EASST/4S 2020 CONFERENCE

Locating and Timing Matters: Significance and agency of STS in emerging worlds

Science as a gatekeeper for trust and collective responsibility in the 'post-truth' era

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CONCISE

Communication role on perception and beliefs of EU Citizens about Science

The CONCISE project

Funding: European Commission, H2020 – SwafS

Duration: December 2018 – November 2020

Coordinator: Carolina Moreno, University of Valencia

Consortium: 5 countries (Italy, Poland, Portugal, Slovakia and Spain,), 9 partners (five academic, two SME, one CSO)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824537".

The CONCISE project: objectives

1. To increase our understanding of how beliefs, perceptions and knowledge of science and technology related issues originate among EU citizens;

2. To review the existing structural obstacles that scientist and other R&I stakeholders, including policy makers, currently face when attempting to communicate science successfully;

3. To evaluate the existing models for teaching science communication to communicators and scientists in Europe;

4. To enable active citizen participation in scientific research process, in line with the concept of responsible research and innovation (RRI), by employing a public consultation methodology;

5. To measure the positive or negative perception of citizens participating in the public consultation on a selection of stories related to science.

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Methodology: public consultation

- Consultations with 100 citizens in each participating country, ensuring a diverse sample
- Discussion of 4 topics: climate change, GMO, vaccines and complementary medicine
- Issues for debate: how citizens perceive science communication, which information sources/channels they use and find more credible, and what suggestions they make to improve scicomm
- Table discussions (qualitative data) + semi-quantitative activity (survey) for each topic

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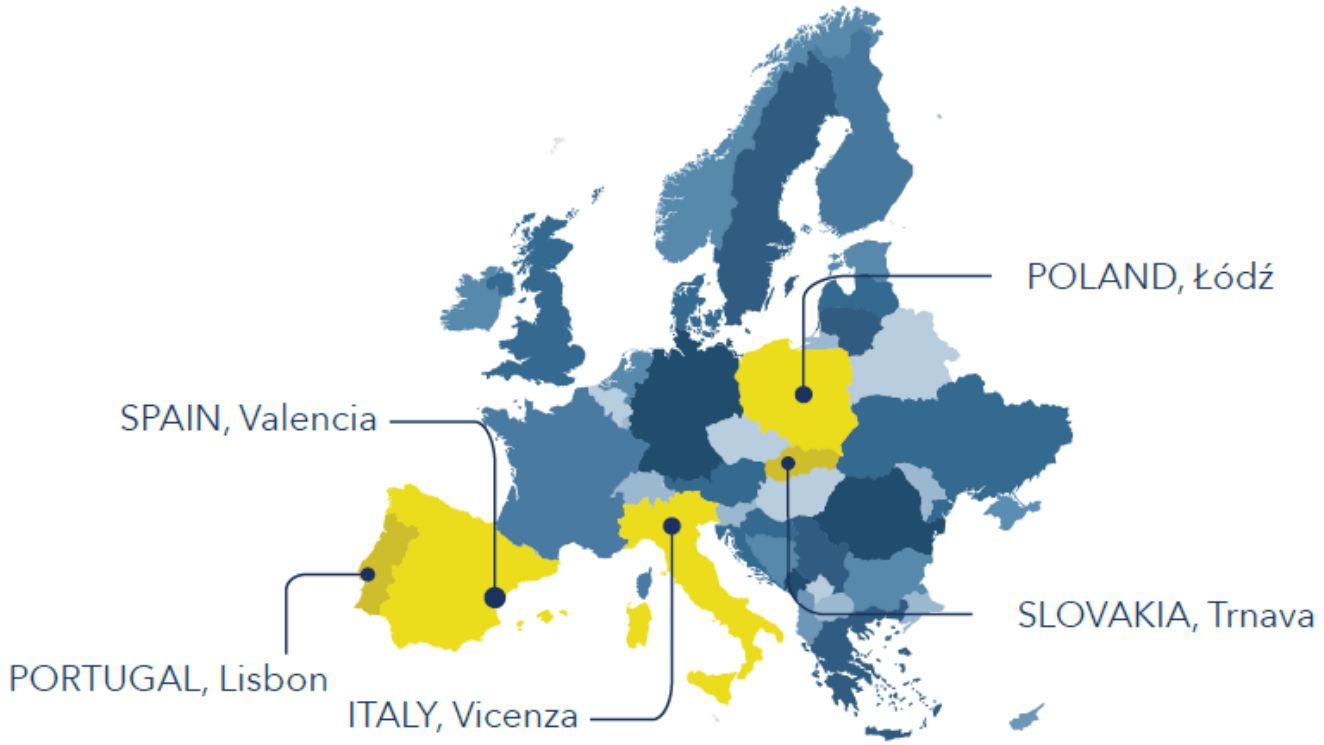
Public Consultations in 5 European countries

September - November 2019

497 TOTAL NUMBER OF PARTICIPANTS IN 5 EU COUNTRIES

FEMALE CITIZENS **289** — 58 %

MALE CITIZENS **206** — 42 %



Goals [vaccines (VAX) and complementary and alternative medicines (CAM) in Portugal]

- (i) understand citizens' perceptions about science and science communication;
- (ii) identify some challenges citizens face when looking for evidence within scientific information;
- (iii) assess the reliability of different sources of information;
- (iv) discuss the role of science in a 'post-truth' environment based on an exploratory analysis.

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Theoretical context

- The growing widespread of misinformation is accelerated by digital platforms, relying on (1) individual-level causes, (2) group and informational cascades, and (3) communication dynamics at the societal level (Scheufele and Krause, 2018)
- 'Post-truth' needs to counter misinformation with facts, science, and the democratization of knowledge (Lockie, 2017)
- The credibility of science is also dependent on the credibility of science communication (Weingart and Guenther, 2016). So, citizens need to value and trust both the scientific process and the process of dissemination of scientific information (Irzik and Kurtulmus, 2019)
- In general, science and scientists have a high degree of trust when compared to other fields/professions (Nisbet and Scheufele, 2009). Nonetheless, recent years showed increasing mistrust in experts (Eyal, 2019). Science mistrust and misperceptions of scientific knowledge stem less from problems of communication and more from the dissemination of misleading and biased information (Iyengar and Massey, 2018).
- Trust and credibility are important to science communication because they affect the degree of attention people pay to scientific experts, as well as whether they believe in scientific findings, or support science-related decisions (Brossard and Nisbet, 2007; Bucchi and Trench, 2014; McCright et al., 2016).

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The paradox of science and technology

Country	1- Science and technology make our lives easier, more comfortable and healthier.	2- Scientific and technological developments can have unforeseen negative side effects that are harmful for human health and the environment.
Italy	7,9	7,8
Poland	6,7	7,5
Portugal	7,6	8,1
Slovakia	7,1	6,0
Spain	8,7	7,8

Individual perceptions (semiquantitative activity)
Scale 1 (totally disagree) to 10 (totally agree)

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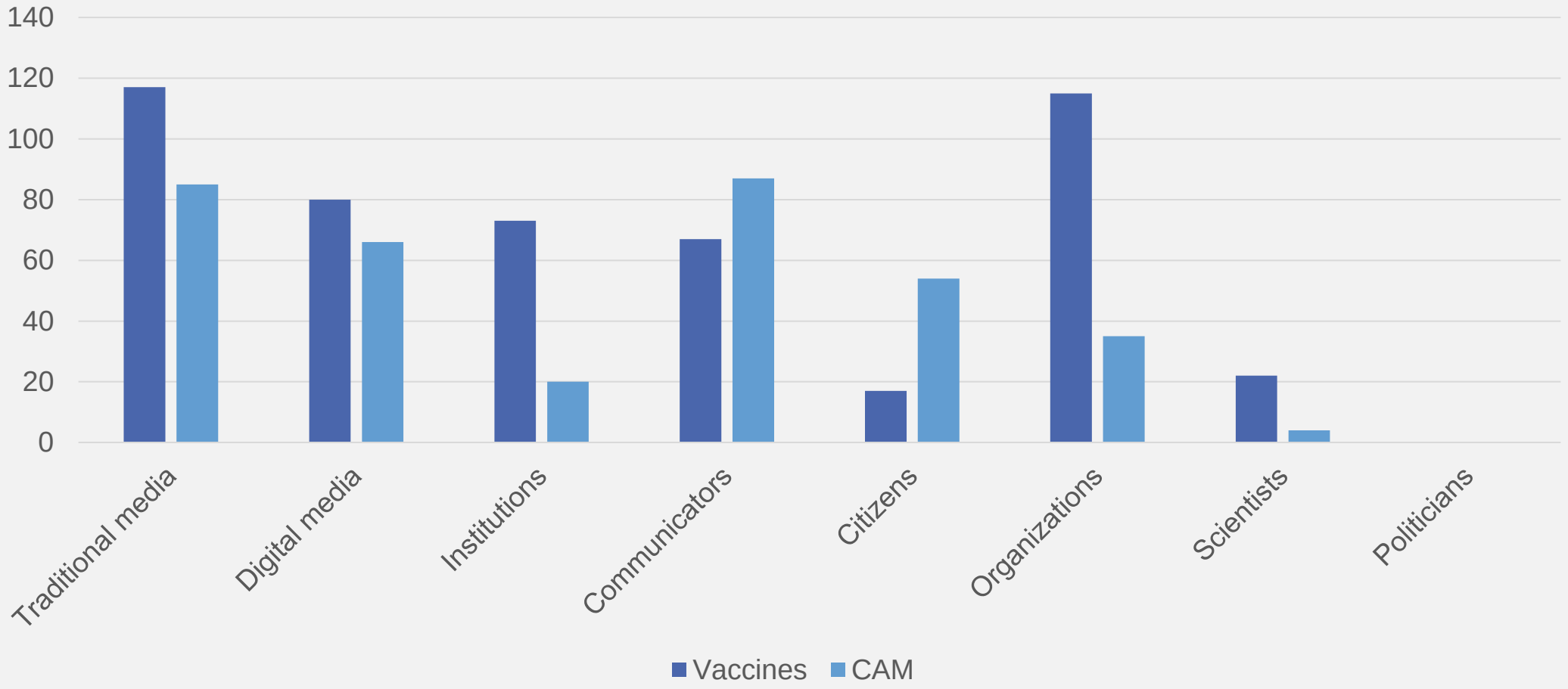
Channels and sources in PT: VAX and CAM



Number of mentions in the consultation transcriptions
Nvivo Analysis

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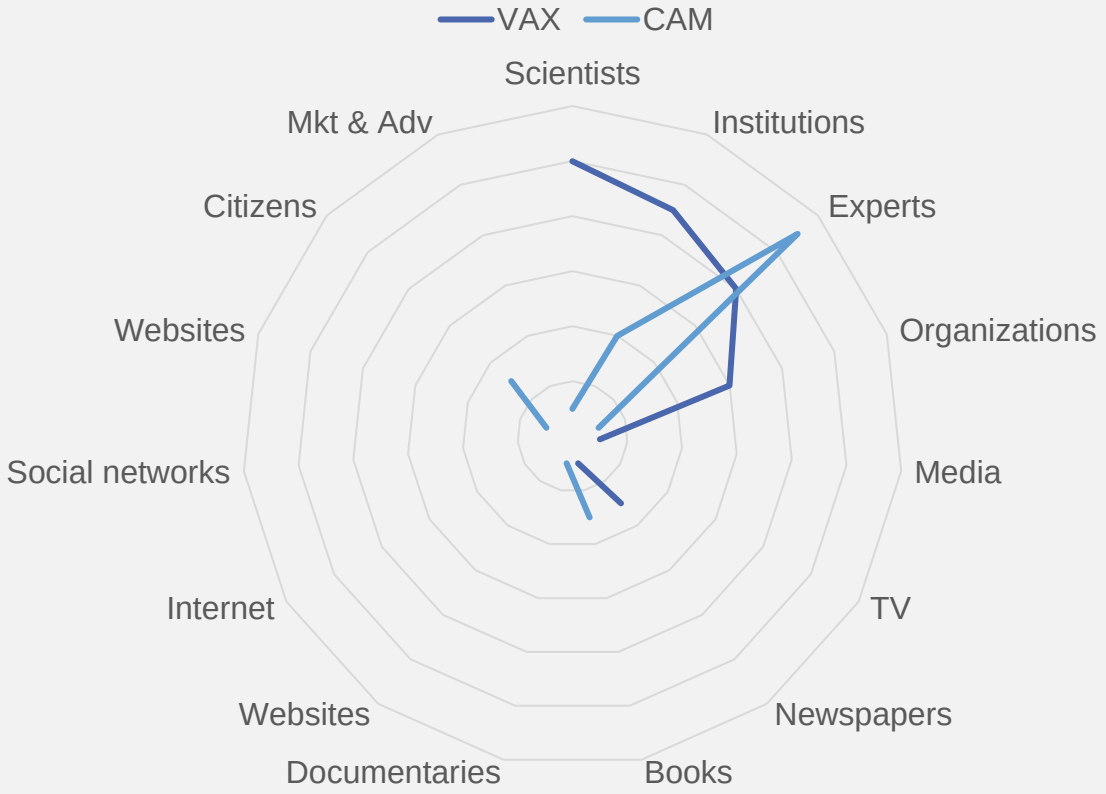
Reliable and unreliable sources in PT: VAX and CAM



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Number of mentions in the consultation transcriptions
Nvivo Analysis

Quality perception: misinformation

We have a problem with social networks as they spread ideas without any basis. So, people that don't want to be vaccinated use that information to avoid vaccination. It is very easy to spread that information and people stick to it even without confirmation. So, our problem is not about anti-vax, but bad information. Mainly on social networks where everyone can post what they want without any control. **(VAX, male, 70, secondary)**

I look for those debates because I like listen to diverse opinions, especially now that we live in a time of fake news, which is a mess… everybody gets confused while searching for reliable information. This demands growing critical thinking in society. Now people cannot trust everything they read, they watch, or they listen to. **(VAX, female, 21, secondary)**

The information we get is fake. That's it. From what I know, it is fake. **(CAM, female, 58, secondary)**

There is a strong resistance because there are fake news. That is common. Only those who study can debunk this problem. **(CAM, female, 43, university)**

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VAX, trust and science

The scientific method is the closest thing we have to trust. It is the most reliable thing we have. I think in science and within the scientific method there can't be diverse opinions. It is not like in certain fields in which we have several opinions. Science is objective and there is not much room to other opinions. **(male, 18, secondary)**

Even though there are some opinions against vaccines, I think they are fundamental. It was something invented by science that solved… even eradicated several diseases. **(female, 73, no formal education, primary, or basic)**

Sometimes I want to clarify a doubt and it is really hard to find reliable information. Because I know reliable information comes from the scientists, the people that are doing research now. But it fails to get to us. **(female, 42, university)**

If there is one thing that is great in science it is vaccination. **(male, 54, secondary)**

I also think science is a system of beliefs. **(male, 71, university)**

What confuses me is the changes in scientific knowledge. It was one way before and then it changes the timeline, the demands… this can create some doubts to us, citizens. **(male, 51, university)**

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CAM, trust and science

This topic is no longer as much as it used to be in the agenda, but remains mediatic creating doubts concerning what is science, and what is not science. And clearly, this field is not science, it is pseudoscience. **(male, 41, university)**

I trust science because it answers showing how the answer was achieved, giving me both proofs and transparency [as opposed to CAM]. **(male, 55, university)**

(...) these practices lack scientific validity. Thus they cannot produce scientific research as in traditional medicine which is based on evidence. So, to me it looks like those following these practices do it more as matter of faith **(female, 56, university)**

Research made in several fields show negative results, I am sorry to say. (...) For instance, homeopathy… it doesn't work, even by its definition. Acupuncture had many issues besides pain relief which is more or less demonstrated, but not by recurring to the base theory for that. **(male, 47, university)**

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The construction of trust: different pathways

Objectivity
More top-down process

Decreases the possibility of misinformation

VAX

- Scientific evidences
- Formal recognition
- Institutional apparatus
- Historical success
- Direct contact with health professionals

CAM

- Direct contact with health professionals
- Positive feedback from others

Intersubjectivity
More horizontal process

Increases the possibility of misinformation

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Challenges concerning scicomm (PT)

To demystify beliefs based on scientific studies that can proof facts and present them clearly to the citizens. And then have a pros and cons debate about the issues. **(VAX, female, 50, university)**

Sometimes through humour or through something playful it is easier to gather people's attention, sending the message that something should be done because of this and that. **(VAX, female, 59, no formal education, primary, or basic)**

[about fighting scepticism] Maybe with more scientific studies. **(CAM, male, 50, secondary)**

But I happen to think that it would be important this level of scientific knowledge from specialized publications… that they could have… all scientific communications have a summary, even going a step forward and have a summary with a language that allows to reach the common person. For the common person, the summary is not the same as for a scientist. It is the common person on the street who rides a bus who must read this information... **(CAM, female, 49, university)**

Many times who reads does not understand what they are reading. Sometimes a more colloquial and common language can get to people more easily. So, some scientific literacy about these issues are important to give some scientific tools and to avoid having people thinking that either everything is bad or believing in everything. **(CAM, female, 25, university)**

Preliminary insights

- Exploratory approach to the data collected as there is an ongoing analysis: recode some fields, quantitative analysis, international comparisons, sociodemographic variations (COVID-19 delay)
- Two health topics: one with several national and international oversight bodies, regulation, organizations, and the other still trying to find its place in the institutional arena (in Portugal)
- Objective construction of trust in VAX (science) and intersubjective in CAM issues (the value of individual experiences)
- Science increases credibility and thus the reliability of sources: scientists as gatekeepers for objective trust in a time of growing widespread of disinformation. This context demands stronger participation of scientists in the public debate and the policymaking. (E.g. the ongoing experience of COVID-19)
- Demands for growing scicomm in both topics, diversifying scientific outputs to reach different social groups considering a more direct, playful, and accessible way of communicating science

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For more information on CONCISE

https://concise-h2020.eu/

https://twitter.com/conciseeu

https://www.facebook.com/ConciseEU/

https://www.youtube.com/channel/UCknvIhikPEzwYpYNohNXM2g

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