media contacts** (Figure 11), but two of them declared to have personal contacts. One unit reported to have a list/database.

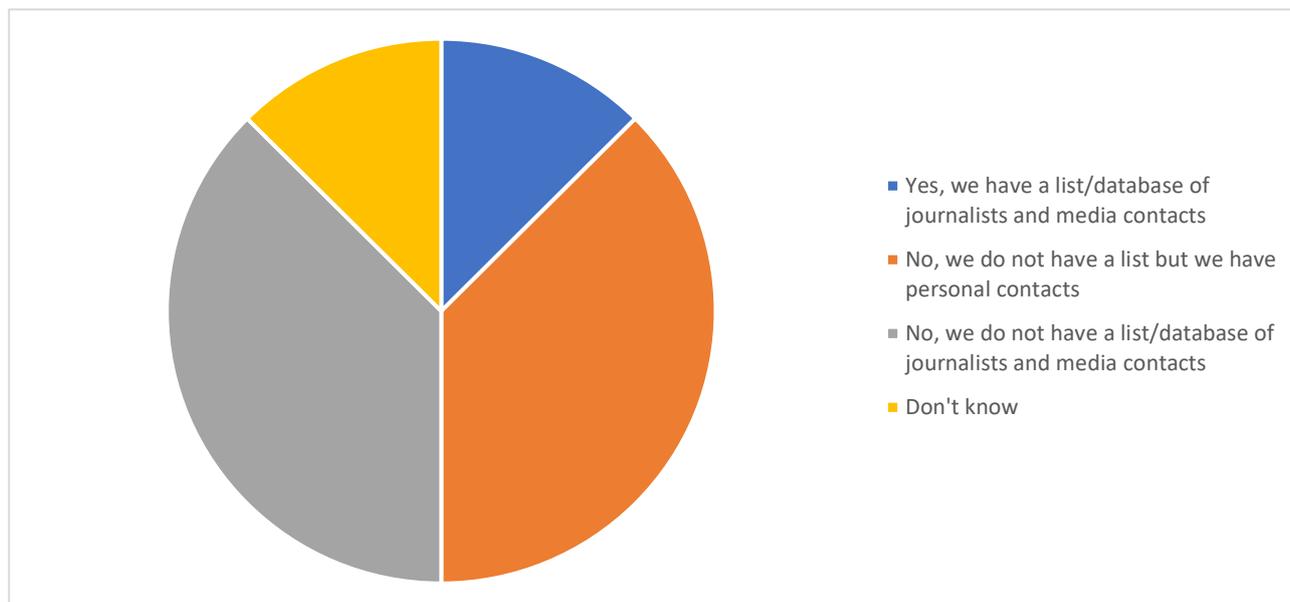


Figure 11: Presence of list/database of journalists and media contacts within the research unit.

We should notice that almost all research units declare to engage with journalists throughout the year, but most of them do not have a list/database of journalists, and only few of them have at least personal contacts. This happens probably because in most cases there is not a proper communication office, which usually is responsible for maintaining the relationships with the media. The absence of a press office also affects the way through which journalists source information.

In fact, to **contact researchers** at the research unit (Figure 12), in most surveyed departments (5) journalists get in touch with them directly. In two cases they either contact the communication/administrative staff first or the researchers directly. In no case journalists contact the university/host institution communication, press office directly.

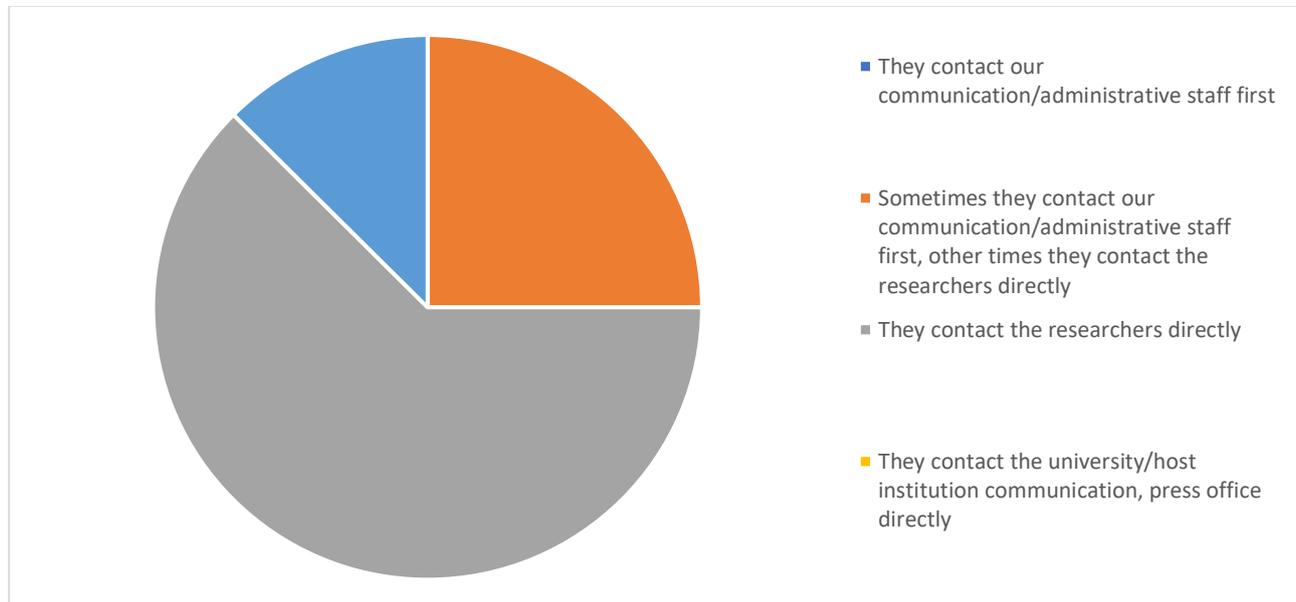


Figure 12: The channel used by journalists and media to contact researchers at the research unit.

All these answers indicate that the relationship between researchers and journalists is still far from being formalized at the institutional level, as Professor Pellegrini remarks:

*This personal and fiduciary relationship between researchers and media is very Italian. You must consider that in other countries universities often have a spokesperson. The British Russell Group is a perfect example of such a thing: the Russell Group is the association of the most prestigious UK-based universities and has its own spokesperson, who speaks for the Russell Group, like it was the Italian association of manufacturing and service companies... I mean... A whole other level!*

Despite having limited internal communication resources, in terms of both funding and expertise, small universities and research units still feel the urgency to be competitive within the university-market and crave for more visibility. In this regard, another aspect which must not be neglected is the growing tendency of universities to rely on a third-party supplier<sup>101102</sup>, as Professor Pellegrini explains:

<sup>101</sup> S. Casini, F. Neresini, *Behind Closed Doors. Scientists' and Science Communicators' Discourses on Science in Society. A Study Across European Research Institutions*, in «TECNOSCIENZA: Italian Journal of Science & Technology Studies», n. 3, 2 2013, pp. 37–62.

<sup>102</sup> S. Heidenreich, *Outreaching, Outsourcing, and Disembedding: How Offshore Wind Scientists Consider Their Engagement with Society*, in «Science, Technology, & Human Values», n. 43, 3 2018, pp. 464–486.

*Outsourcing is a common practice within institutes, that in most cases lack of a trained communication staff. We observe this very often when we phone call universities or departments and they reply: «No, sorry, we can't help you, please call Giovanna Rossi, who takes care of our communication...»*

When it comes to **public engagement efforts**, half of respondents (4) perceive to be successful in enhancing the activities of their research unit (Figure 13), with one of them reporting them to be very successful. Three respondents perceived their PE efforts to be neither successful nor unsuccessful and one declared to consider them very unsuccessful.

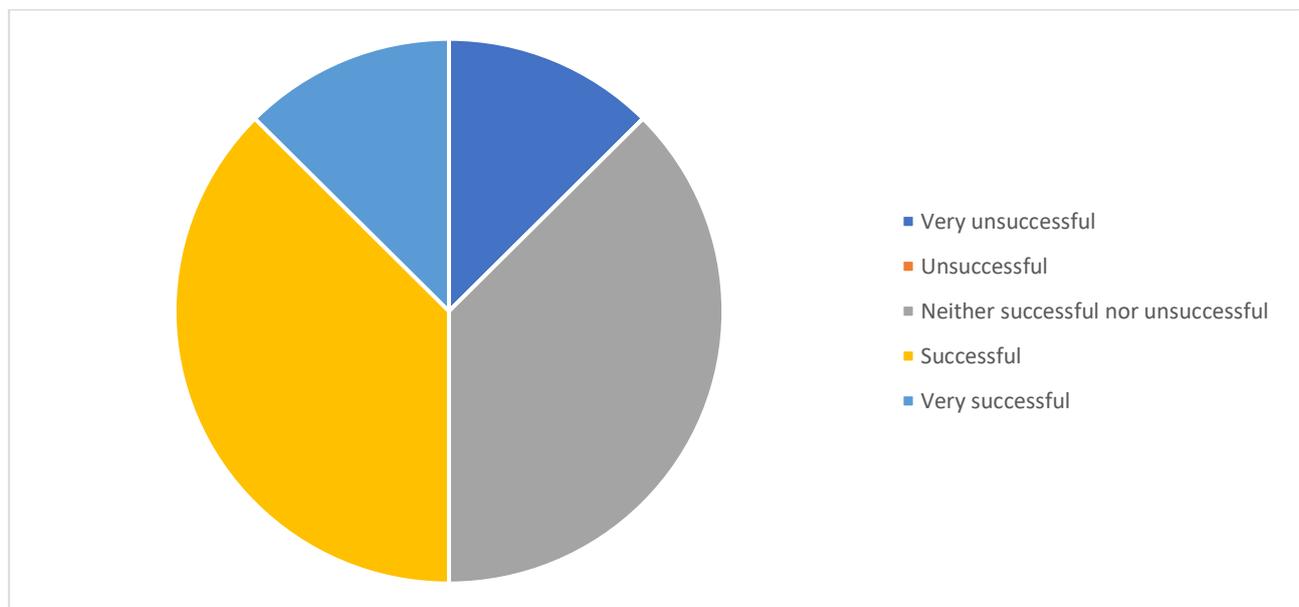


Figure 13: Perception of success of the public engagement efforts in enhancing the activities of the research unit.

Despite the inhomogeneity in perceiving the successfulness of their PE efforts, almost all respondents (7) think their research unit should devote more **resources** to public engagement (funding, staff, etc.) (Figure 14), while only one respondent considers the resources devoted by their department to be the right amount.

This is consistent with the push that Third Mission is receiving both at the European level, with the increasing demand of communicating and disseminating scientific results to the public by the European Research Council and the Marie Skłodowska-Curie Actions, and at the national level, as highlighted by Professor Pellegrini:

*It's been a few years now that ANVUR has started to include Third Mission indicators in its periodical evaluation. This will certainly be a little bit at risk of instrumentalization, but at the same time will incentive departments to increase their public engagement efforts and to encourage their researchers to strengthen their communication skills.*

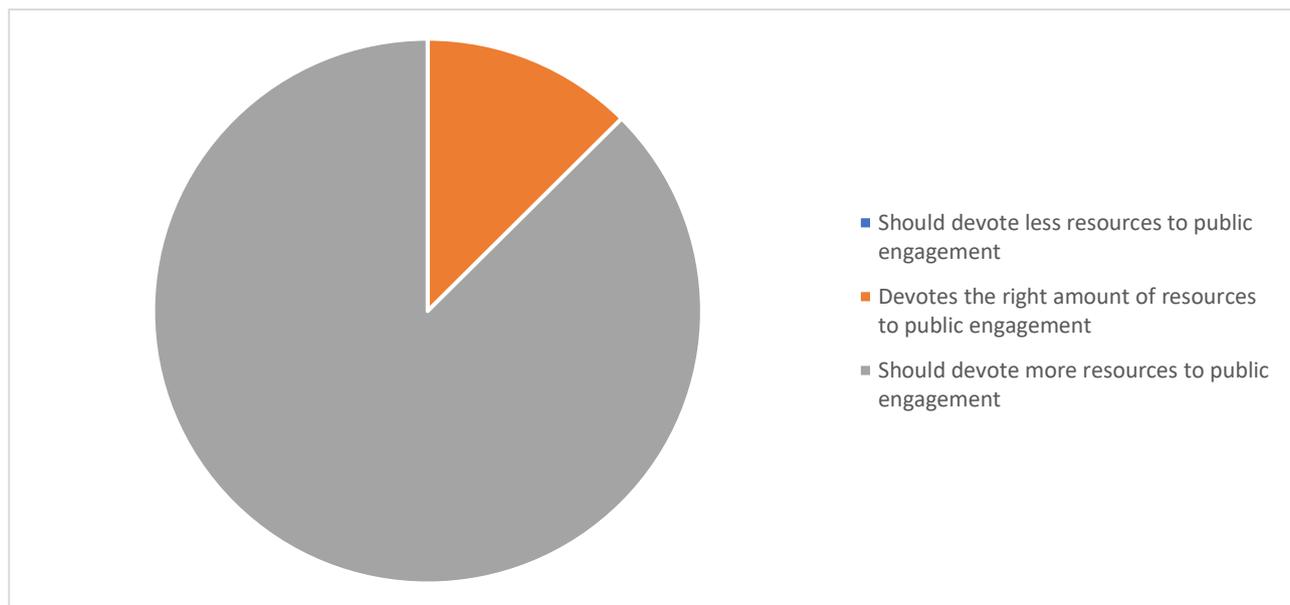


Figure 14: Perception of the need to devote more resources to public engagement.

Despite PE not being fully institutionalized for many aspects, most departments (7) reported to **evaluate** their public engagement activities (Figure 15): three of them rarely, three sometimes and two most of the time. One research unit declared to never do it.

It is very likely that the implementation of the AVA system (Self-assessment, Periodic Assessment, Accreditation), by ANVUR<sup>103104</sup> has had a great influence on this, forcing institutes to continuously self-assess their activities.

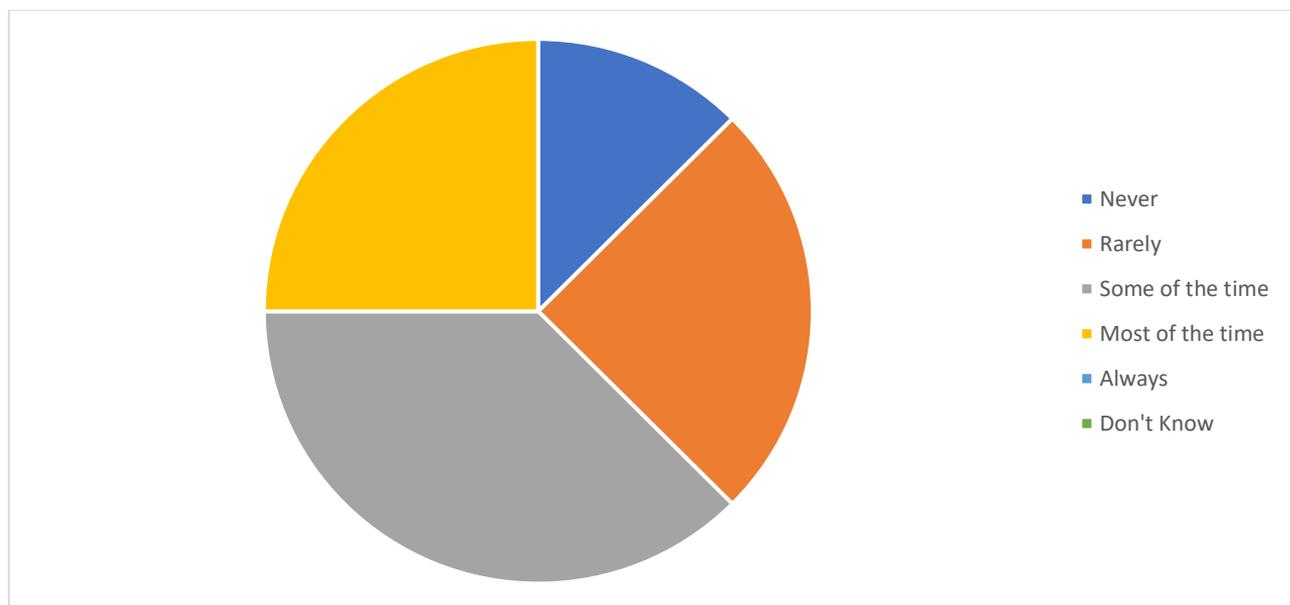


Figure 15: Frequency of evaluation of public engagement activities.

<sup>103</sup> VQR 2004-2010 – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, cit.

<sup>104</sup> ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, AVA – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, cit.

### 4.3 Public engagement resources

In this section I was interested in the resources available for public engagement at the research unit. In particular, how many people are involved in public engagement tasks and what funding is available for engagement public engagement initiatives.

Only two departments reported to have their own **communication staff**, and one declared to have neither its own communication staff, nor access to the communication staff of the institution/organisation. Instead, most research units (5) reported not to have specialist responsible for public engagement activities (Figure 16), but to have access to communication staff within their institution/organisation.

This does not come as a surprise: as well as outsourcing, shared services are a very common practice among research units, which usually have not enough resources, both economical and human, to take care of their own communication. About this, Professor Pellegrini says:

*Research units represent the so-called meso level of organization, but we must not forget that communication can be organized at different levels and in different ways: for example, departments can build their own press and media office, and share it with other departments. In Italy, however, this practice is still quite uncommon. Another solution is to employ the communication services of the host organization, like we see here.*

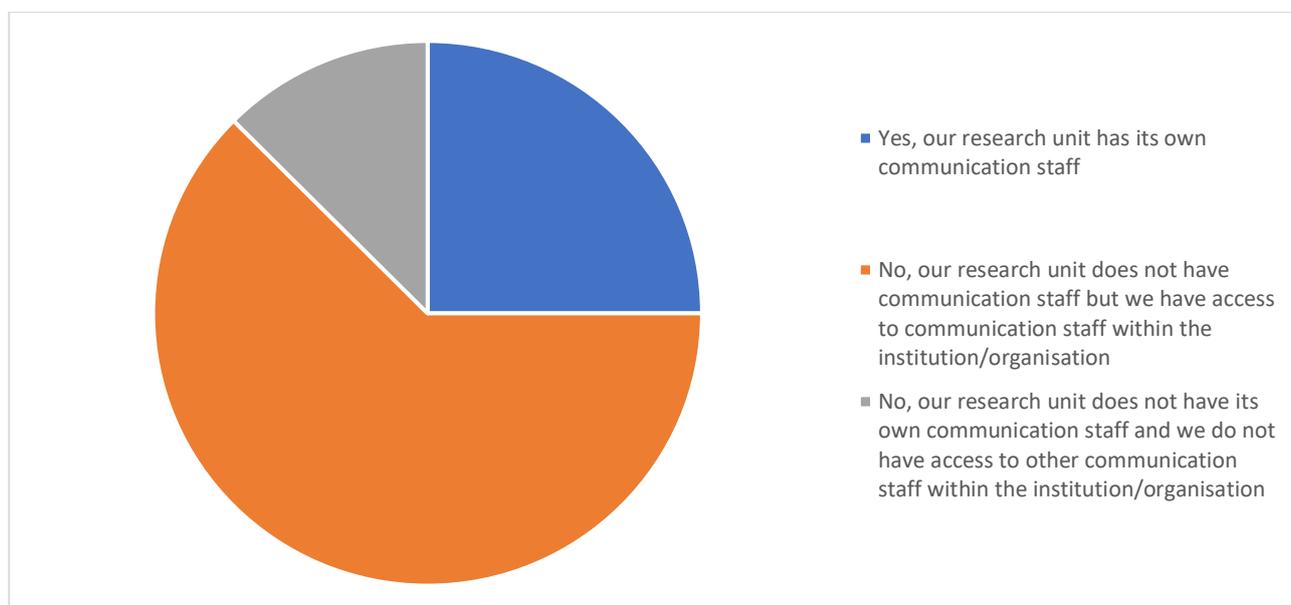


Figure 16: Presence of specialist staff responsible for public engagement activities.

In terms of **contracts** (Figure 17), half of departments (4) declared their communication staff to have a permanent contract with the research institute or host institution. Two of them reported they have a temporary contract, either with the research institute or host institution,

or for a specific research project. In the last two cases the communication staff has another type of contract.

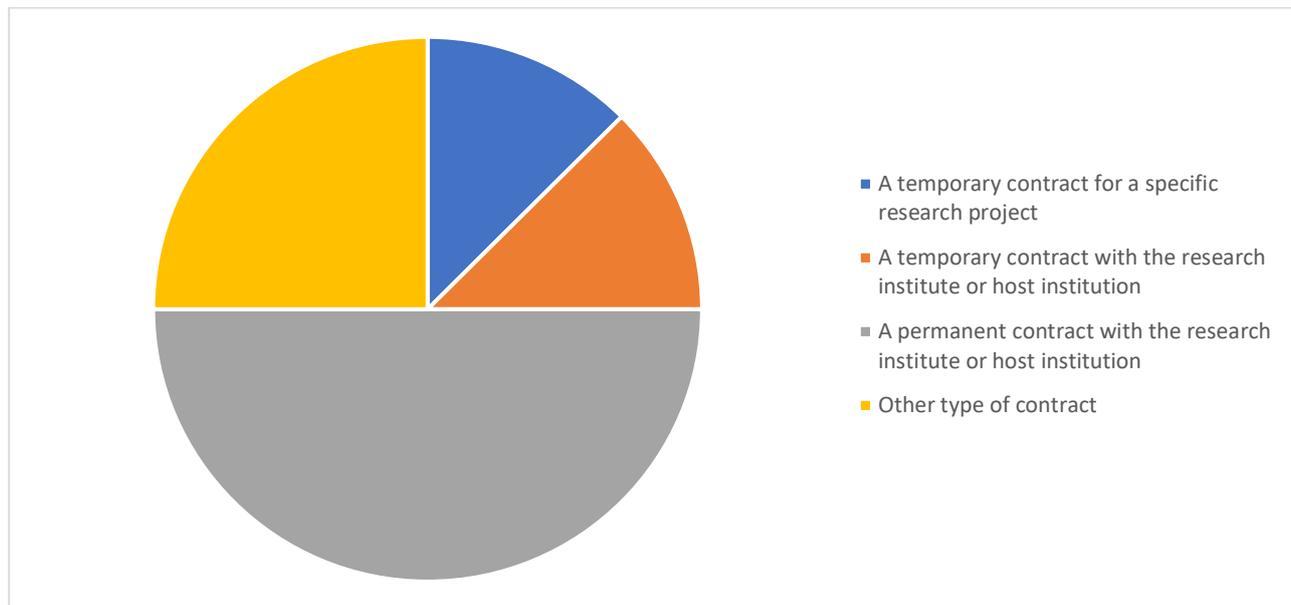


Figure 17: Type of contracts of the communication staff.

This result is not as good as it resembles at a first sight, because we must consider that PE is mainly managed by tenured professors, whose main tasks are teaching and research. This is also proven by the fact that almost all research units (7) reported their communication staff to be only partly dedicated to public engagement activities (Figure 18).

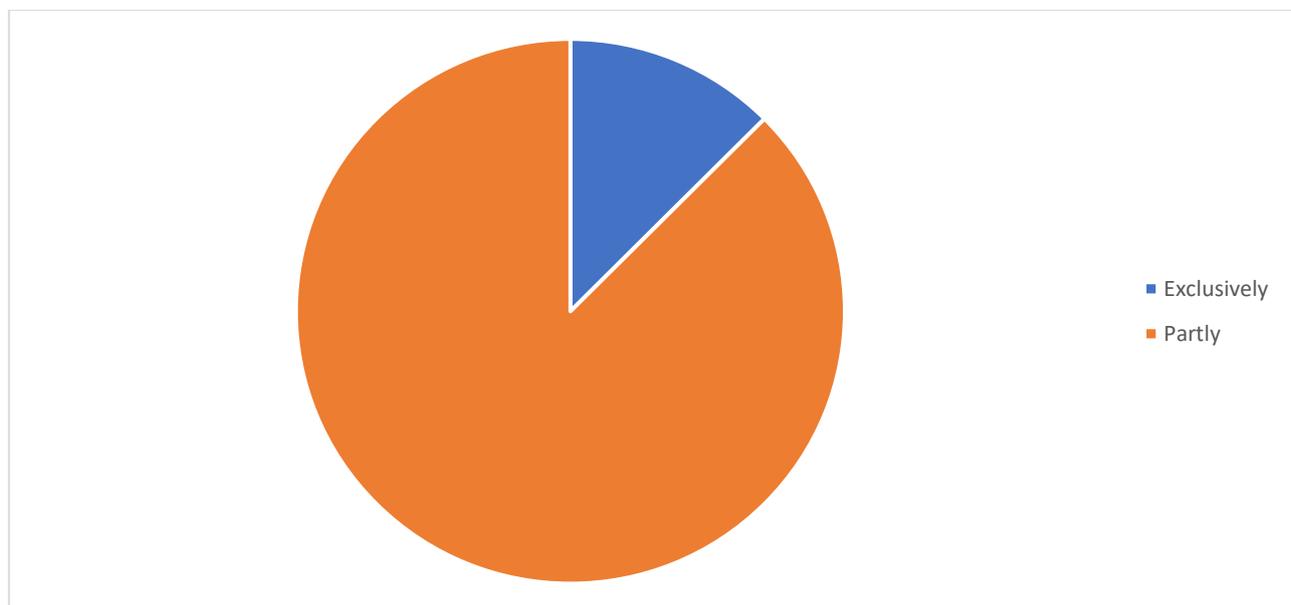


Figure 18: Degree of dedication of the communication staff to public engagement activities.

For the same reason, the **education degree** of the communication staff of most research units (5) falls in the sciences area (Figure 19). Only in one case they have a degree in the communication area, and two respondents did not know the answer.

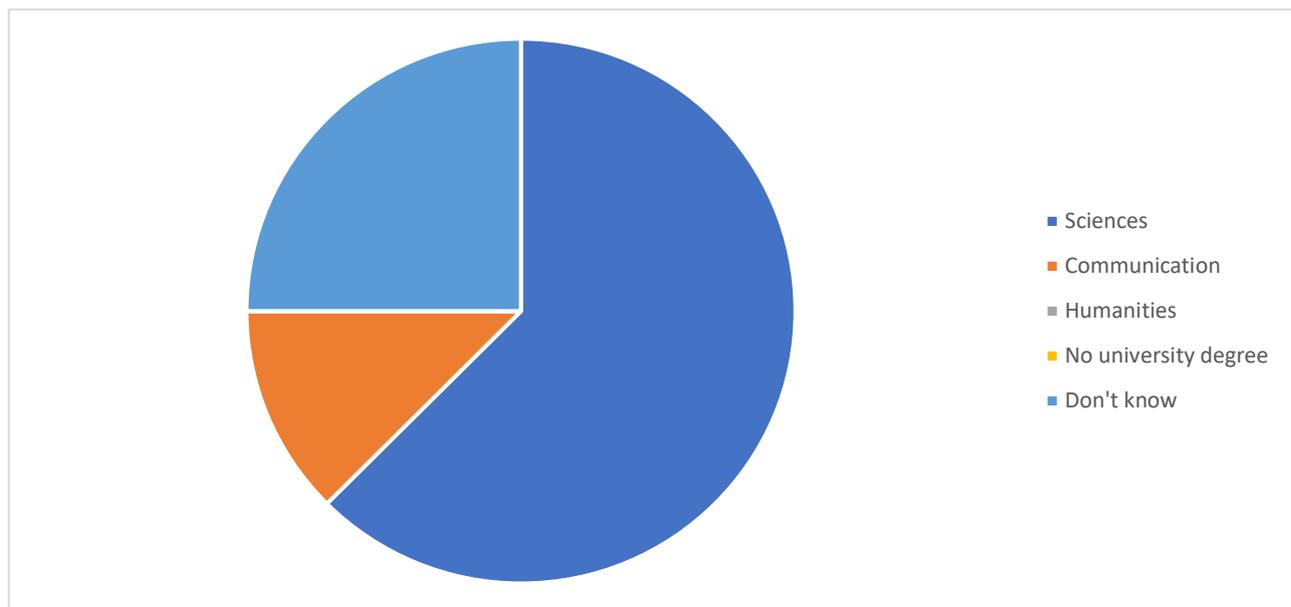


Figure 19: Education degree area of the communication staff.

In half of departments (4) the communication staff has no formal **training in science communication** (Figure 20); in two cases has a degree related to science communication (post-graduation course, masters, or PhD); and in one case they attended workshops/short courses in science communication. In one case the respondent did not know the answer.

This finding is coherent with results from Entradas *et al.* (2020), where data suggested that communication is still taken-for-granted across research institutes at universities and large research organisations<sup>105</sup>.

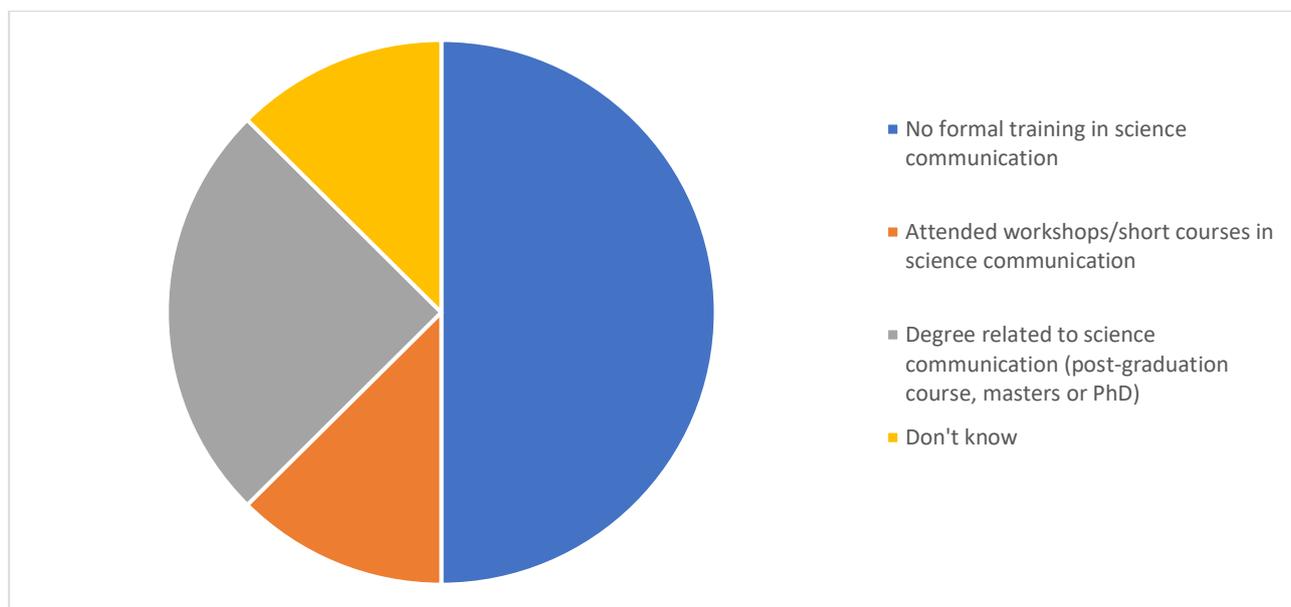


Figure 20: Background or training in science communication of the communication staff.

<sup>105</sup> M. Entradas *et al.*, *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

When asked “For how long the research unit has been carrying out **public engagement activities** for non-specialists audiences?” the answers were quite diverse: two respondents reported for more than 10 years, two between 10 and 5 years, and two between 5 and 1 years (Figure 21). One respondent said they have been doing it for less than 1 year, and one did not know the answer.

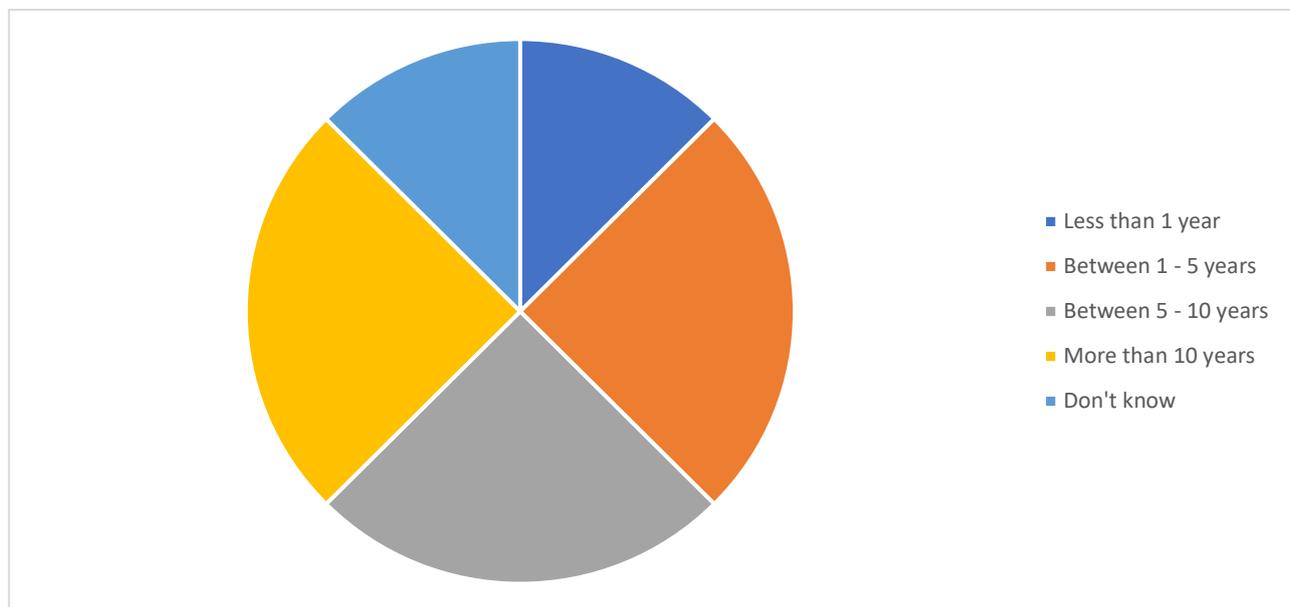


Figure 21: For how long the research unit has been carrying out public engagement activities for non-specialist audiences.

These differences may be related to the very recent implementation of reliable parameters to evaluate TM<sup>106</sup> activities. Moreover, as Professor Pellegrini points out, departments are very autonomous and therefore they might have started considering the engagement in public communication at different times:

*In Italy we have had the so-called departmentalization, when Gelmini Law assigned to departments so much strength and freedom, that now they act autonomously on many sides, such as communication. Although many departments still do not invest enough on PE, we also have virtuous examples. It is the case of University of Venice “Ca’ Foscari”, where in recent years they hired a person to scout for interesting stories and communicate them to the wider public. This proves that even small universities can make good moves when they put a communication strategy in place.*

Nevertheless, the majority of respondents (6) declared that the total number of public engagement activities carried out by their department has increased in the last 5 years; only one said it has stayed the same and in only one case it has decreased (Figure 22).

<sup>106</sup> VQR 2011-2014 – ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, cit.

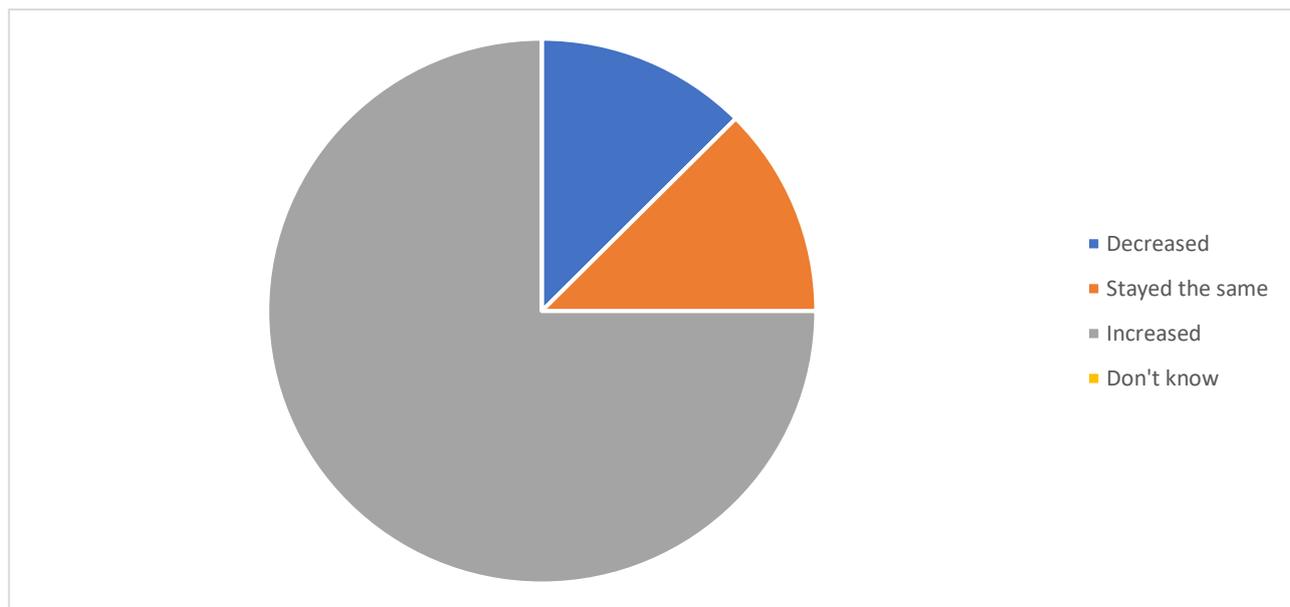


Figure 22: Trend of the total number of public engagement activities for non-specialist audiences in the last 5 years.

This result is perfectly aligned with what we have previously discussed, both in terms of external pushes such as the European Union and ANVUR, and in terms of competition among universities and even single researchers, as Professor Pellegrini explains:

*Beyond the international trend, when researchers travel, visit other labs, or go to conferences abroad – although now a little bit less because of the pandemic – they see things done in a different way and realize they must do the same here in Italy to be competitive.*

When it comes to **activities conducted by the communication staff** (Figure 23), all respondents reported to create/propose public engagement action plans to the leadership of the research unit (from rarely to frequently), motivate researchers to get involved in public engagement events (from rarely to very frequently), compose/edit/print/stream communication and audiovisual materials (from rarely to very frequently), and manage the website and online communication of the research unit (from rarely to very frequently). Almost all respondents (7) reported to decide on public engagement policies with the leadership of the research unit (from rarely to frequently) and to organize public events (from rarely to frequently). Many respondents (3) reported to never intervene in moments of institutional reputation crisis, while three of them do it occasionally, one very frequently and one does not know. Most research units (5) reported to never organize/offer communication training for researchers, while two do it occasionally and one frequently. Half of departments (4) declared also to never assist researchers on planning/completing research grant applications, while the other four do it rarely or occasionally.

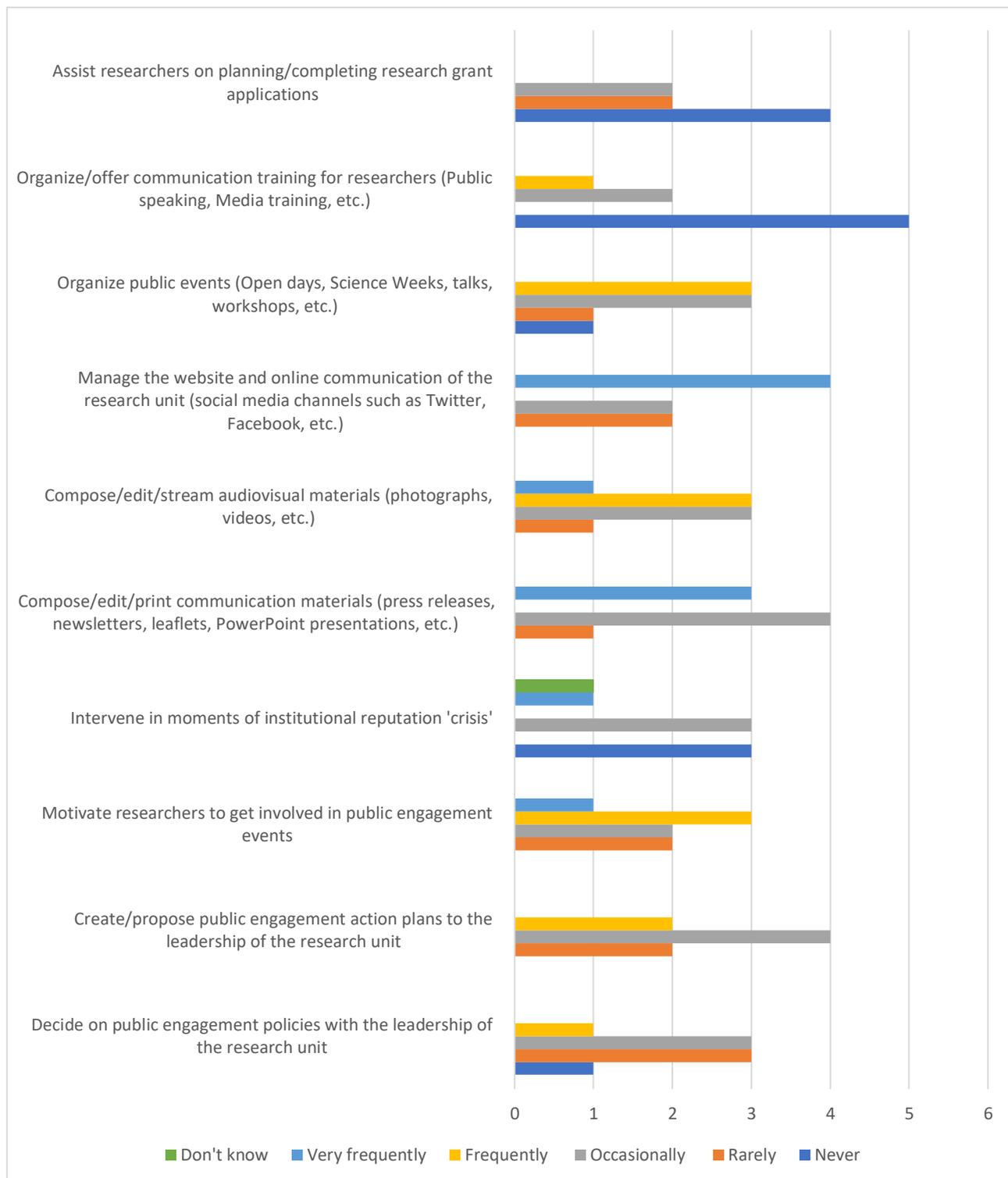


Figure 23: Frequency of activities conducted by the communication staff.

Research units were also asked to report on their commitment to public communication, in terms of budget, policies and researchers active in public engagement.

The majority of respondents (5) estimated that the total **budget** spent in the last 12 months on the PE efforts of the research unit, including actions such as maintenance of the website, printing of brochures, organisation of public events, etc, and excluding salaries of

the communication staff, is less than 1% (Figure 24). Other two respondents estimated it to be between 1% and 5%, and 0%, respectively. One respondent did not know the answer.

Here the average institute spends less than 1% of its annual research budget on public engagement efforts, which is even lower than the 3% reported by Entradas *et al.* (2020)<sup>107</sup>. This indicates that in the surveyed sample public communication is severely unstructured.

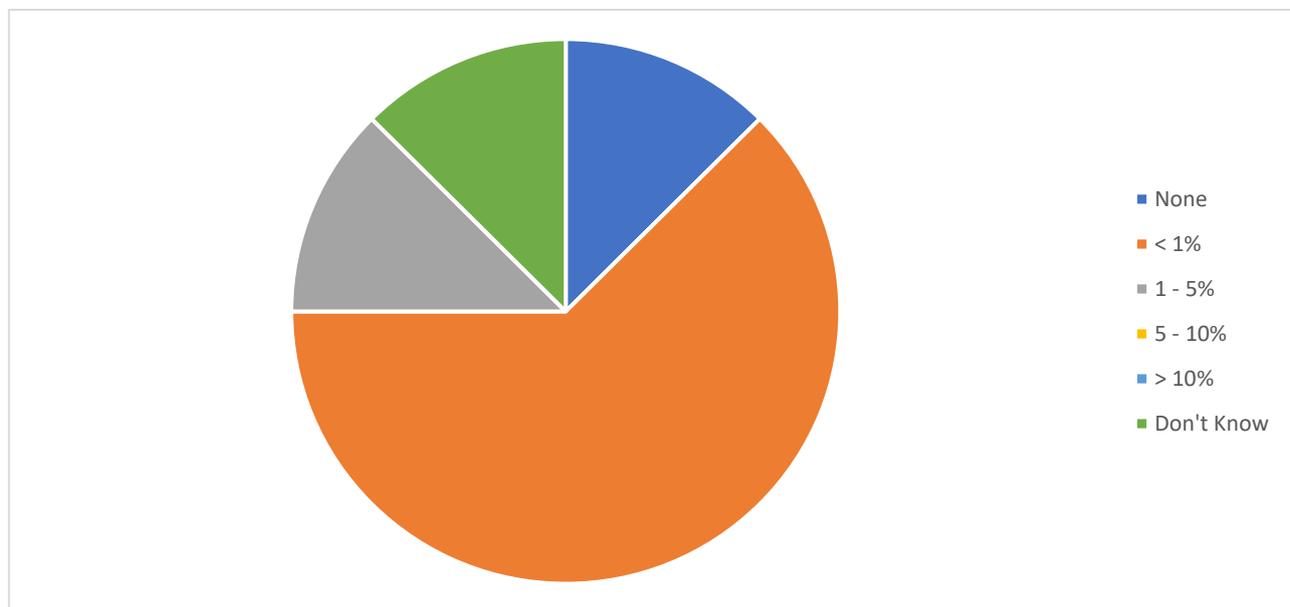


Figure 24: Percentage of the total budget spent in the last 12 months on the public engagement efforts of the research unit, including actions such as maintenance of the website, printing of brochures, organisation of public events, etc., and excluding salaries of the communication staff.

Responses about the average **research income** of the research unit over the last 3 years were very inhomogeneous: half of respondents (4) did not want to answer (Figure 25), and in the other four cases it was reported it to be less than €100,000, between €250,000 and €500,000, between €500,000 and €1M, and more than €1M, respectively.

Due to the low percentage of responses, it was not possible to test the influence of the research income on the commitment of departments. However, the poorest department in terms of total income was also the one to report a 0% of budget dedicated to PE. This indicates that available funding is crucial to engage in public communication, as Professor Pellegrini emphasizes:

*The Italian scenario is complex, because, you know, with 93 universities you have very different situations across the Country: from international, highly competitive institutions to others that struggle.*

<sup>107</sup> M. Entradas *et al.*, *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

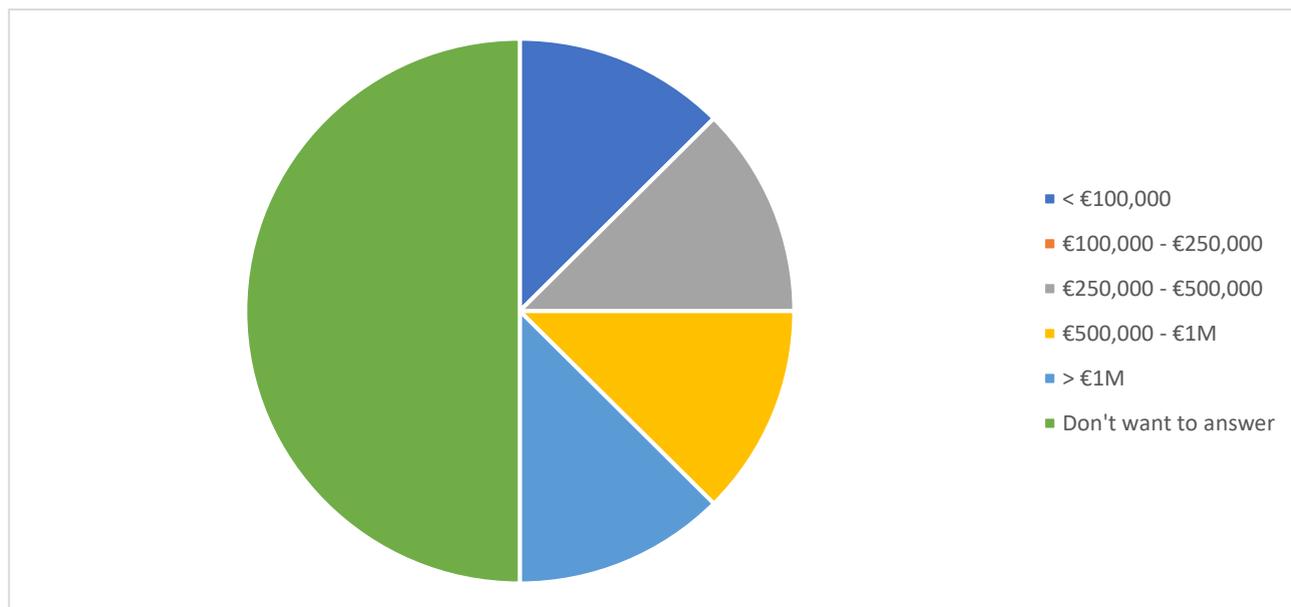


Figure 25: The average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$ .

Despite the differences about the institutional commitment, all respondents stated that their research unit expects the researchers to be involved in communication with the public (Figure 26). Most of them stated that they do not have public engagement action plans nor a **policy** for public engagement, but nevertheless they engage with the public. A public engagement policy is in place in only 50% of departments and most of them do not know whether their communication efforts respond to the national policies on public engagement.



Figure 26: Statements about the commitment of the research unit to public engagement.

The percentage of **researchers**, including PhD students, fellows, visitors, and regular research staff, that takes part in public engagement activities, such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc., is reported to be between 10% and 20% in half of the research units (Figure 27). The other half reported it to be between 20% and 40% in one case, between 40% and 60% in two cases, and between 60% and 100% in one case.

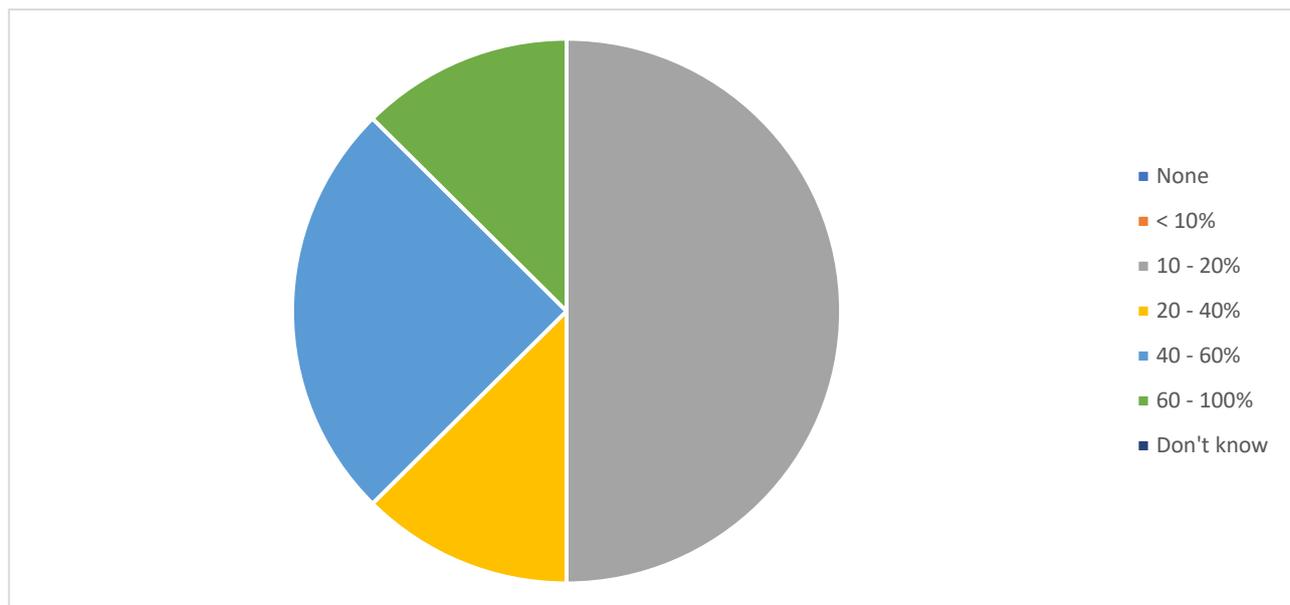


Figure 27: Percentage of researchers, including PhD students, fellows, visitors, and regular research staff, that take part in public engagement activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc.

According to the respondents to the questionnaire, the **factor that seems to discourage** most researchers from taking part in public engagement activities is not perceiving public engagement as contributing to the progress of their careers. Being not rewarded and not perceiving it as their everyday work/responsibility might also play a role for researchers not engaging in such activity. Overall, respondents do not agree about the possibility that feeling not good at engaging with public and lacking institutional support for doing it might be discouraging. Lastly, most respondents do not believe that lack of time and enthusiasm about communicating their work to general audiences could be among the causes discouraging researchers from engaging with public (Figure 28).

These answers cannot surprise us, as explained by Professor Pellegrini:

*The main questions that departments ask themselves are: "Why should I do this?", "What keeps my research going on?", "What assures my researchers a career advancement?". The answer is scientific papers, not public engagement. Thanks to the ANVUR evaluations, from now on scientists will be required to develop other skills other than publishing in Nature, such as tell their research to people who know nothing about it. Engaging only with peers is easy, it is a researcher's job to be capable of doing it, but when it comes to public communication things are very different...*

This is where a structured and fully institutionalized communication will come into play, eventually becoming a so-called instrumental function of departments.

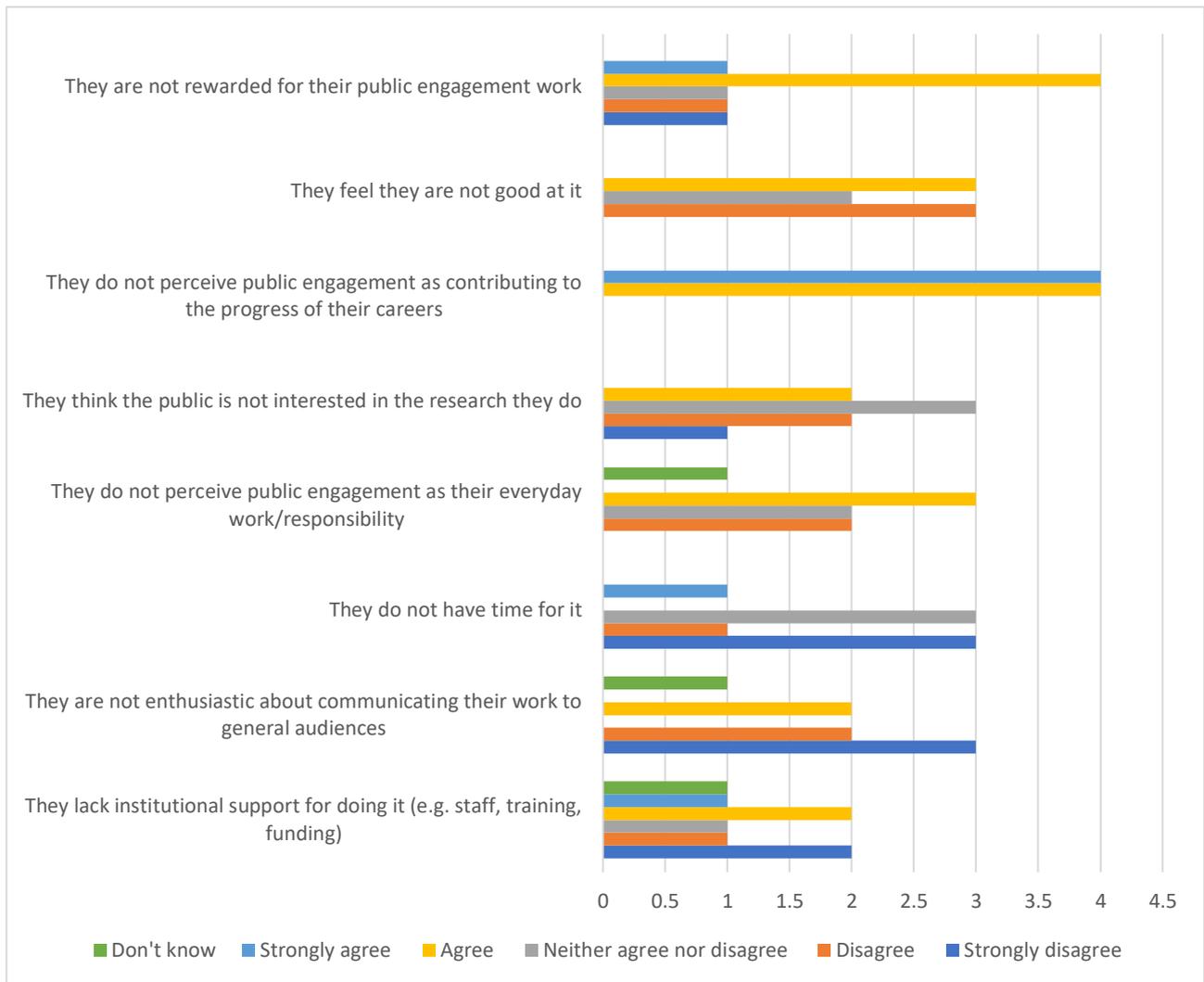


Figure 28: Degree of agreement with statements about what is discouraging researchers who do not engage in public engagement activities.

Although respondents have declared that their department should allocate more resources to public engagement efforts, when asked about the **percentage of the research unit’s annual budget** that in their opinion should be used for PE (Figure 29), there is no agreement across them: one said less than 1%, two between 1% and 5%, two between 5% and 10%, two more than 10%, and one does not have an opinion. These discrepancies might be due to the low awareness and familiarity that researchers have about this subject, which is coherent with their lack of training, as mentioned by Professor Pellegrini:

*They have no clue because probably even at the departmental level a reflection has never been made in this regard. It would be interesting to see whether they have ever included this topic in the department meeting’s agenda. Because if you discuss about it, you can have an idea of the order of magnitude, of the budget... Otherwise...*

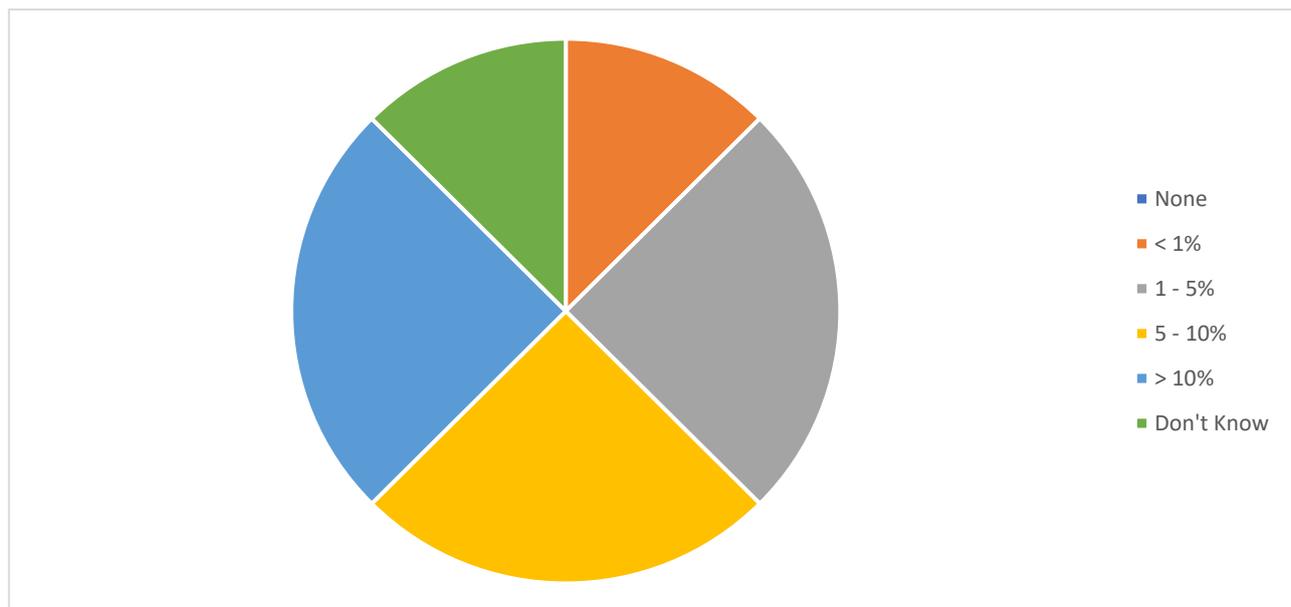


Figure 29: Opinion on what percentage of the research unit's annual budget should be allocated to the public engagement efforts.

#### 4.4 Rationales, perceptions and ethos

In this section I asked some questions about the unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

According to the respondents' view, the **three most important reasons** for the research unit to undertake communication with non-specialist audiences are, in order of importance: 1) to disseminate their research to the public; 2) to respond to the policy/mission of their host institution/university; 3) to attract more students, 4) to recruit new generation of scientists, and 5) to listen and involve the public in their research (Figure 30).

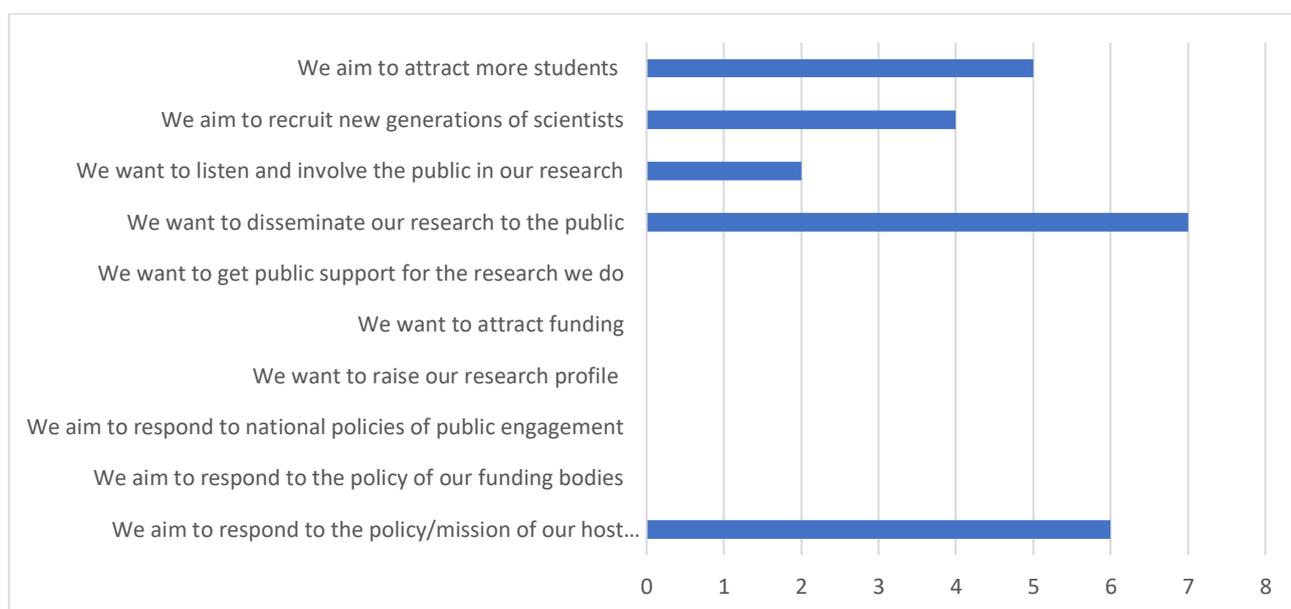


Figure 30: The three most important reasons for the research unit to undertake communication with non-specialist audiences.

## 4 Results and Discussion 4.4 Rationales, perceptions and ethos

These answers are consistent with everything we have discussed until now: the urgency to share scientific results with the general public, the competition of universities, that try to attract new students and promising young researchers to gain more visibility and reputation, and, lastly, the responsibility for the mission of the host institution. About the latter, Professor Pellegrini comments:

*As Observa we have noticed that Italian universities have a completely different ethos than market-oriented universities based in the UK or in the US, and this is due to the source of their funding. In Italy the funding for research and education is entirely public: it is people's money, our money. Therefore, researchers feel quite strongly the responsibility to properly use that funding.*

For the very same reason, none of the research units declared to engage in outreach activities to attract more funding, Professor Pellegrini continues:

*The percentage of private funding in Italian universities is very low, but not zero. However, research units are afraid of declaring they have third-party contracts, or to attract external funding to carry out their research. The institutional ethos among Italian researchers is so strong, that they even feel ashamed to admit that public engagement is also useful to get funded. It would be like saying they are entrepreneurs...*

About the **criteria** used by the research unit when deciding what research results to communicate with non-specialist audiences (Figure 31), almost all respondents agreed on topics relevant to current debates (7) and relevant to daily life (6). Most respondents (6) reported also that topics that are innovative/new developments and findings and topics that are entertaining and interesting are more likely to be communicated by their department. The only criteria upon which there was disagreement among the respondents, with four of them describing it as likely, two as very likely, and one as very unlikely, was the communication of what people should know. In this latter case one respondent did not express his/her opinion.

The great importance given to topics relevant for daily life and current debates might be attributed to the very narrow type of institutes investigated here, as suggested by Professor Pellegrini:

*Let's keep in mind that respondents to this questionnaire are geoscientists, who work on very concrete topics. If you work with riverbanks and floods, you must know very well how to handle citizen science, you cannot ignore it, otherwise you won't write even a line of a European project.*

## 4 Results and Discussion 4.4 Rationales, perceptions and ethos

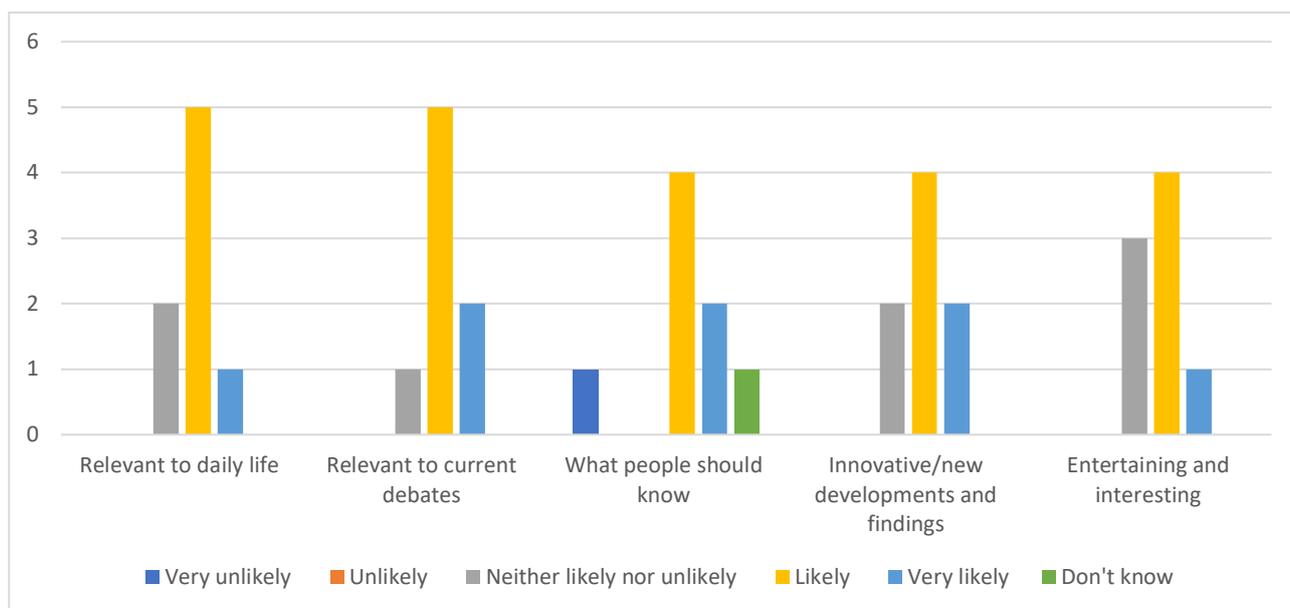


Figure 31: The criteria used by the research unit when deciding what research results to communicate with non-specialist audiences.

Being aware of the importance that the public holds for the geosciences, when queried about **media coverage** (Figure 32), all respondents agree to a certain extent on the fact that media should give attention to the research conducted at their institution and that is their task to maintain media relations. Moreover, almost all respondents (7) think that visibility in the media of the research conducted is important. On the other side, statements about journalists are more controversial. One quarter (2) of respondents think that journalists have reported badly about their work, whereas four disagree and two neither agree nor disagree. Half of respondents (4) believe that the research they do is of little interest for journalists, two of them neither agree nor disagree, and two think that journalists are instead interested.

These findings are coherent with the crucial role that geoscientists hold within society. Surely the media interest towards geological phenomena, in particular natural disasters (e.g., earthquakes, volcanic eruptions, floods, avalanches) is greater than towards other scientific arguments, since their impact on the population is often very strong<sup>108</sup>. Consequently, the relationship between journalists and scientists, which can be mutually fruitful in peacetime, can become critical after the occurrence of a natural disaster, as it happened when the 2009 L'Aquila earthquake occurred<sup>109110</sup>.

<sup>108</sup> F. F. Martin, S. Peppoloni, *Geoethics in Science Communication: The Relationship between Media and Geoscientists*, in «Annals of Geophysics», n. 60, 2017.

<sup>109</sup> G. Sturloni, *A lesson from L'Aquila: the risks of science (mis)communication*, in «Journal of Science Communication», n. 11, 4 2012, p. E.

<sup>110</sup> M. Cocco *et al.*, *The L'Aquila trial*, in «Geological Society, London, Special Publications», n. 419, 1 2015, pp. 43–55.

## 4 Results and Discussion 4.4 Rationales, perceptions and ethos

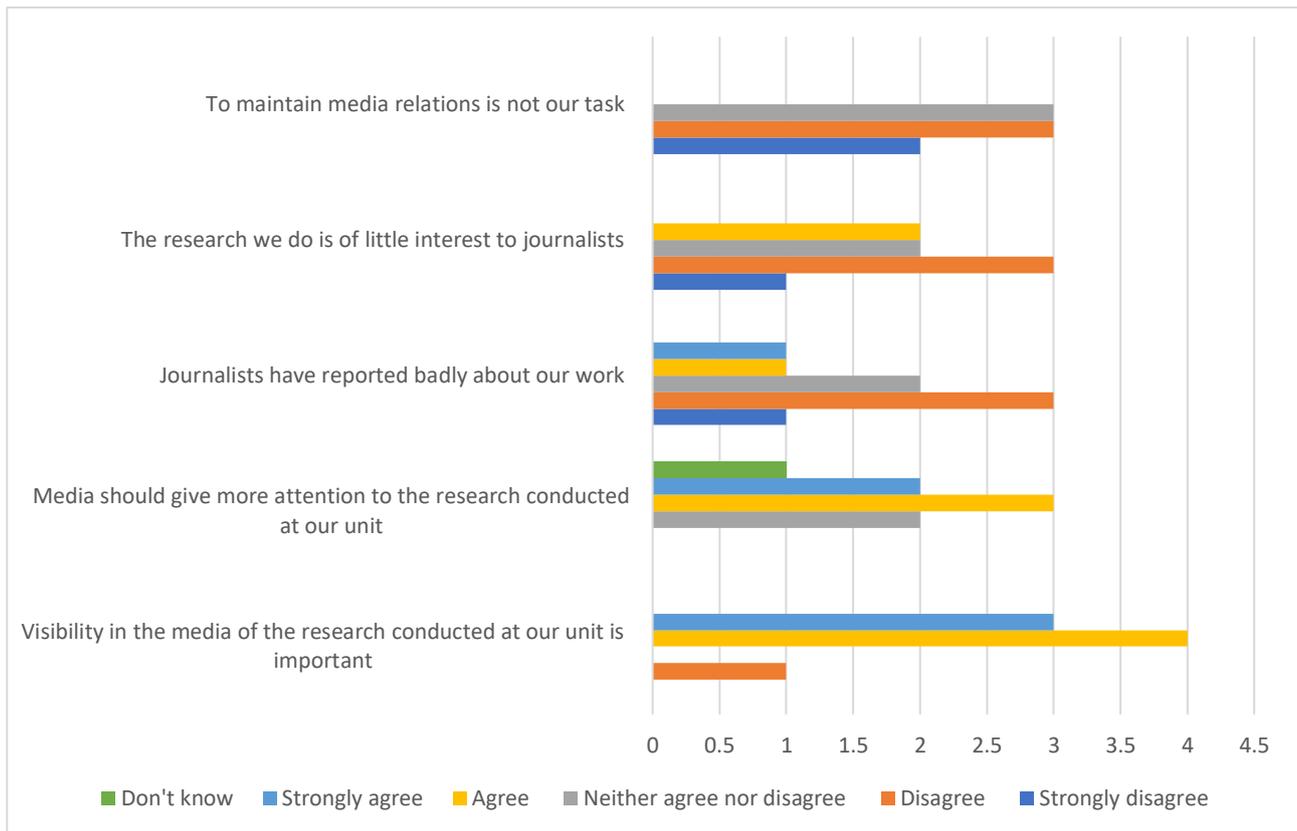


Figure 32: Degree of agreement with statements concerning media coverage of the research conducted at the research unit.

When questioned about the **public** (Figure 33), almost all respondents agree on the fact that the public is eager to learn about science (7) and state that their research unit communicate with the public very selectively to avoid trouble (6). Most respondents believe that people want to contribute to science (5) and that if they knew more about their research, they would be more likely to support it (7). Overall, respondents do not believe that the public is not interested in the research conducted at their unit, or only interested in a limited range of research topics, such as dinosaurs and disasters, and therefore expect that a large amount of people might potentially be interested in what they do. However, many respondents think that the public needs to be educated by those who are knowledgeable (6) and that it needs to be scientifically literate to discuss the implications of their research (4). In fact, when it comes to the involvement of the public in the research field, most respondents (5) declare that they would not like the public to become more actively involved in decisions about the research conducted at their department. In particular, six of them say that they would like the public to become more involved in discussing the implications of the research they do, but not necessarily in decisions about their research directions. Lastly, most respondents (5) are quite doubtful about the trust that citizens have in science and scientists.

## 4 Results and Discussion 4.4 Rationales, perceptions and ethos

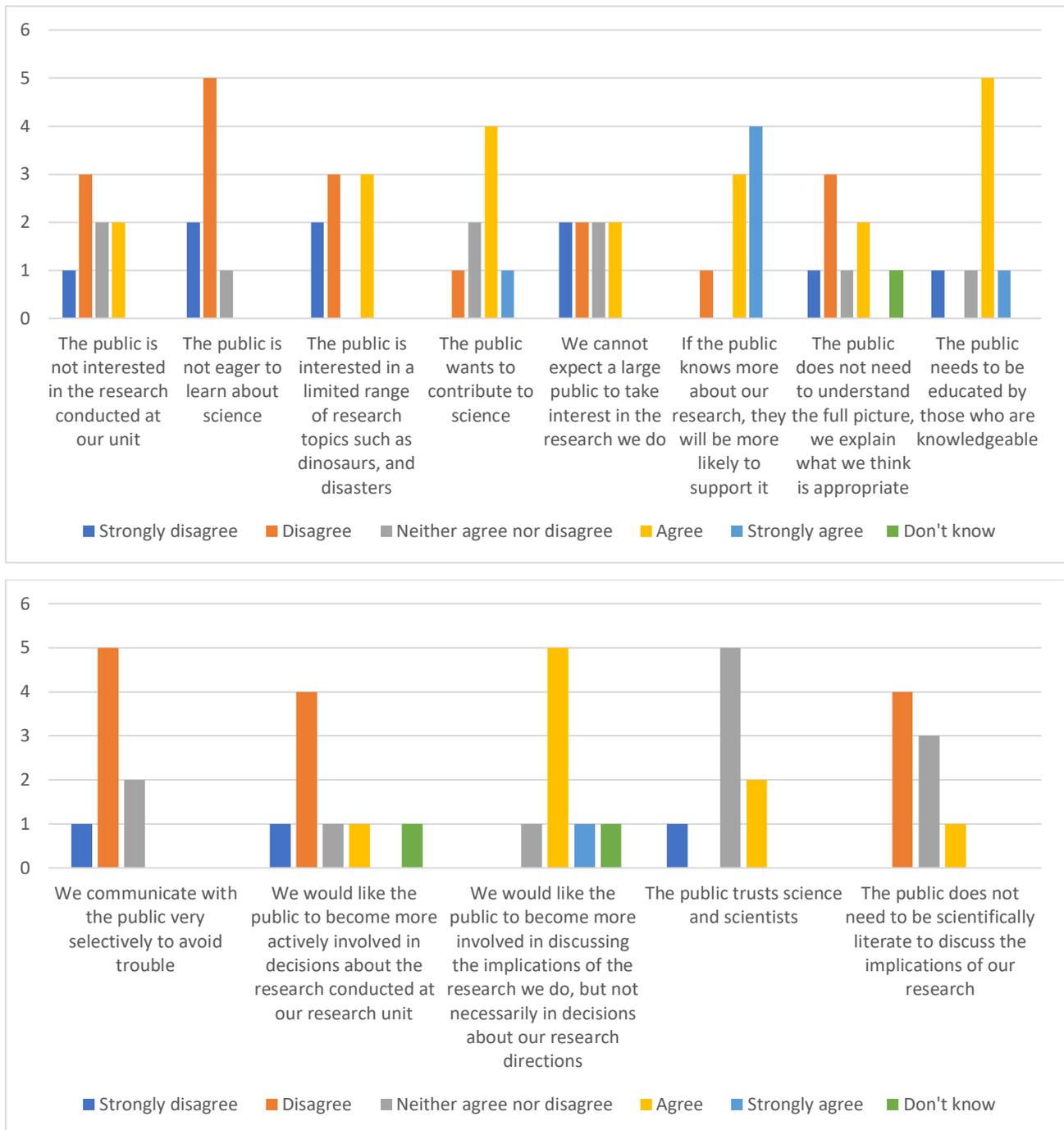


Figure 33: Degree of agreement with statements about the public.

Although the scenario depicted by this set of answers appears very much like a deficit model approach, Professor Pellegrini warns that this might be a pitfall:

*A radical deficit model attitude is certainly negative, but the fact that researchers do not want to involve the public in their research directions might not be so deplorable. Decision-making processes are very delicate and demanding; if you don't know how to handle them is best to be cautious and opt for intermediate solutions.*

### 4.5 General info on RIs/Respondents

At last, I asked a few questions about the people who compiled the questionnaire.

Most **respondents** (6) are researchers, one of them is part of the communication staff, and one of them is Head of the Institute (Figure 34).

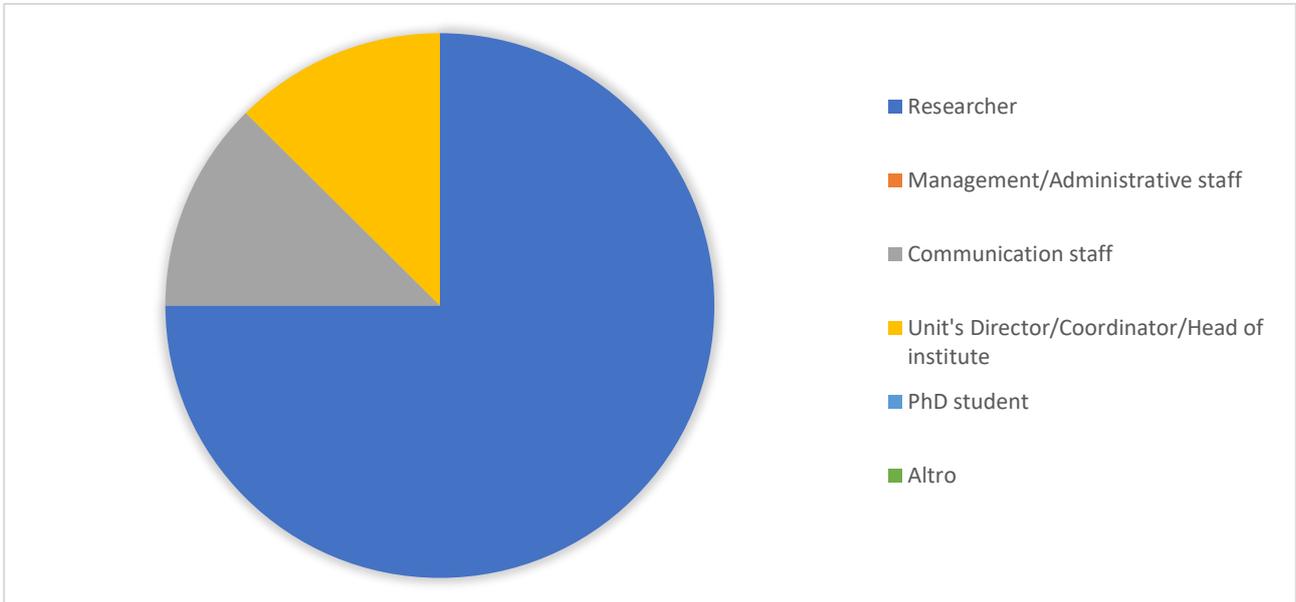


Figure 34: The job title of the respondent.

When asked about how many **years** they have been working in their role, the answers were quite different (Figure 35). Most of them have been working there for less than 10 years: two of them 5 years, one 4 years, one 1 year and one less than 1 year. On the contrary, the other three respondents have been working in their department for at least 20 years: 20, 25 and 30 year, respectively.

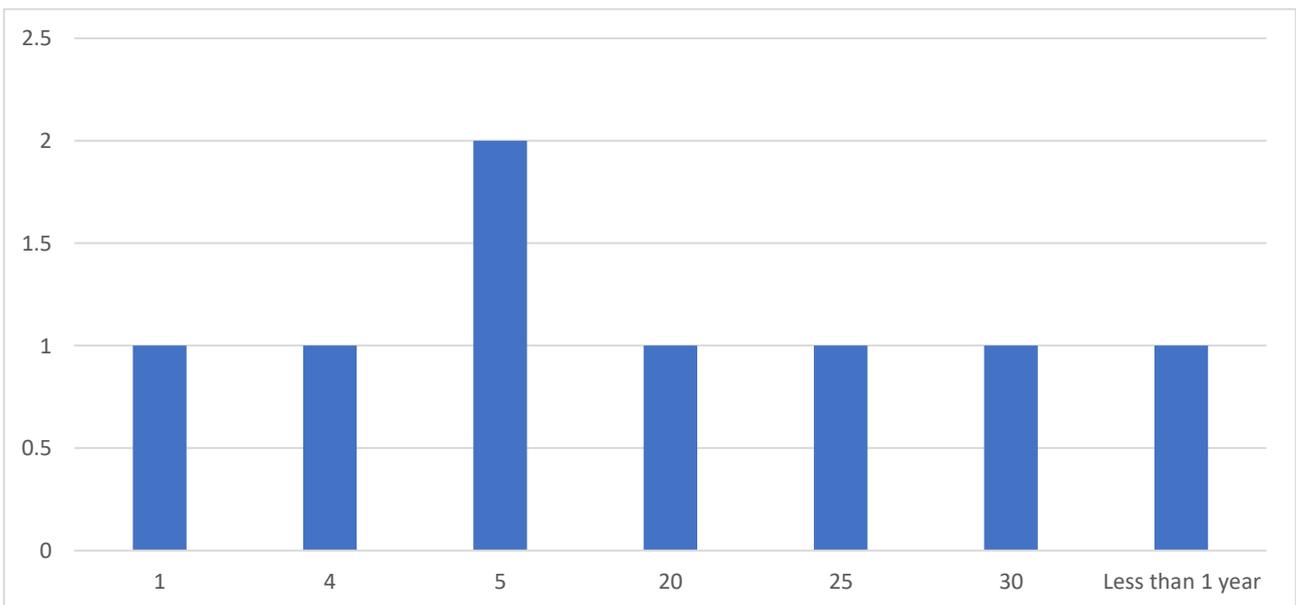


Figure 35: For how many years the respondent has been working in this role.

More than half of the respondents (5) declared to be also part of the **Third Mission Committee** of their department.

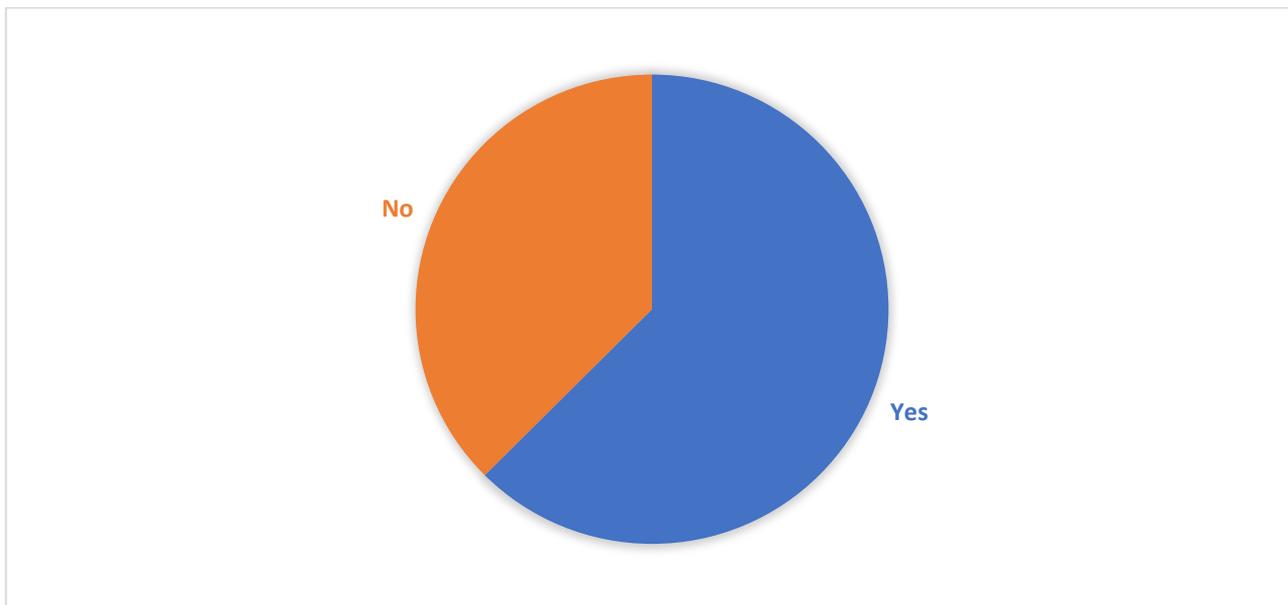


Figure 36: Indication of whether the respondent is a member of the Third Mission Committee of the research unit.

Half of respondents involved in answering this survey completed it by themselves; the other half did it in collaboration with other people from their institution (Figure 37).

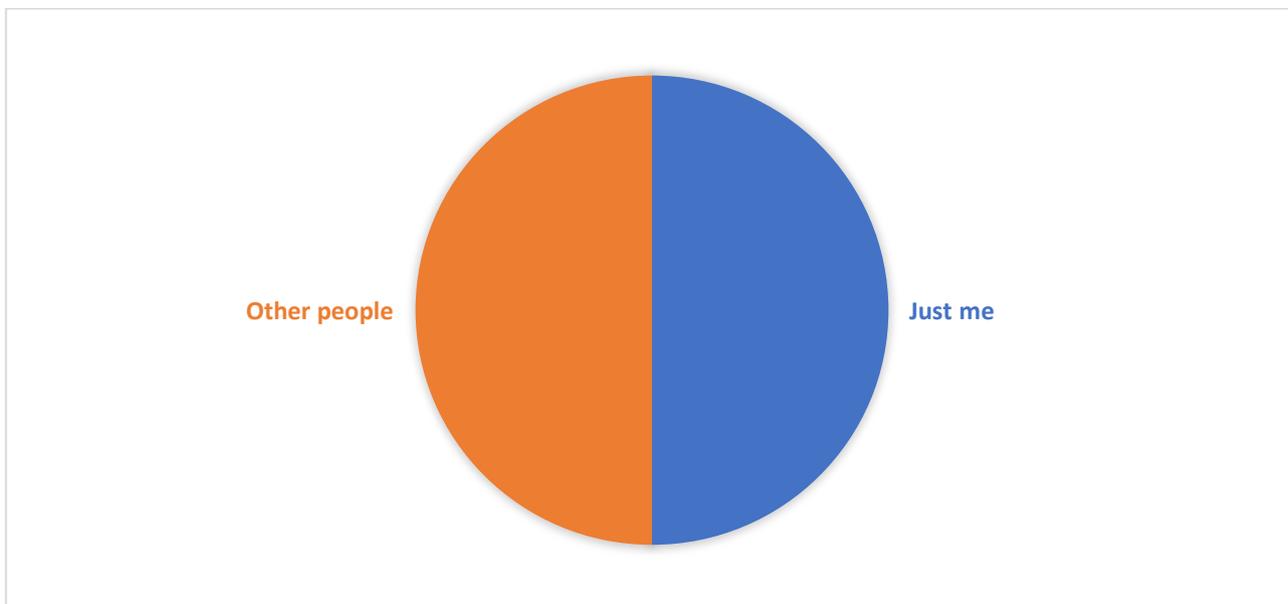


Figure 37: The number of people involved in answering this survey.

In particular, people who contributed to filling out the survey were an associate professor, a person working as communication staff, and three researchers (Figure 38).

## 4 Results and Discussion 4.5 General info on RIs/Respondents

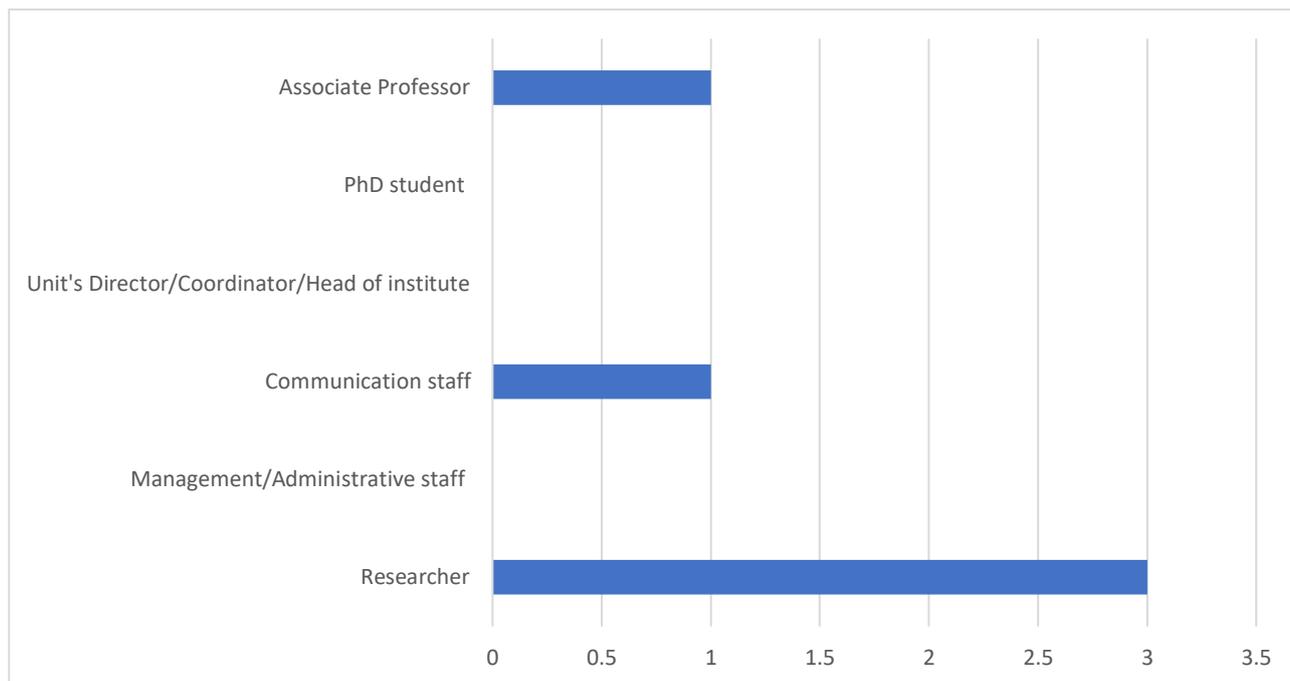


Figure 38: The job title of the people who helped in answering the survey.

Given that most of respondents are researchers active in the Third Mission committee of their departments, we asked Professor Pellegrini whether in his opinion would be useful to train scientists in public engagement, or only rely on science communicators:

*I think both aspects are important, but the most crucial thing is that researchers become aware of the fact that communicating science to a large audience is part of their job. Then they can decide whether doing it by themselves, collaborating with others or asking for help. The latter would be the best option, because when researchers throw themselves into communication without being trained, they make huge mistakes, as we have seen in the last two years as Observa.*

In conclusion, a complementary approach would be the optimum for scientists nowadays: to be trained and become aware that public communication is one of their primary tasks, and, consequently, decide to collaborate with science communicators. To do this, multiple schemes are possible for a department: to equip itself with an internal communication office, to share a communication office with other departments, or to use the communication office of the university/host institution.

## 5 Conclusions

The present thesis has examined the communication activities of the eight Italian Departments of Earth Sciences through two complementary methodological approaches often used in qualitative research: questionnaire and personal interview.

My first observation is that public communication remains far from being fully instituted and taken-for-granted across research institutes. Overall, public events and traditional news media are the most common used formats of public communication by surveyed institutes, and social media network play only a marginal role. These results confirm previous findings<sup>111112113</sup>; however, I observed that the use of new media channels is correlated with a high percentage of active researchers involved in PE, rather than the size<sup>114</sup>. This might be due to social media being a cheap and fast way to reach a large audience; therefore, small departments with less resources have started to exploit these channels to gain more visibility and be more competitive in the university-market.

A second observation concerns variation: variation in communication seems to be associated with institutional commitment to public communication, such as professional communications staff, available funding, and active researchers. These results partly confirm what observed in previous studies, but the budget seems not to play a crucial role like in the reference work<sup>115</sup>. This indicates that the economical factor is not predominant in the Italian context, as Professor Pellegrini confirms:

*It is not just a matter of money, but most of all a matter of culture, of strategies and of a communication plan that only few universities have. To realize this just have a look at universities' websites: we as Observa have visited all 93 Italian universities' websites and by only looking at them you understand everything.*

Thirdly, I found evidence for increasing capacity building and commitment of resources. This is attributed to the increasing demand for public engagement both at the international level, through the European Research Council and the Marie Skłodowska-

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<sup>111</sup> M. Entradas, M. M. Bauer, *Mobilisation for public engagement: Benchmarking the practices of research institutes*, cit.

<sup>112</sup> M. Entradas et al., *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

<sup>113</sup> J. Metag, M. S. Schäfer, *Hochschulen zwischen Social Media-Spezialisten und Online-Verweigerern. Eine Analyse der Online- und Social Media-Kommunikation promotionsberechtigter Hochschulen in Deutschland, Österreich und der Schweiz*, cit.

<sup>114</sup> M. Entradas et al., *Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility?*, cit.

<sup>115</sup> Ibidem.

## 6 Limitations

Curie Actions, and at the national level, with the ANVUR's periodical evaluation.

My data point to a growing national phenomenon and a potential change in the culture of Italian academic institutions to open up their research to unspecific publics at the departmental level. In this regard we should consider, though, that the sample investigated here represents a list of so-called Departments of Excellence, which are those departments that perform better in the ANVUR's periodical evaluations<sup>116</sup>. This is also the reason why these departments remain the only eight, among the 32 Italian Departments of Earth Sciences, to have not been merged to other fields of study. Within this context, it is not surprising that such departments have increased their PE efforts in the last years and plan to keep increasing them in the future, as Professor Pellegrini comments:

*There are many departments which have already invested in strengthening their communication staff with people trained in science communication. It is also the case of some departments surveyed here, which have also won several ERC grants. We should not forget that these universities represent the segment of greater excellence in Italy...*

After all these considerations, I expect the Italian Departments of Earth Sciences to increase their public engagement efforts in the next years, by boosting their commitment in terms of funding and communication staff. Several schemes and levels of organisation will be possible to institutionalize this function. Future research should monitor this evolution by investigating the implications of this professionalisation for science communication and the narratives that emerge from research institutes.

## 6 Limitations

This work represents a spin-off of the cross-country study carried out by Entradas *et al.* in 2020 and focuses only on the eight Departments of Earth Sciences of Italian universities. The limited size of the sample considered in the present thesis allowed me to detect trends and correlations by only cross-checking the answers given to different questions. However, due to the extremely low number of institutes surveyed, it was not possible to conduct a robust statistical analysis and to test for correlations among variables. To check whether findings presented here also occur in other types of research units, and to observe the future evolution of public communication at the departmental level of Italian universities, further investigation is needed.

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<sup>116</sup> *Dipartimenti di eccellenza, Miur - Ministero dell'istruzione - Ministero dell'università e della ricerca*, s.d. <https://www.miur.gov.it/dipartimenti-di-eccellenza> (accessed 02/02/22).

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## Appendix A – Interview

Full transcript of the interview held on January 25<sup>th</sup>, 2022, with Prof. Giuseppe Pellegrini, president of *Observe Science in Society* and coauthor of the reference study by Entradas *et al.* (2020).

**Chiara Anzolini:** Professor Pellegrini, secondo lei come mai i dipartimenti che si occupano di scienze naturali hanno come target prediletto le scuole e gli studenti?

**Giuseppe Pellegrini:** Questo è un discorso generale che vale anche per tutti i dipartimenti. Lavorare con le scuole “è un po’ più facile”, nel senso che non richiede un’organizzazione dei format e dei contenuti, delle modalità di comunicazione molto particolari, nel senso che le scuole intanto sei sicuro che quando le inviti vengono, hai dei numeri precisi, c’è l’insegnante che ti fa da interfaccia; quindi, è un’audience favorevole. E si suppone anche che normalmente siano un po’ più preparati, per cui per i ricercatori risulta più semplice “comunicare, trasferire i contenuti”. Questo è un primo elemento. Perché tu capisci che se loro dovessero organizzare Open Day oppure delle cose in cui la comunicazione diventa molto importante, cioè il modo in cui tu trasferisci... Allora lì la cosa si complica perché vuol dire avere capacità, formazione. Infatti, noi come *Observe* da anni studiamo la Notte dei Ricercatori e vediamo quanta fatica si fa a entrare in nuovi format. Tenendo presente che da un lato anche i nuovi format o diversi format hanno delle potenzialità, però vanno “maneggiati con cura” perché spesso vediamo delle cose anche un po’ strane. Faccio un esempio: un format come la “cena scientifica” che anziché essere interpretato come realmente è, come luogo di scambio e di dialogo, molto informale, cosa succede? Che qualcuno va lì e fa la conferenza, per cui come dire si dice “mette vino vecchio in otri nuovi”. Succede, ecco. È chiaro che maneggiare e fare delle attività con le scuole è sicuramente più alla portata di ricercatori che mediamente non hanno una formazione anche in campo di comunicazione, quindi fanno un po’ fatica. E poi c’è anche un altro aspetto molto strumentale, cioè il fatto che nelle scuole ci sono i futuri studenti, per cui c’è anche un aspetto di marketing che non va trascurato.

**Chiara Anzolini:** Per quanto riguarda invece l’interazione con i media tradizionali, ho notato che nei dipartimenti in cui c’è uno staff che ha un training nella comunicazione della scienza pare che ci sia più utilizzo di questi canali. Secondo lei è plausibile?

**Giuseppe Pellegrini:** Se parliamo di media tradizionali sì, diciamo nel campo specifico

anche di geoscienze come altre scienze naturali. Non possiamo però sottovalutare tutto il lavoro che i ricercatori fanno su alcuni social, in particolare Twitter che è il social principe dei ricercatori dove più si comunica, più si fa attività, perché è usato sia dalla stessa comunità scientifica, sia anche per il pubblico di non addetti ai lavori. Quindi questo aspetto qua lo terrei presente. Però è vero, hai ragione, cioè credo che se non c'è qualcuno dedicato, allora si fa più fatica, oppure come abbiamo visto anche in questa indagine molto spesso si esternalizza. Ci è successo anche chiamando i dipartimenti o anche le università: “Ah no guardate qui non abbiamo nessuno, chiamate Giovanna Rossi che ci fa la comunicazione”. Cioè c'è anche questo aspetto, capito? L'outsourcing, ma questo è un altro fenomeno, però va sempre nella direzione di una certa “specializzazione”, ecco. Poi il discorso è un po' più ampio nel senso che alcuni atenei o dipartimenti hanno una strategia di comunicazione, altri non ce l'hanno affatto. Cioè costruiscono dei piani di comunicazione chiari, coerenti, credibili, altri meno o addirittura non lo fanno. Per esempio, abbiamo visto questi due anni di pandemia che razza di circo mediatico e successo. Per noi è stata la manna dal cielo studiare questa roba perché tu hai visto chiaramente che pochi atenei si sono mossi con coerenza anche aiutando i propri ricercatori, eccetera. Io cito sempre il caso di Mantovani che è l'unico secondo me che è riuscito – e probabilmente è stato seguito e consigliato bene – e ha evitato di entrare nel circo, nel carnaio... Anche questo narcisismo che abbiamo visto insomma, creando una confusione, un'entropia. Beh adesso mi risparmio altri commenti...

**Chiara Anzolini:** A proposito dei nuovi canali, quindi dei new media, i social, voi nel vostro paper avevate visto che i dipartimenti che usavano più i canali tradizionali usavano anche di più i social, però in generale che i social non venivano usati così tanto come voi ve lo aspettavate. Io, invece, nel mio lavoro ho ottenuto un risultato un po' diverso dal vostro, nel senso che io vedo che effettivamente i dipartimenti utilizzano molto i social e non c'è una correlazione con la grandezza del dipartimento. Quindi mi è sembrato di vedere che questa opportunità sia stata colta dai dipartimenti più poveri, cioè che abbiano capito che i social possono essere per loro un mezzo per mettersi in mostra o farsi conoscere ed essere anche loro competitivi con gli altri. Cosa pensa di questo aspetto?

**Giuseppe Pellegrini:** Qua ci sono due, tre variabili da considerare. La prima cosa bisogna saper usare i social. I social non sono tutti uguali. Ci vuole una competenza, mi spiego: Twitter non è Facebook e non è TikTok. Sono molto diversi tra loro. Anche YouTube è un social che va usato con una grande consapevolezza di chi è il target, quali sono gli strumenti che usi, ecc. Quindi intanto c'è questo aspetto qua. Poi è vero, alcuni dipartimenti

sicuramente li usano, ma bisogna chiedersi per fare cosa. Perché se io sono un ricercatore di geoscienze e ho la mia comunità su Twitter e comunico tantissimo usando Twitter e dopo tu mi fai la domanda: “Usate Twitter?” Certo che ti dico che uso Twitter, però magari lo usi nella tua comunità, cioè bisogna vedere l’audience qual è. Per esempio, Instagram è già una cosa più specifica perché è molto più “simile” a Facebook, nel senso in cui uno racconta anche la sua vita, è meno specifico, tecno-scientifico diciamo.

**Chiara Anzolini:** I dipartimenti usano molto Facebook, molto Instagram, e a dire il vero Twitter è usato abbastanza poco. Credo che questo dipenda dal fatto che a livello italiano Twitter non è usato tantissimo. Andassimo negli Stati Uniti l’utilizzo di Twitter sarebbe molto più elevato.

**Giuseppe Pellegrini:** Sì, però, ripeto, dipende perché lo geoscientziato che ha il suo network mondiale – perché oramai tutti i ricercatori hanno un network che è mondiale – usa Twitter. Certo, è una quota piccola... Se invece la domanda era “Come comunicate con il pubblico di non esperti?” Allora certo, Twitter è poca cosa perché non viene usato Twitter normalmente. Quindi è giusto, cioè il dato corrisponde da questo punto di vista. Si usano altri social più pop.

**Chiara Anzolini:** Poi alla domanda su “I contatti coi giornalisti come avvengono?” la maggior parte dei rispondenti dice che i contatti avvengono direttamente al ricercatore. E immagino che questo sia dovuto anche al fatto che spesso non c’è un ufficio di comunicazione. I rispondenti al questionario dicono che secondo loro avere dei contatti coi giornalisti è importante, ma quasi tutti dicono che non hanno una lista di giornalisti, solo magari dei contatti personali che hanno sviluppato col tempo. Questo dato ci dice che la comunicazione non è ancora ben strutturata all’interno dei dipartimenti?

**Giuseppe Pellegrini:** Sì sì è vero questo. Poi questa è una tradizione tutta italiana perché in altri Paesi hanno i portavoce di dipartimento addirittura. Adesso qualche università si è attrezzata. Ci sono alcuni dipartimenti che hanno proprio un ufficio; hanno anche uno studio di registrazione dentro il dipartimento. Quindi c’è una strategia, cioè un piano di comunicazione e c’è chi parla anche a nome del dipartimento. Perché poi è quello che abbiamo visto in questi due anni: io raramente ho sentito qualcuno che parlasse a nome di una università o di un dipartimento e questo la dice lunga sul discorso della strategia. Il rapporto è più fiduciario e sicuramente più personale. Questo è un dato molto nostro perché in altri Paesi non è così, per esempio prendiamo il caso dell’Inghilterra: Il Russell Group è

praticamente la cerchia delle università più prestigiose inglesi e loro hanno un portavoce. È come dire il Carnegie negli Stati Uniti. Loro hanno una persona che parla a nome del Russell, che è come dire l'Associazione Industriale Italiana. Cioè cambia la musica insomma... Ecco, facciamo questi paralleli per capire invece come è strutturato... Più fiduciario e più personale, con tutti i limiti e i pregi di questo chiaramente.

**Chiara Anzolini:** La maggior parte dei Dipartimenti di Geoscienze qua in Italia non ha uno staff dedicato alla comunicazione. Cioè sono i ricercatori stessi, che spesso sono quelli che fanno parte della Commissione per la Terza Missione, che si occupano di gestire i social media o comunque questo aspetto in generale. Secondo lei questo è dovuto al fatto che i dipartimenti non vogliono spendere risorse per dotarsi di personale specifico – quindi è un problema di budget – oppure non pensano che per fare questo tipo di comunicazione serva una preparazione specifica?

**Giuseppe Pellegrini:** È una questione complessa. Da un lato solo negli ultimi anni si è capito l'importanza di comunicare e comunicare bene in modo organizzato. Questo lo puoi fare in vari modi. Lo puoi fare a livello di ateneo organizzandoti, tipo appunto costruisci uno studio di registrazione che sta in un dipartimento, ad esempio, che serve a tutti i dipartimenti. In Italia pochissimi fanno così. Normalmente è il rettore che ha una persona che comunica con lui, eccetera. Altra cosa invece è costruire una comunicazione più strutturata e al momento non credo che sia solo una questione economica, è una questione di cultura comunicativa. Posto che è importante comunicare col grande pubblico, i non esperti, l'hanno capito un po' tutti. Adesso col movimento della Terza Missione un po' di più. Poi bisogna strutturarsi e, ripeto, non è solo una questione economica, è una questione di cultura, di strategie e di costruire un piano di attività che ancora poche università di fatto hanno. Basta guardare i siti. Noi facendo questo lavoro qui le nostre 93 università italiane le abbiamo guardate tutte, e tu basta che guardi i siti e li capisci tutto. Ecco penso che valga anche per geoscienze. Poi fra l'altro geoscienze è interessante: guarda quanti ERC sono stati presi in questi dipartimenti, vedi subito. E allora lì ti rendi conto del peso che hanno anche questi dipartimenti. Allora diciamo così: io adesso parlo dell'esperienza che ho visto di Ca' Foscari Venezia. Ad esempio, loro hanno – quando c'era Carraro che aveva una grande sensibilità comunicativa – avevano costruito un piano di comunicazione. Anche noi abbiamo fatto della formazione per loro. E avevano qualcuno che curava questo aspetto e quindi faceva lo scouting all'interno dei dipartimenti per trovare le storie giuste e comunicare in maniera corretta. Un'università non troppo grande perché non è Roma La Sapienza, eran riusciti a

fare una serie di mosse interessanti. Questo tipo di percorso non lo fanno in tanti – men che meno i dipartimenti – perché da un lato noi in Italia abbiamo avuto la cosiddetta dipartimentizzazione, cioè la Legge Gelmini che ha assegnato una notevole forza ai dipartimenti, quindi molti dipartimenti si muovono autonomamente anche sulla comunicazione.

**Chiara Anzolini:** Capisco che i dipartimenti siano ormai molto autonomi. Ma questa autonomia però potrebbe anche esplicitarsi nel dotarsi, semmai, dell'ufficio di comunicazione. Quindi, il fatto di non farlo è perché non hanno soldi o perché pensano che non gli serva?

**Giuseppe Pellegrini:** Ci sono vari motivi e la domanda principe è “Perché dovrei farlo?”. Che cos'è che fa andare avanti i miei ricercatori? Le pubblicazioni scientifiche, non certo il public engagement. Con la Terza Missione ci sono gli indicatori. L'ANVUR sta incominciando a far entrare anche questi elementi di valutazione e questa cosa del public engagement – e anche qui con i rischi perché diventerà sicuramente un po' strumentale – incomincia a essere un incentivo e allora lo stesso dipartimento ti può aiutare e incentivare a comunicare. Quindi non è solo una questione di soldi. È che nella cassetta degli attrezzi di un buon ricercatore non può esserci solo il fatto di scrivere su Nature, ma anche la capacità di raccontare bene il suo lavoro, ma non solo, ma raccontarlo a chi non ne sa nulla del tuo lavoro. Perché ai tuoi pari siamo capaci tutti, è il tuo mestiere, ma quando devi raccontarlo a chi non è esperto, allora lì cambia il discorso e sicuramente tu da solo non ce la farai mai. Hai bisogno di qualcuno che ti aiuti e avanti di questo passo. Quindi di una strutturazione, diventa una funzione, si dice, dipartimentale.

**Chiara Anzolini:** Ci aspettiamo quindi che da adesso in poi i dipartimenti potenzino questa loro parte, che saranno sempre di più quelli ad avere un ufficio di comunicazione?

**Giuseppe Pellegrini:** Certo, ma bisogna anche capire come uno si organizza, perché non è detto che questa funzione sia per forza solo inserita nel dipartimento. Perché c'è anche un discorso di livelli. Infatti, questo è il cosiddetto livello meso, che è il livello dipartimentale. Lo si può fare sia a livello di singolo dipartimento, ma anche in collaborazione con un livello di ateneo. Sicuramente andando avanti vedremo delle evoluzioni.

**Chiara Anzolini:** Per quanto riguarda invece il fatto di avere una policy di comunicazione e dei fondi dedicati, la maggior parte dei dipartimenti dice di non avere una policy e di devolvere meno dell'1% del budget al public engagement. Tuttavia, la maggior parte dei

rispondenti dice anche che secondo loro ci dovrebbero essere più risorse dedicate al public engagement. Ci aspettiamo che col tempo questa percentuale aumenti?

**Giuseppe Pellegrini:** Io credo di sì, credo proprio di sì, anche perché oramai questo è un trend internazionale, che dopo un classico dei ricercatori è che quando vanno ai convegni all'estero, vanno in giro – adesso un po' meno purtroppo col Covid – ma vedono delle cose e si rendono conto che le devono fare anche in Italia. Quindi secondo me questo è un trend.

**Chiara Anzolini:** Poi alla domanda “Secondo te quanta percentuale del budget di dipartimento dovrebbe essere allocata al public engagement?” rispondono tutti cose un po' diverse. È perché i ricercatori non hanno una percezione chiara di quanto dovrebbe essere il budget dedicato a questo aspetto?

**Giuseppe Pellegrini:** Questo sicuramente. Sicuramente il fatto che ci sia tutta questa dispersione la dice lunga. Vuol dire che non c'è una contezza, non si sa perché probabilmente anche a livello di dipartimento non è mai stata fatta una riflessione. Si fanno le riunioni di dipartimento... Quando c'è una riunione di dipartimento sarebbe interessante vedere se nell'Ordine del Giorno di un anno ne hanno mai parlato, perché se se ne parla tu vivi l'ordine di grandezza e anche eventuali budget e idee... Quindi questo è sicuramente un motivo. Tengo a precisare che poi seguendo il ragionamento di prima non è detto che il dipartimento si muova da solo, con proprie risorse, ecc. Può benissimo collaborare con altri, per esempio geoscienze è molto vicino ad altri dipartimenti. Se penso a Padova, insomma, dove è eccellente geoscienze, infatti hanno gli ERC. Quindi diciamo che però sicuramente non si è ancora entrati in quest'ordine di idee di quantificare eccetera, e questo dato mi sembra abbastanza chiaro.

**Chiara Anzolini:** Invece alla domanda “Quali sono le tre ragioni più importanti che spingono il dipartimento a fare public engagement?” non c'è “attrarre finanziamenti”. È dovuto al fatto che in Italia il finanziamento è ancora molto pubblico, quindi nessuno si pone il problema di attrarre finanziamenti?

**Giuseppe Pellegrini:** Certo, in Italia è tutto pubblico. Anzi, c'è la doppia morale, perché in realtà qual è il vero tema? Che i finanziamenti sono soldi nostri, sono soldi pubblici. Allora la mission è quella di rispondere a un mandato istituzionale. Infatti, al contrario di altri Paesi – e questo è stato evidente anche tra di noi nel gruppo di lavoro – come Inghilterra e Stati Uniti, che sono più market-oriented, l'ethos è completamente diverso. Qui l'ethos è di tipo

istituzionale; magari alle volte un po' nascosto, perché in realtà c'è anche questa cosa della ricerca fondi, però si ha un po' paura di dirlo perché è come dire... Noi in fondo non siamo degli imprenditori... Quando in realtà c'è anche questo, perché tantissimi dipartimenti hanno conto terzi, contratti, attirano risorse, eccetera, quindi anche su questo ci sarebbe da dire molto. Però sicuramente la nostra è una università più istituzionale in cui si risponde a una politica pubblica di istruzione e ricerca.

**Chiara Anzolini:** I rispondenti dicono che secondo loro il pubblico è interessato alla ricerca e vuole contribuire alla scienza che i dipartimenti fanno, e pensano che se il pubblico sapesse di più sulla ricerca la supporterebbe anche maggiormente. Poi però danno delle risposte che fanno intravedere un bel deficit model, nel senso che loro sostengono quasi a maggioranza che il pubblico dovrebbe essere educato da chi ne sa perché solo chi è scientificamente letterato può discutere le implicazioni della ricerca. E infine dicono che loro vorrebbero discutere col pubblico delle implicazioni della loro ricerca, però non vorrebbero mai coinvolgerli nelle decisioni e nella direzione di ricerca del dipartimento. Secondo lei questo è dovuto al fatto che la maggior parte dei rispondenti sono ricercatori, quindi non persone che si occupano di comunicazione della scienza? E cosa pensa che ci dica questo sulla percezione che i ricercatori hanno del loro ruolo nella società?

**Giuseppe Pellegrini:** Diciamo da un punto di vista così di primo acchito uno dice “Vabbè, questa è la classica situazione di deficit model”, però attenzione che anche qui si nascondono delle insidie. Cioè il fatto che i ricercatori dicano “Noi riteniamo che sia importante coinvolgere il pubblico e comunque le decisioni spettano a noi” non è in sé una cosa deprecabile, anche perché coinvolgere il pubblico anche in processi decisionali è molto impegnativo e bisogna saperlo fare. Quindi, ripeto, preferisco una certa cautela che non magari voler essere molto engaging ottenendo l'effetto contrario. Diciamo che ci possono essere diversi livelli. Certo, l'atteggiamento radicale di deficit model è sicuramente controproducente e questo lo dicono un sacco di studi. Ci possono essere delle soluzioni intermedie in cui c'è un'apertura e ci sono meccanismi di ascolto. Poi passare ai processi decisionali è una cosa molto delicata, impegnativa, quindi, ecco, non mi sentirei di bocciare i ricercatori dicendo “Ah sì... Sono i soliti che pensano che la gente è ignorante, ecc.” Non è proprio così. Sicuramente c'è anche chi la pensa così e noi sappiamo... Però sicuramente dai ricercatori era lecito aspettarsi un tipo di risposta di questo tipo. Tieni presente che qua, se parliamo di geoscienze, parliamo di cose anche molto concrete. Di gente che scrive progetti europei e che quindi nei progetti europei si trova a scrivere dei WP di

coinvolgimento, per cui devono fare i conti con queste cose. Cioè se tu lavori sugli argini, sulle inondazioni, la Citizen Science la devi saper maneggiare, non puoi ignorarla, sennò non scrivi neanche una riga di un progetto europeo. Quindi questa gente qui sicuramente secondo me è anche dentro a questo dibattito, e allora in questa grammatica loro sanno benissimo che non è possibile pensare di fare geoscienze senza il coinvolgimento del pubblico. Ecco, bisogna mettere anche questo in conto.

**Chiara Anzolini:** Secondo lei i ricercatori dovrebbero ricevere un minimo di formazione sui rapporti tra scienza e società, o semplicemente della comunicazione della scienza dovrebbero occuparsi i divulgatori scientifici?

**Giuseppe Pellegrini:** Io trovo che siano entrambi importanti, ma la vera questione è che per un ricercatore dev'essere importante sapere che comunicare la scienza anche a un vasto pubblico fa parte del proprio lavoro. Poi uno lo può fare facendosi aiutare, lavorando con altri, e questa sarebbe la cosa migliore, perché come abbiamo visto appunto in questi due anni, se tu ti butti così, all'arrembaggio, senza un minimo di preparazione... Entrambe le cose sono importanti: avere una preparazione, sapere che oggi è impossibile lavorare senza pensare alla comunicazione e collaborare con comunicatori della scienza, assolutamente. Poi possono essere interni al dipartimento, in ateneo, esterni, però bisogna fare i conti con questo mondo della comunicazione, bisogna sapersi muovere e anche farsi consigliare.

**Chiara Anzolini:** Ultima domanda. Secondo lei che i dipartimenti abbiano dello staff dedicato, magari anche con un background sulla disciplina, sarebbe un valore aggiunto?

**Giuseppe Pellegrini:** Sì, assolutamente, ma infatti ci sono i dipartimenti che hanno lo staff, che hanno investito in questi anni. Quindi c'è da stupirsi chi non ce l'ha. Dopo... Ci sono tanti motivi per cui uno magari non ha questo, però credo che sia una strada sempre da percorrere. Poi ci possono essere tante situazioni, perché sai, 93 università, tu hai università di tutti i tipi: dalle più internazionali, molto competitive, altre che fanno fatica. A parte che qui stiamo parlando del segmento di maggiore eccellenza in Italia, cioè penso anche che siano tutti dipartimenti di eccellenza, perché io li conosco, sono 110 i dipartimenti di eccellenza in Italia. Più o meno... Padova sicuramente, anche Milano e Torino, credo anche gli altri, quindi già questo ti dà l'idea insomma.

## **Appendix B – Questionnaire**

Questions and answers of the questionnaire distributed to the surveyed Departments of Earth Sciences on October 18<sup>th</sup>, 2021.

# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

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\*Campo obbligatorio

Communication  
activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.





3. Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

*Contrassegna solo un ovale per riga.*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TikTok	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

4. In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

*Contrassegna solo un ovale per riga.*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>					
Schools	<input type="radio"/>					
Students outside teaching	<input type="radio"/>					
Members of local municipalities/councils/associations	<input type="radio"/>					
Delegates from industry	<input type="radio"/>					
Governments/politicians/policy-makers	<input type="radio"/>					
Non-governmental organisations (NGOs)	<input type="radio"/>					
Media and journalists	<input type="radio"/>					

Now we would like to ask you a few questions about the relations of your research unit with the media.

5. How many times has your research unit received media/journalists enquiries in the last 12 months?

*Contrassegna solo un ovale.*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

6. Does your research unit maintain a list of journalists and media contacts? \*

*Contrassegna solo un ovale.*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

7. When journalists and the media want to contact researchers at your research unit how do they proceed? \*

*Contrassegna solo un ovale.*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

8. Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

*Contrassegna solo un ovale.*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

9. Thinking about the resources your research unit devotes to public engagement (funding, staff, etc) do you think that your research unit: \*

*Contrassegna solo un ovale.*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

10. How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

*Contrassegna solo un ovale.*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

11. Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

*Contrassegna solo un ovale.*

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

12. Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

*Contrassegna solo un ovale.*

Exclusively

Partly

13. Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

*Contrassegna solo un ovale.*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

14. Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

*Contrassegna solo un ovale.*

Sciences

Communication

Humanities

No university degree

Don't know

15. Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

*Contrassegna solo un ovale.*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

16. For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

*Contrassegna solo un ovale.*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

17. Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was creat

*Contrassegna solo un ovale.*

- Decreased
- Stayed the same
- Increased
- Don't know



19. Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries the 'communication staff'. \*

*Contrassegna solo un ovale.*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

20. Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

*Contrassegna solo un ovale.*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

21. Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

*Contrassegna solo un ovale per riga.*

	False	True	Don't know
We have a public engagement policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

\_\_\_\_\_

23. Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

*Contrassegna solo un ovale.*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

24. For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

*Contrassegna solo un ovale per riga.*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not perceive public engagement as their everyday work/responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They think the public is not interested in the research they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not perceive public engagement as contributing to the progress of their careers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They feel they are not good at it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not rewarded for their public engagement work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

*Contrassegna solo un ovale.*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- >10%
- Don't know







30. The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

*Contrassegna solo un ovale per riga.*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public does not need to be scientifically literate to discuss the implications of our research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

General info on  
RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

31. Which of the following most closely matches your job title? \*

*Contrassegna solo un ovale.*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: \_\_\_\_\_

32. For how many years have you been working in this role? \*

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33. Are you a member of the Third Mission Committee of your research unit? \*

*Contrassegna solo un ovale.*

Yes

No

34. How many people were involved in answering this survey? \*

*Contrassegna solo un ovale.*

Just me

Me and other people

Other people

35. Which of the following most closely matches the job titles of the people who helped you answer the survey? Pick all relevant. \*

*Seleziona tutte le voci applicabili.*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro:  \_\_\_\_\_

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# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media and journalists	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

9 .....

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

25 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

7

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

1 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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Google Moduli

# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media and journalists	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

88

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Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

4 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: Associate Professor

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# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

around 75 (Department) .....

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Journalists have reported badly about our work	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

5 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Press releases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Popular books	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

141 .....

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit



The public is not eager to learn about science



The public is interested in a limited range of research topics such as dinosaurs, and disasters



The public wants to contribute to science



We cannot expect a large public to take interest in the research we do



If the public knows more about our research, they will be more likely to support it



The public does not need to understand the full picture, we explain what we think is appropriate



The public needs to be educated by those who are



knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

Less than 1 year .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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Google Moduli

# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Press conferences	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
TikTok	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
YouTube	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

85 .....

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
They do not have time for it	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

20 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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Google Moduli

# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsletters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non- specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

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Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

5 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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# Outreach and public engagement of Italian Departments of Earth Sciences

This study investigates Italian Departments of Earth Sciences' culture of communication with non-specialist audiences, what we call public engagement. Examples of public engagement activities would be maintaining a website/blog/social media for the public, giving public lectures, participating in public debates, conducting activities for schools, responding to media enquiries, preparing policy papers for decision-makers, and so on.

We will ask you questions about your Department/research unit, the resources available for public engagement, and the public engagement activities that your Department/research unit organises/participates.

The questionnaire should be completed by a person who is familiar with the Department/research unit, preferably someone involved in the public engagement tasks; completion should take no longer than 15 minutes. You can also interrupt the survey at any time and return later, your answers will be saved.

The deadline for completion is 24 October 2021.

We thank you very much for the time you are taking to complete the questionnaire. Your responses are integral to the success of this study.

Statement of privacy: All responses are strictly confidential.

## Communication activities

We are going to ask you a series of questions about the public engagement activities your research unit participates/organises for non-specialist audiences.

Roughly, how many times does your research unit engage in the following events either as organiser or contributor? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Public lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibitions	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open Days, workshops, guided visits and similar events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Festivals/Science Fairs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Cafes, Pint of Science, and similar formats of public discussions events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fame Lab, European Researchers' Night and similar international events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talks and workshops at primary/secondary schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit engage, produce or use the following channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2-6 times a year)	Monthly (7-20 times a year)	Weekly (> 20 times a year)	Don't know
Interviews for newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the radio	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews for the TV	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other TV (entertainment shows, programs, etc.)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press conferences	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Newsletters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Brochures/leaflets/publications for the non-specialist public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articles in magazines, newspapers for the non-specialist public	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia/videos/films	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular books	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy papers/briefings on policy issues for industry, politicians, policy-makers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Materials for schools (curriculum, textbooks, etc.)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Roughly, how many times does your research unit use the following social media channels to engage with non-specialist audiences? \*

	Never	Annually (once a year or less)	Quarterly (2- 6 times a year)	Monthly (7- 20 times a year)	Weekly (> 20 times a year)	Don't know
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
TikTok	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Audiences addressed

We are going to ask you a series of questions about the audiences your research unit engages with.

In the table below you will find a list of audiences. How often does your research unit/researchers engage with each of them? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
General public (whoever might be interested)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Students outside teaching	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of local municipalities/councils/associations	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delegates from industry	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governments/politicians/policy-makers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental organisations (NGOs)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Media and journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now we would like to ask you a few questions about the relations of your research unit with the media.

How many times has your research unit received media/journalists enquiries in the last 12 months? \*

- Never
- 1 - 2 times
- 3 - 5 times
- 6 - 10 times
- > 10 times
- Don't know

Does your research unit maintain a list of journalists and media contacts? \*

- Yes, we have a list/database of journalists and media contacts
- No, we do not have a list but we have personal contacts
- No, we do not have a list/database of journalists and media contacts
- Don't know

When journalists and the media want to contact researchers at your research unit how do they proceed? \*

- They contact our communication/administrative staff first
- Sometimes they contact our communication/administrative staff first, other times they contact the researchers directly
- They contact the researchers directly
- They contact the university/host institution communication, press office directly
- Don't know

Overall, how successful do you think your public engagement efforts have been in enhancing the activities of your research unit? \*

- Very unsuccessful
- Unsuccessful
- Neither successful nor unsuccessful
- Successful
- Very successful

Thinking about the resources your research unit devotes to public engagement (funding, staff, etc.), do you think that your research unit: \*

- Should devote less resources to public engagement
- Devotes the right amount of resources to public engagement
- Should devote more resources to public engagement

How frequently does your research unit evaluate public engagement activities? We evaluate whatever we are doing... \*

- Never
- Rarely
- Some of the time
- Most of the time
- Always
- Don't Know

### Public engagement resources

In the following, we are interested in the resources available for public engagement at your research unit. In particular, how many people are involved in public engagement tasks and what funding is available for public engagement initiatives.

Does your research unit have specialist staff responsible for public engagement activities? \*

Please consider all employees who carry out public engagement tasks as part of their day-to-day responsibilities. This can include staff responsible for maintaining the website, organising public events, supporting researchers in their public engagement work, producing the newsletter, responding to journalists, etc. For simplicity we will refer to them as 'communication staff'.

- Yes, our research unit has its own communication staff
- No, our research unit does not have communication staff but we have access to communication staff within the institution/organisation
- No, our research unit does not have its own communication staff and we do not have access to other communication staff within the institution/organisation

Please indicate whether the 'communication staff' at your research unit is either exclusively or partly dedicated to public engagement tasks. \*

Please consider only the communication team and not researchers who conduct their own communication activities.

Exclusively

Partly

Still thinking about your 'communication staff', please indicate what type of contracts the staff at your research unit have: \*

A temporary contract for a specific research project

A temporary contract with the research institute or host institution

A permanent contract with the research institute or host institution

Other type of contract

Still thinking about the 'communication staff' at your research unit, please indicate which is their education degree area: \*

Sciences

Communication

Humanities

No university degree

Don't know

Do the 'communication staff' at your research unit have a background and/or training in science communication? \*

- No formal training in science communication
- Attended workshops/short courses in science communication
- Degree related to science communication (post-graduation course, masters or PhD)
- Don't know

For how long has your research unit been carrying out public engagement activities for non-specialist audiences? \*

- Less than 1 year
- Between 1 - 5 years
- Between 5 - 10 years
- More than 10 years
- Don't know

Over the last 5 years, the total number of public engagement activities for non-specialist audiences at your research unit has: \*

If the communication structure at your unit was created less than 5 years ago, please consider the period of time it was created.

- Decreased
- Stayed the same
- Increased
- Don't know

Overall how frequently does the 'communication staff' at your research unit conduct the following? \*

	Never	Rarely	Occasionally	Frequently	Very frequently	Don't know
Decide on public engagement policies with the leadership of the research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create/propose public engagement action plans to the leadership of the research unit	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivate researchers to get involved in public engagement events	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intervene in moments of institutional reputation 'crisis'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compose/edit/print communication materials (press releases, newsletters,	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

leaflets, PowerPoint presentations, etc.)

Compose/edit/stream audiovisual materials (photographs, videos, etc.)

Manage the website and online communication of the research unit (social media channels such as Twitter, Facebook, etc.)

Organize public events (Open days, Science Weeks, talks, workshops, etc.)

Organize/offer communication training for researchers (Public speaking, Media training, etc.)

Assist researchers on planning/completing research grant applications

Please estimate the percentage of the annual budget spent in the last 12 months on the public engagement efforts of your research unit. This can include actions such as maintenance of the website, printing of brochures, organisation of public events, etc. Please do not consider salaries of the 'communication staff'. \*

- None
- < 1%
- 1 - 5%
- 5 - 10%
- > 10%
- Don't Know

Could you please estimate the average research income of your research unit over the last 3 years  $[(2018+2019+2020) / 3]$  \*

- < €100,000
- €100,000 - €250,000
- €250,000 - €500,000
- €500,000 - €1M
- > €1M
- Don't want to answer

Please tell us whether the following statements about the commitment of your research unit to public engagement are true or false: \*

	False	True	Don't know
We have a public engagement policy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have public engagement action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We expect our researchers to be involved in communication with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our communication efforts respond to the national policies on public engagement	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have neither plans nor a policy for public engagement but we nevertheless engage with the public	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How many people work at your research unit? Please consider all researchers, post-doctoral fellows and PhD students; do not count technicians and administrative staff. \*

100 .....

Roughly, what percentage of researchers at your research unit including PhD students, fellows, visitors, and regular research staff, takes part in public engagement activities? This can include activities such as public lectures, activities at schools, European Researchers' Night, Pint of Science, etc. \*

- None
- < 10%
- 10 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 100%
- Don't know

For those researchers at your unit who do not engage in public engagement activities, what do you think is discouraging them to do it? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
They lack institutional support for doing it (e.g. staff, training, funding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
They are not enthusiastic about communicating their work to general audiences	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not have time for it	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They do not						

perceive public engagement as their everyday work/responsibility

They think the public is not interested in the research they do

They do not perceive public engagement as contributing to the progress of their careers

They feel they are not good at it

They are not rewarded for their public engagement work

Lastly, what percentage of your unit's annual budget do you think should be allocated to your public engagement efforts? \*

None

< 1%

1 - 5%

5 - 10%

>10%

Don't know

Now we would like to ask you some questions about your unit's rationales for communication, perceptions of media coverage and the public, and outcomes of public engagement.

What would you say are the three (3) most important reasons for your research unit to undertake communication with non-specialist audiences? \*

- We aim to respond to the policy/mission of our host institution/university
- We aim to respond to the policy of our funding bodies
- We aim to respond to national policies of public engagement
- We want to raise our research profile
- We want to attract funding
- We want to get public support for the research we do
- We want to disseminate our research to the public
- We want to listen and involve the public in our research
- We aim to recruit new generations of scientists
- We aim to attract more students

People look to science for different reasons. Please indicate how likely your research unit is to use the following criteria when deciding what research results to communicate with non-specialist audiences. \*

"We communicate what is..."

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Don't know
Relevant to daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant to current debates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
What people should know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative/new developments and findings	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertaining and interesting	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree with the following statements concerning media coverage of the research conducted at your research unit? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Visibility in the media of the research conducted at our unit is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Media should give more attention to the research conducted at our unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Journalists have reported badly about our work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The research we do is of little interest to journalists	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain media relations is not our task	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
The public is not						

interested in the research conducted at our unit

The public is not eager to learn about science

The public is interested in a limited range of research topics such as dinosaurs, and disasters

The public wants to contribute to science

We cannot expect a large public to take interest in the research we do

If the public knows more about our research, they will be more likely to support it

The public does not need to understand the full picture, we explain what we think is appropriate

The public needs to be educated by those who are

knowledgeable

The following statements express opinions about the public. To what extent do you agree or disagree with each statement? (cont.) \*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
We communicate with the public very selectively to avoid trouble	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more actively involved in decisions about the research conducted at our research unit	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We would like the public to become more involved in discussing the implications of the research we do, but not necessarily in decisions about our research directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The public trusts science and scientists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

The public does not need to be scientifically literate to discuss the implications of our research

### General info on RIs/Respondents

To end the questionnaire, we would like to ask you a few questions about yourself. Please note that all information will be kept confidential.

Which of the following most closely matches your job title? \*

- Researcher
- Management/Administrative staff
- Communication staff
- Unit's Director/Coordinator/Head of institute
- PhD student
- Altro: .....

For how many years have you been working in this role? \*

30 .....

Are you a member of the Third Mission Committee of your research unit? \*

Yes

No

How many people were involved in answering this survey? \*

Just me

Me and other people

Other people

Which of the following most closely matches the job titles of the people who helped you answering the survey? Pick all relevant. \*

Researcher

Management/Administrative staff

Communication staff

Unit's Director/Coordinator/Head of institute

PhD student

Altro: .....

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