

The logo for NANOPINION features the word "NAN" in orange, a stylized grey and white circular graphic with a central orange dot, and the word "PINION" in black. The letter "O" in "PINION" is orange. The entire logo is set against a light blue rectangular background.

Monitoring public opinion on Nanotechnology in Europe

*European Platform on Nano Outreach and Dialogue (NODE)
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D6.1 – Evaluation Strategy Plan

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Authors:	Marschalek ilse, Handler Katherina, Holocher Ertl Teresa, Smoliner Stephanie
Reviewers:	Elisabeth Unterfrauner, Josef Hochgerner (ZSI), Yoel Rothschild (ORT)
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1. Executive summary

The document presents the analytic, conceptual and methodological framework for the monitoring and evaluation activities within work package (WP) 6.

The evaluation concept describes the project objectives and measurement indicators, the challenges that have to be faced during the evaluation, all data collection and data analysis activities and their expected outcomes as final results of this work package.

The monitoring activities of NanOpinion focus on the following aspects:

Firstly, the levels of **knowledge and awareness** on nanotechnologies of the general public, as well as their opinion on nanotechnology and **attitudes** on specific nano-related applications will be evaluated. In this context it aims to monitor **opinion forming** on nanotechnologies and data analysis should give insight on the most **influencing factors**, whereas a closer look will be taken to target groups that have not yet formed their opinion. Differences in knowledge, opinion and attitudes between the socio-demographic groups in terms of age, gender, social background etc. will be investigated as well.

Secondly, the NanOpinion outreach activities via live events and online channels towards the broader public and education institutions will be assessed, coming up with best practice and lessons learned on innovative outreach activities that involve our target groups in an active dialog on nanotechnology.

Assuming, that outreach activities raise interest and activate (the so far not interested) public, and encourage dialogue, the expected outcomes of the monitoring activities is an opinion gathering after different target groups experienced NanOpinion outreach activities through different channels and formats.

The NanOpinion monitoring activities cannot provide representative analysis of people's opinions on nanotechnologies across Europe, but will provide the basic understanding of **opinion forming** on emerging technologies (on which widely no or only little knowledge exists in the general public). The monitoring will also evaluate the effectiveness and impact of outreach activities.

Along the seven objectives set up by the project, the following instruments (described in more detail within this document) will collect input concerning the main questions and measurement indicators:

The core instrument of the monitoring activities, an **online questionnaire**, will be established on the project portal, and will also be accessible via **Monitoring Stations** and Streetlabs and all media channels. Project media partners will also embed the **opinion polls** on their microsites.

Social media and web statistics will be taken into account. Each outreach activity will be evaluated with a short **event evaluation questionnaire**.

Main instrument for the **qualitative assessment** of opinions will be participatory workshops carried out by WP5, which will be implemented in each city in which a Streetlab takes place. In addition observations and reports from the Streetlabs, monitoring stations and school outreach activities will provide input on the effectiveness of the project's live events.



2. Introduction

2.1. *Reminder of the context*

Activities carried out in work package 6 aim to continuously evaluate and monitor the public attitudes and outreach status on nanotechnologies in Europe as well as from the outset of the project, the effectiveness of the actions and impact on target audiences, and to understand the processes, to assess the interventions in terms of mainstreaming potential and sustainability.

The monitoring activities and surveys will be conducted via two methods:

- 1) Quantitative
- 2) Qualitative data collection methods.

Main objective of the work package is to build up monitoring stations activities across Europe to collect and understand consumer's attitudes, analysis of cultural specific attitudes to work out variations between countries.

Attitudes, expectations and opinions are subject to changes caused by intrinsic and external factors. The project is observing the current situation concerning awareness on nanotechnologies and its meaning for different societal groups across Europe. A key aspect will be to conduct comparative opinion polls to monitor public knowledge and attitudes on nanotechnologies.

The evaluation strategy compiles the basic ideas and instruments for monitoring activities to be carried out within this work package. Data collection activities and data analysis will be carried out along the strategy plan.

A system of indicators of how to assess the impact of the activities will be proposed and discussed (see the detailed table starting on page 7).

The relevant questionnaire and survey methodology will be elaborated within this document to provide a unified approach for data collection throughout the project.

This document also includes the conceptual analytical frame to assess and to learn what worked out during the outreach interactions and what did not, and the reasons why.

Outcome of the strategy will be a comparative monitoring report emphasising these processes including the observed strengths and weaknesses.



3. Evaluation concept

The main objectives of the evaluation activities in WP6 are twofold: Firstly, we aim to monitor the attitudes and opinions of European citizens towards NT. In this context evaluation activities will help to collect and understand citizens' opinions, attitudes and knowledge towards NT, also analysing differences between cultures, societal and socio-demographic groups.

Secondly, the project will take the NT debate to the outdoor arena, involving the public and a “hard to reach” audience in a trustworthy and informed dialogue. In this regard WP6 will assess the different models of activity, levels of engagement, problems and obstacles encountered, as well as changes in perception and knowledge as a result of the engagement.

The results from these evaluation activities will on the one hand feed the further improvement of NanOpinion outreach activities and help to continually adapt the conducted dissemination activities to the general publics’ information requirements and needs. But the main outcomes from the assessment are policy recommendations on:

- Future potential and need for NT education
- Future outreach and communication methodologies and tools for sustainable dialogue
- Public expectations regarding research, regulation and social implications (ELSA)

3.1. Objectives and measurement indicators

With these objectives in mind, the project developed a set of quantitative and qualitative monitoring criteria, which are structured along the main objectives of the NanOpinion project. The following table shows an overview of the project objectives, main evaluation questions, involved target groups for evaluation, relevant indicators and evaluation instruments

Questions	Involved stakeholders	Indicators	Evaluation instrument
Objective 1: Take the debate to the outdoor arena, involving the public and a “hard to reach” audience in a trustworthy and informed dialogue			
<ul style="list-style-type: none"> • What are the lessons learned on how to engage and actively involve the public in a NT dialogue? • What are the problems and obstacles encountered and how can they be addressed? • What are the benefits from the outreach activities with regard to changes in perception, knowledge and understanding? 	<ul style="list-style-type: none"> • General public • Hard to reach groups 	<ul style="list-style-type: none"> • Number of engaged public involved in outreach activities • Feedback on outreach activities (e.g. perceived attractiveness, information-quality, understandability) • Suggestions for improvement • Self estimation of respondents concerning changes in knowledge and perception on NT 	<ul style="list-style-type: none"> • Questionnaires distributed continually at outreach events • Streetlab reports



Objective 2: Collect and understand citizens knowledge of NT			
<ul style="list-style-type: none"> • What is the current scientific and NT knowledge of the target groups? • What are the differences in knowledge between cultures, societal groups, socio-demographic groups (age, gender, countries). 	<ul style="list-style-type: none"> • General public • Hard to reach groups • Schools 	<ul style="list-style-type: none"> • Self-assessment on scientific knowledge and knowledge on NT • Capacity to actively discuss about NT based on ones knowledge • Observed and self-reported changes in NT knowledge of involved citizens 	<ul style="list-style-type: none"> • Online questionnaire (online, monitoring stations, ..) • Participatory workshops • Streetlab reports • School reports • E-learning platform pre- and post testing
Objective 3: Collect and understand citizens opinions on NT			
<ul style="list-style-type: none"> • What is the current opinion of European citizens on NT? Do citizens already have an opinion? How secure do they feel on their opinion? • What are the factors influencing the opinion on NT (e.g. knowledge, science credibility, media usage, peer exchange)? • What are the differences in opinions between cultures, societal groups, socio-demographic groups (age, gender, countries). 	<ul style="list-style-type: none"> • General public • Hard to reach groups 	<ul style="list-style-type: none"> • Self-assessment on opinion on NT • Attitudes towards science credibility • Usage patterns of online and offline media for consumption of science content • Science communication patterns with peers • Capacity to defend ones opinion in discussions • Observed and self-reported changes in citizens' opinions towards NT 	<ul style="list-style-type: none"> • Online questionnaire (online, monitoring stations) • Opinion polls • Participatory workshops • Streetlab reports
Objective 4: Collect and understand citizens attitudes towards NT			
<ul style="list-style-type: none"> • What are the citizens' attitudes towards risks and benefits of NT? • What are the differences in attitudes between cultures, societal groups, socio-demographic groups (age, gender, countries) 	<ul style="list-style-type: none"> • General public • Hard to reach groups 	<ul style="list-style-type: none"> • Interest and attitudes towards specific NT products (existent or future products) • Perceptions of risks and benefits influencing attitudes • Observed and self-reported changes in attitudes towards NT 	<ul style="list-style-type: none"> • Online questionnaire (online, monitoring stations, ..) • Participatory workshops • Streetlab reports



Objective 5: Increase the dialogue with educational institutions on NT			
<ul style="list-style-type: none"> • How can the dialogue about NT be successfully involved in today's science teaching? • Are their apparent benefits and barriers for educational institutes? 	<ul style="list-style-type: none"> • Teachers involved in NanOpinion project • School students • Parents 	<ul style="list-style-type: none"> • Increased participation and multiplication of NT school activities across Europe • Increased/decreased integration of NT in school curricula • Feedback on outreach activities in schools • Suggestion for improvement • Changes in knowledge and perceptions on NT amongst teachers and pupils 	<ul style="list-style-type: none"> • School reports • Teacher feedback • Documentation of school activities
Objective 6: Build a vivid dialog about NT			
<ul style="list-style-type: none"> • Which formats and media helped to establish a vivid dialog on NT? • What are best practice examples? • What were the experienced barriers and how could they be addressed? 	<ul style="list-style-type: none"> • General public • Hard to reach groups 	<ul style="list-style-type: none"> • Significant correlation of outreach (media) activities and citizens' involvement • Increased numbers of citizens involved through project duration (learning curve) • Statistical data of outreach activity involvement (Number of forum contributions, comments, likes, bookmarks, links and references) • Lessons learned and suggestions for improvement 	<ul style="list-style-type: none"> • Event evaluation questionnaire • Streelab reports • Logging data of all online and social media • Participatory workshops • Online questionnaire



Objective 7: Create a virtual NT information and discussion platform			
<ul style="list-style-type: none"> • Did the project succeed in developing a well-known and used internet portal on NT 	<ul style="list-style-type: none"> • General public • Media • Teachers, students • Scientists and science communicators 	<ul style="list-style-type: none"> • Increased numbers of visitors and portal users • Increased time spent on the portal • Number of links and references to the portal • Dissemination activities referring to the portal • Number of different stakeholder groups meeting on the portal 	<ul style="list-style-type: none"> • Web and media statistics
Objective 8: Implement innovative outreach activities			
<ul style="list-style-type: none"> • Did the project activities succeed in implementing innovative outreach activities 	<ul style="list-style-type: none"> • General public • Media • Teachers, students • Scientists and science communicators 	<ul style="list-style-type: none"> • Assessment of activities experienced • Recommendations given from visitors 	<ul style="list-style-type: none"> • Live event evaluation • Teacher documentation • Social media and blogs

3.2. Challenges to be addressed by the evaluation concept

NanOpinion aims to investigate the broader public's attitudes and opinions on nanotechnology in different European countries, focusing on those "hard to reach" groups which do not show an initial interest in science topics yet. The challenge for the evaluation is to cope with a large diversity of target groups, holding a diverse and ambiguous knowledge on NT, having uncertainty in opinions in this abstract field of research and nevertheless come up with some comparable valuable data, which help us to better understand the aspects under investigation.

However, the NanOpinion-Online Survey deals with the limitation of coverage error. Since the sample will not be randomly drawn from the population, it cannot be assessed how selective the sampling population is and how many target persons never had the chance to participate in the survey. Thus, inferences cannot be made to the whole population.

Diversity of knowledge and interest of the broader public

On the one hand, we have to be aware that nanotechnology is an emergent phenomenon and most people are unfamiliar with the term, and so presumably do not have pre-existing attitudes as traditionally conceived (Davies, Kearnes, & Macnaghten, 2008). It is difficult to assess opinions in a field that is still widely unknown. Most people have not yet been confronted with nanotechnologies and have not yet formed their opinion. Thus we have to consider in our evaluation concept this potentially large group of citizens who have not formed an opinion on NT yet. We have to carefully assess if they already have an opinion and how secure they feel about having formed it, and in addition try to better understand which influencing factors might be relevant when forming opinions on NT.



On the other hand, there is an increase of nano-products available on the market and consumers will get in touch with them more and more practically, not only theoretically in hypothetical discussions. Therefore, new specific fields of interest will occur, in which the general public is not necessarily interested in current developments in different sectors of nanotechnologies, but rather consists of groups of consumers who are interested in certain fields, in which more and more nano-products will be available.

Accordingly, communication activities on nanotechnologies will increasingly address people, who are rather interested in specific nano-products and not in nanotechnology in general as a scientific challenge. Their opinions on specific developments will be different from attitudes on nanotechnologies, which are formed based on scientific interests.

Ambivalence towards nanotechnology

Secondly, the specificity of nanotechnologies, meaning the “complexity of the topic, the ambiguity and uncertainty of nanotechnology innovation” (A. Grobe, Snet conference 2012) also causes an increasing ambivalence in opinions as current studies already show. In Switzerland and Germany people assess applications they are familiar with more positive. And although they would purchase nanotechnology products or are open minded about nano related innovations, at the same time they state, that it is difficult for them to assess the benefits and risks of nanotechnologies as a whole or their individual applications. (Grobe, Rissanen, Funda, De Beer, & Jonas, 2012, p. 4).

Influencing factors on opinions about NT

The scientific literacy model of opinion formation emanates that knowledge facilitates the accurate evaluation of risks and benefits, and that it generates support for science and technology. Under this assumption “public support for nanotechnology will grow as awareness or knowledge of it expands. Studies have shown that familiarity with nanotechnology is correlated with positive attitudes towards it.” (Ho, Scheufele, & Corley, 2010, p. 2704)

But for most emergent technologies, and amongst them nanotechnology, people typically know little about it and have little incentives to learn more as the direct personal relevance of doing so is unclear. “Developing an in-depth understanding would require significant efforts on the part of ordinary citizens and the pay-offs ... may simply not be enough” (Scheufele & Lewenstein, 2005, p. 660) Thus, people tend to form their opinions in an easier manner, which does not include careful integration of new knowledge but rather relies on “heuristics or cognitive shortcuts, such as ideological predispositions ...” (Scheufele & Lewenstein, 2005, p. 660). Amongst these factors are for instance, value predispositions (religion, deference to scientific authority), trust in science (Lee, Scheufele, & Lewenstein, 2005), media exposure (Ho et al., 2010), and various demographics (Lee et al., 2005).

Influencing factors on opinion about NT can thus be clustered in:

- 1) cognitive influences, such as specific knowledge on NT, scientific literacy in general, and cognitive processing;
- 2) affective influences, such as ideological pre-dispositions and trust in scientists, and
- 3) other antecedent variables, like science media use, and interpersonal discussions.

Ideological pre-dispositions are said to play an important role in shaping public attitudes towards nanotechnologies. “For example, individuals who hold a pro-science and technology orientation are more likely to seek for scientific information from the mass media, to discuss science with others, which in turn, produces positive attitudes towards the technology.” (Ho et al., 2010, p. 2704)



Trust in scientists is another key aspect of affective reactions towards science and technology. Trust can significantly influence perception of risks versus benefits and public acceptance of new technologies. Ho et al., 2010 and Lee et al., 2005 showed that trust is a relevant actor for the support of nanotechnology. Ho (2005) refers to a study which shows that people were more concerned with whom to trust than with the scientific issue itself” and trust becomes especially important in situations when individuals have very limited knowledge on a future innovation and thus can hardly anticipate the future consequences of this technology.

Mass media are the main source of information about science and technology for the majority of the public and media coverage has shown to play an important role in shaping public attitudes towards emerging technologies (M. C. Nisbet, Brossard, & Kroepsch, 2003). Mass media have a dual function: they provide information and “the media frame such as a positive tone of coverage offers heuristic cues to make quick decisions about the technology.” (Ho et al., 2010, p. 2706)

To frame is to “select some aspects of perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (Besley, Kramer, Qingjiang Yao, & Toumey, 2008, p. 212). A framing effect occurs when “in the course of describing a new technology, a speaker’s emphasis on a subset of potentially relevant considerations causes individuals to focus on those considerations when constructing their opinions” (Druckman, 2001, pp. 226–231). Whilst frames sometimes include factual content (e.g. citing a health study or consumer production projections), it is not critical and, in practice, most frames are “fact free” (e.g. no citation of health statistics) (Berinsky & Kinder, 2006). But people also think in frames, and to be accepted, the information must fit people’s frames. If the facts do not fit a frame, the frame stays and facts bounce off. (Druckman & Bolsen, 2011) found that individuals who are provided with both, frames that lack factual information and frames that include facts; they do *not* privilege the facts. And once people form initial opinions, they process new factual information in a biased manner (Druckman & Bolsen, 2011)

Cognitive processing: Individuals process information by different cognitive processes, for example by talking about it with others and connecting it with pre-existing knowledge. This is news elaboration and interpersonal discussion. It is assumed that both elaborative processing and interpersonal discussion is associated with positive attitudes towards emerging technologies. (Ho et al., 2010, p. 2706)

Interpersonal discussion has been identified as playing an important role in political debate, but has been rarely addressed by science communication researchers yet (Besley et al., 2008). Interpersonal discussion can be understood as a function of media use as well as a function of active civic engagement and debate. Besley and his co-researchers (2008) found out that participants in nanotechnology debates involved others in discussions about nanotechnology following the debate. They mainly commented on nanotechnology from a positive side, referring to scientific progress and economic prospects, although they were involved in extensive discussion on negative impacts during the debate. The authors of this study suggest further research on the mediated impact of specific public engagement processes, trying to understand “the degree to which such engagement can reach beyond direct participants through individual social networks may therefore take on added significance.” (p. 228)

Most of the studies on influencing factors on opinions about NT were conducted in the United States and there is little research on these issues in the European context. Thus NanOpinion will address these factors in its questionnaires which will be filled in by the general public in different European countries. The aim of this investigation is not only to get a clearer



understanding of opinion forming about NT in Europe, but also to investigate aspects which have not been so much in the focus of research yet, e.g. inter-personal discussions.



4. Overview of evaluation and monitoring activities

The following section gives an overview on activities and instruments carried out for the monitoring purpose. The graphic below shows the two main approaches of analysis: the qualitative and quantitative analysis. And it shows the instruments applied for data collection.

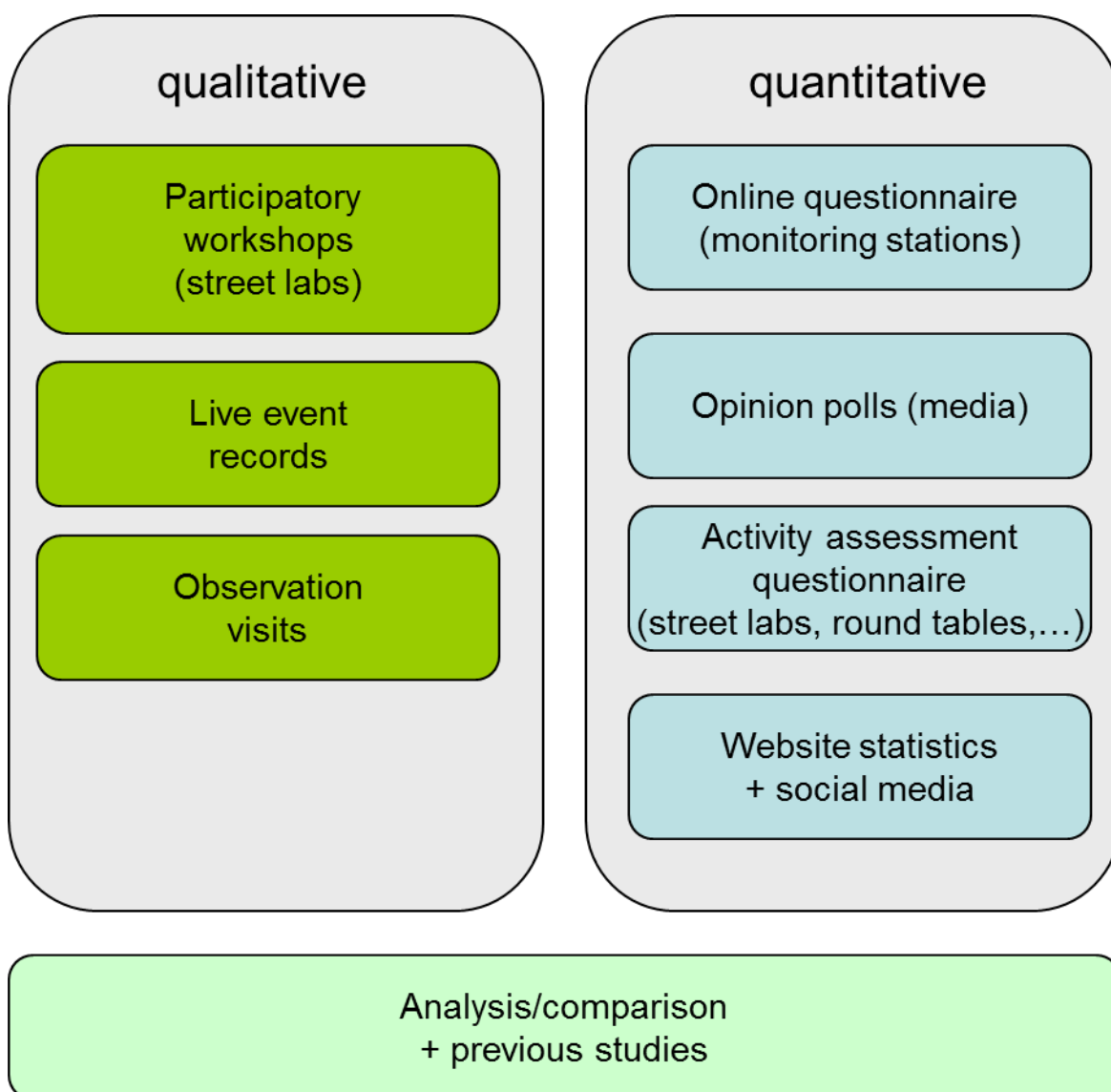


Figure 1 evaluation instruments overview

One main objective within the NanOpinion project is to reach out to wider audiences across Europe, addressing the general public (and schools), and so-called “hard to reach” persons in specific. With hard to reach we don’t mean groups being specifically defined as marginalized groups, but rather people who are not the usual science museum visitors or are not likely to take part in (online) debates or similar events. As citizens and consumers, however, they have certain fields of interest that could also be related with nanotechnologies.

In NanOpinion, we therefore identified five main areas of interest, as topics to be covered by outreach, communication and monitoring activities, as well as connecting factor to address different target groups. The topics are 1) Food, 2) Sports and Textiles, 3) Medicine, 4) Cosmetics

and 5) Environment/Energy. Activities and communication materials will address these topics, and therefore also monitoring instruments will align their examples and questions accordingly.

4.1. Quantitative instruments

Quantitative instruments comprise:

- Online questionnaire
- Opinion polls
- Activity assessment questionnaires
- (Social) Media statistics

Online questionnaires serve best for gathering data from bigger amounts of respondents and comparison. The questionnaire is openly accessible throughout the outreach activity period, so we do not restrict the survey to any interested party. However, data analysis will consider, by whom, when and where the questionnaire was filled in.

The questionnaire will cover different aspects of opinion on nanotechnology. Obviously, to “test public knowledge by questionnaires” (Malsch, Grinbaum, Bontems, & Fruelund Anderson, 2012, p. 25) is feasible, as well as to ask for habits and attitudes and opinions. Respondents will also be asked for some self-estimations (e.g. opinion security) as well as assessments concerning current and future developments in the field of nanotechnologies. Demographic data will support the analysis to finally be able to draw a picture on Europe’s population groups and their positions to nanotechnologies.

For the evaluation of attitudes the project will follow suggestions from previous research to focus on preferably concrete fields of application (Grobe, Rissanen, Funda, Ph. de Beer, & Jonas, 2012, p. 7) and consumer products (Malsch et al., 2012, p. 44) (Wickson, Delgado, & Kjolberg, 2010a, p. 757) and avoid abstractness.

Opinion polls – the question of the month – available online, published on all project online resources (portal, micro sites, social media channels) – are meant to act as a teaser to stimulate debate. Online project blogs will support the debate as well, but also quantitative results of each poll will be available.

Event evaluation questionnaire: Many NanOpinion outreach activities will happen face to face. The most efficient way to get feedback on live events is again a quantitative one. Although participants will be actively involved in discussion, game and exchange sessions (that will also serve for data collection), a short paper-and-pen post questionnaire will be distributed at each live event. Simple evaluation questions will be used for the assessment of the activities themselves. The number of visitors and additional evaluation numbers will complement the assessments.

Social media: To study online behaviour in detail and collect in-depth insights into the use of online sources and information about nanotechnology it “would require a certain project focus and a qualitative approach” (Anderson, Brossard, & Scheufele, 2010, p. 1083), which is not in the scope of the NanOpinion project. However, logging data from social media channels will allow us to conclude on the attractiveness and relevance of social media for a debate on nanotechnology and the most frequently or recurrent issues can be extracted and serve for further analysis. In addition this logging data will be amended by reports about the nano-debate on the project’s online media written up by the responsible media partners for the dissemination work package.



4.2. Qualitative instruments

The qualitative data collection focuses on the one hand on the collection of insights on opinion forming processes towards nanotechnology in different European countries and with different target groups involved. On the other hand it helps to document lessons learned from the innovative outreach activities of the project. The data collection is meant to involve only smaller amounts of people, mainly representatives of the hard to reach groups and live event visitors.

Qualitative instruments comprise:

- Participatory workshops
- Observation visits
- Live event records

The main instrument for the qualitative assessment of opinions will be a **participatory workshop** held at each Streetlab location. Therefore, the evaluation team will have access to data from ten live events across Europe that will complement the quantitative data, additionally collected via a monitoring station, which will also be hosted by each Streetlab.

Local partners will arrange workshops with 8-10 selected representatives of the Streetlab target groups. Based on media artefacts and nano product examples, using interactive participatory elements the participants of the workshops will involve in discussions on opinion forming processes towards nanotechnology. The local organisers of each workshop will have a special training on the workshop methodology and a detailed handbook on how to conduct and document the workshop.

Local organisers of the Streetlabs will contribute to the evaluation of the project through the elaboration of the **live event records**, which will summarize the results from the outreach activities (e.g. the discussion game played at the Streetlabs) and document the artefacts created at the Streetlabs (e.g. post-its with remarks on opinion-walls). The aim of these reports is to understand which outreach activity successfully attracted the interest of the broader public in nanotechnology and involved participants into active dialogs. It will also help to understand what were the main aspects discussed and open questions that came up, as well as barriers that were encountered when organising and conducting the Streetlabs.

Additional **observations and reports from the outreach activities in schools, the media channels and the monitoring stations** that are gathered by the responsible teams for the implementation reports (D4.4., D5.2., D5.3.) will be taken into account for the analysis of results.



4.3. Timeschedule

Activity	Project month	Date of termination
Questionnaire finalisation, testing	10-11	March 2013
Translation into first languages (3)	11	March 2013
Integration in monitoring station „info package“	11-12	April 2013
Trial round	12	April 2013
Revision and adoption	12-13	May 2013
Open survey during monitoring stations activities	13-24	April 2014
Launch of online survey through all available NanOpinion online resources	13-24	April 2014
Analysis and preliminary results to feed back to other WPs	17-18	October 2013
Comparative analysis (integration of all WPs)	24-29	September 2014
visualisation of final results	29-30	October 2014



5. Detailed description of instruments and analysis

The following chapter introduces the quantitative and qualitative evaluation instruments in detail and provides an in-depth description of each instrument, the involved target groups, distribution channels and applied languages.

5.1. Online questionnaire

5.1.1. Target groups

The questionnaire is the core evaluation instrument of the project, reaching out for the general public in Europe, and for pupils from the age of 14. The survey is open for all individuals, through the invitation at Monitoring Stations, a certain focus on “Hard to reach people” can be set. Different interest groups can also be addressed through various dissemination channels and AB and SIG suggestions.

5.1.2. Distribution channels

NanOpinion will make use of all available channels to promote the questionnaire. The main entrance point however is meant to be the monitoring stations as most important outreach instruments, which will travel throughout Europe. The appealing visibility and the company of trained staff at the monitoring stations will attract and invite passers by to get informed on nanotechnologies and take part in the survey.

Also, small promotions cards, containing the URL and QR code of the online questionnaire will be distributed at the Monitoring Stations and all other outreach occasions.

Each project partner will launch the call for participation via its own distribution channels, media partners will host the link on their microsites, radio programmes will announce it to their listeners, printed supplements will promote it amongst their readers, and social media channels will lead to it as well. Other project activities, such as live events, or school activities will also promote the participation.

At least 200 respondents per monitoring station should be recruited to fill in the questionnaire, other channels should lead to more respondents.

5.1.3. Languages

The questionnaire will be available in 16 European languages and Hebrew according to the geographical distribution of events.

5.1.4. Description of questionnaire and research hypothesis

The online questionnaire will serve as the core instrument for the monitoring activities in NanOpinion. The same sets of questions will be open for all target groups, filtered in fields of interests and knowledge on nanotechnologies.

The questionnaire is split in several parts to address the aspects identified as being most important to be considered when analysing opinion forming on nanotechnologies:

- A) **Awareness and opinion about nanotechnology:** how much have respondents already come in contact with nanotechnologies, how well informed do they feel, have they formed an opinion, what is their opinion on NT in general
- B) **Attitudes towards nano-products:** how do respondents assess risk and benefits, based on existing and visionary nano-products



- C) **Cognitive influencing variables on opinion:** what is the level of scientific knowledge in general, and nano-related knowledge in specific.
- D) **Affective influencing variable on opinion:** how is the scientific credibility in general perceived
- E) **Other influencing factors on opinion:**
- Media: what are the usage patterns of media for the consumption of science content
 - Interpersonal exchange and science discussion: with whom do respondents discuss science topics

F) Demographic data

The following chart presents an overview of the main aspects which are integrated in the questionnaire:

Factors influencing the opinion on nanotechnology and attitudes towards nanoproducts

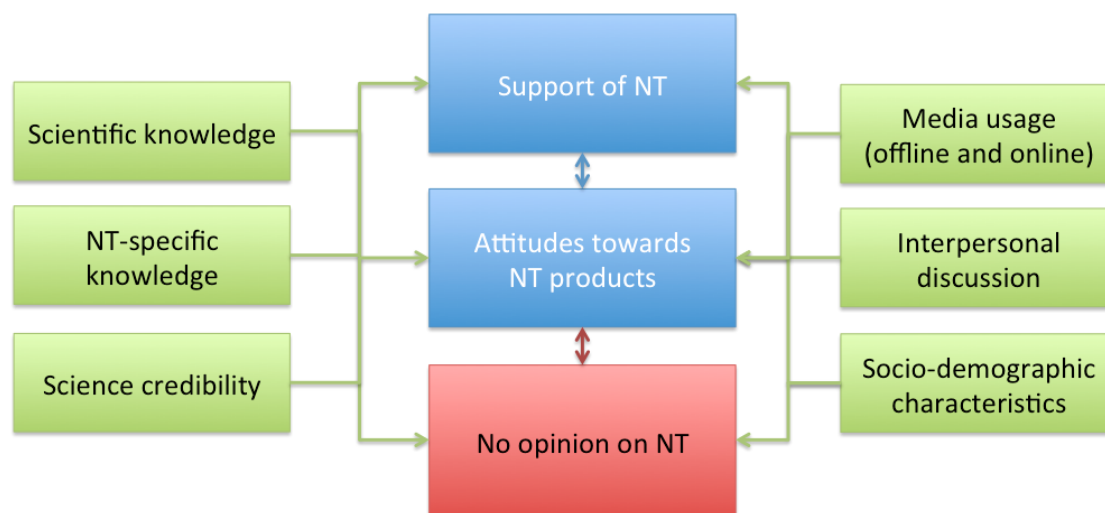


Figure 2: Influencing factors on opinion and attitudes

The first two blocks of the questionnaire cover the dependent variables of opinion towards nanotechnology in general and attitudes towards nano-products. **Section A gives an overview on respondents' self-assessment of awareness, knowledge and opinion forming towards NT.** Participants will be asked, if and how far they have heard or seen about NT, how well informed they feel, if they have already formed an opinion on nanotechnologies and what their general opinion towards nanotechnology is. The questionnaire will set filter questions here, only asking those respondents who have already come in contact, on their general attitude towards nanotechnologies. Others will not be asked those questions, but directly be led to the next section.

Previous studies and literature have proven that in public dialogue on nanotechnology precise examples and concrete applications are more useful than general discussions. Therefore, based on a small selection of nano-related consumer products (existing and visionary ones), **attitudes towards nano-products are discussed in section B)** of the questionnaire. Respondents will get a very brief introduction on the functionality of the product and a photo of the product. Questions will assess the products in specific and will give insight on public opinion towards the ethical, legal and social aspects (ELSA) of nano-products. Thus questions on nano-related products provide the specific assessments of nano-related products, information on general attitudes towards risks and benefits of NT in general.

Section C covers cognitive variables, finding out more about scientific knowledge in general, and nano-related knowledge in specific. Questions from Eurobarometer surveys will serve to find out more on scientific knowledge. They will be amended with specific questions on nano-science and nanotechnologies. Answers of this “quiz” will be contrasted with the self-assessment, on how well respondents feel informed already about nanotechnologies. Levels of knowledge will be contrasted with opinions as well.

Section D covers the affective variables on scientific credibility in general.

This question will help to understand affective variables and their influence on general support of nanotechnology and attitudes towards nano-products. It will help us to understand in how far affective variables like trust and credibility influence those who have already formed an opinion on nanotechnology but also those who have not formed an opinion yet.

Section E covers other influencing factors, like media and interpersonal discussions.

Media as influencing factors play an important role in opinion forming. However, exposure and use of media is difficult to measure. Also, a comparison of media coverage of certain topics e.g. nanotechnologies and media use of respondents is difficult to achieve. A self assessment of media use will bring insight in media usage and opinion forming. The questionnaire will focus on active media usage, asking for special interests and attention to certain topics in different media. The purposeful search in and consumption of different media on certain topics, such as nanotechnology, will be the conclusive source of information. Thus we will better understand the connection between media consumption behaviours and support of nanotechnologies.

Last, but not least the interpersonal exchange and science discussion is a not yet enough examined factor. Who are relevant actors to engage in scientific discussions and how important are these actors in forming one’s opinion will be investigated in our questionnaire.

Section F collects the socio-demographic data:

For comparison, required personal data of respondents are asked, such as age, gender, country of origin etc. But especially for opinion forming, some more personal factors, such as education level, social background are relevant.

Entrance points of monitoring stations will be considered as well. It’s important to track back the entrance points of respondents to be able to distinguish on which occasions they filled in the questionnaire, while browsing through the internet, visiting a Streetlab, passing by a monitoring stations, during lesson at school, etc. to be able to consider the context, especially additional information which were given.

This question block will help to better understand socio demographic differences in attitudes and opinions on nanotechnologies.



5.1.5. Analysis

- Descriptive analysis (comparison of means, differences in percentages) will be performed to provide a description of the data gathered and to show relationships between different aspects and different groups of people. In specific, the following statistical techniques will be applied:
- Univariate Analysis (measures of central tendency, measures of dispersion)
- Bivariate Analysis (Cross-tabulation, Contingency tables, Scatterplots)

5.2. *Opinion polls*

5.2.1. Target groups

The opinion polls are reaching out for European citizens who have access to and use the internet for science content consumption, but will also be disseminated face to face at the monitoring stations which aim to reach the general public and “harder to reach target groups”. The opinion polls will be accessible for online visitors of media’s microsites, NanOpinion portal visitors and social media users.

5.2.2. Distribution channels

The opinion polls will be widely distributed by all project partners via their distribution channels, via all online dissemination activities of the project (e.g. microsites, social media, platforms) and via the monitoring stations.

5.2.3. Languages

The polls will be available in local publication languages (at least four languages of media partners’ countries).

5.2.4. Description

Project media partners will publish a question of the month on their microsites. These questions will be related to the issues, which are discussed in articles and supplements published by media partners during the project duration.

These questions will be accessible at monitoring stations and through the project portal. The questions will be short and simple and published once each month during the dissemination campaign phase (10 polls). Poll questions will be compiled and approved by the NanOpinion editorial board.

The aim of these polls is to stimulate discussion and dialog amongst the participants and to attract participants to the online questionnaire. In addition it will feed the project portal with snapshots of opinions on nanotechnology from different European regions.

5.2.5. Analysis

The poll results will be analysed separately from the online questionnaire and mainly a comparison between countries will be conducted. Half of the questions will be similar to the ones published in the Nanochannels project, to allow for comparison of ad hoc answers to certain nano related questions changed over years.

In addition the reports of online activities and logging, which are prepared for the dissemination workpackage will also be analysed to understand in how far opinion polls are a suitable instrument to stimulate online discussion and dialog.



5.3. Assessment of live events

5.3.1. Target groups

The target group will be the visitors of the Streetlabs and other live events, such as round table discussion, organised at various locations, for instance in schools.

5.3.2. Distribution channels

Facilitators of the live events will distribute the paper questionnaires to the event visitors.

5.3.3. Languages

Local languages of the events

5.3.4. Description

Each Streetlab and other live project-outreach activity will be evaluated with a short questionnaire. This paper and pen questionnaire will be distributed and collected by local organisers during the event. Local organisers will feed answers in an online survey tool to build up a common data base for the assessment of all live events carried out within the NanOpinion project.

The questionnaire will contain the following main parts:

- A) Self-assessment of knowledge before and after the event
- B) Self-assessment of changing attitudes towards NT due to the event
- C) Attractiveness of the event
- D) Suggestions for improvement
- E) Basic socio-demographic data

As the questionnaire will be filled in by visitors of the events on the ground, special attention will be given to the length of the questionnaire.

5.3.5. Analysis

The questionnaire will help the project together with the event reports from the local event organizers to better understand which outreach activity is especially useful to inform the broader public about nanotechnology and to change attitudes towards nanotechnology. The lessons learned from these analyses will be an important contribution to the policy recommendations on future outreach activities on nanotechnology for the European commission.

The questionnaire contains items to be answered on a response scale that are quantitatively analysed using SPSS, carrying out descriptive analysis on frequency distributions. The questionnaire also contains open questions providing space for written statements. The answers translated by the local partners are analysed with content analysis methods, identifying the most relevant aspects.

5.4. Online media statistics

Monitoring and evaluation will constantly take place. The portal provider (partner 7/18) and the media partners will provide statistics on unique visitors, numbers of access, length of access, origin of users, active contributions in blogs via new entries and comments, likes and dislikes on social media sites, links to the online media of the project etc.



Together with qualitative reports from the website and social media facilitators, the statistics will feed into to general analysis of the project impact.

5.5. Participatory workshops

5.5.1. Target groups

Streetlabs are tailored to defined (hard to reach) target groups, who are not the usual visitors of science museums. These target groups are addressed by an appealing format and location, offering information, entertainment and innovative forms of outreach and dialogue. Such activities aim to attract a broader public and wake curiosity on by-passers to participate.

The events will take place at appropriate locations where those person groups could be reached and then be involved in dialogues on nanotechnologies related to their specific field of interest (eg sport). Each Astreetlab location will also host a participatory workshop. 8-10 selected participants will either be invited to take part during the Streetlab itself or through networks of local organising partners. They will thus present the different target groups covered by the Streetlabs. For an overview on geographical distribution and topics addressed (see WP5 concept; D5.1.).

Age range: adults from 18 years

5.5.2. Distribution channels

Local partners (selected NanOpinion partners, BC offices and ECSITE third parties) will recruit participants, and provide rooms either in their premises or on the spot. Local organisers will either use the Streetlab activity itself or their channels of communication to reach out for interested groups in the specific fields of interest.

5.5.3. Languages

The participatory workshops will be held in local languages, local partners will provide a written transcript in English for later analysis.

5.5.4. Description

The participatory workshops will last two hours and involve 8 to 10 people in interactive assessment and dialog activities along a structured guideline. The main aspects discussed during the participatory workshops are related to the online questionnaires, as this qualitative data collection instruments aims to get a deeper understanding of the main issues investigated in the project.

The workshop will use artefacts, e.g. cards describing nano-products or newspaper articles with different framing, to understand how opinions on nanotechnology are formed and what the influencing factors for this opinion forming are. It will also get deeper insights on the argumentations of risk and benefits and how they change within interpersonal discussions.

After an initial, engaging introduction to nanotechnologies the participatory workshops will reflect on:

- Science credibility and trust in science: what are individual beliefs and how are they formed/changed?
- Online and offline media: which media/person/orientation are influencing opinions and what role are artefacts with different frames play
- Interpersonal exchange how and with whom are people discussing science issues and which relevance does this have for their opinion



- Attitudes towards risks and benefits of nano-products: what are the perceived risks and benefits related to nano-products which considerably influence consumers' attitudes and thus should be better addressed in future?

The local organisers who will moderate the participatory workshop will get a training and detailed briefing materials and protocol templates as preparation of the workshops. Local hosts will also provide background information on workshop participants, such as demographic data.

5.5.5. Analysis

The local organisers of each Streetlab will conduct the participatory workshops. They will prepare detailed protocols of the workshops and deliver them to the leader of WP6 for analysis using a provided reporting template.

Recordings and written English transcripts of the discussion will be the basis for analysis.

The analysis will be conducted in three steps (Mayring, 2008): (1) Summarisation, (2) Explication and (3) Structuring.

At least two researchers will be involved in the analysis of every protocol. Only those codes and respective sub codes which all agreed upon will be introduced or retained. This method of co-analysis guarantees improvements of objectivity: The results do not depend on one specific person and are reproducible independently of the individual researcher. As anonymity is guaranteed to the participants, each person is given a unique code instead of revealing their names. The findings consist of a systematisation of the relevance of codes a generalisation and an interpretative framework.

The derived main categories identified by the research team will give more insights into opinion forming behaviours of European citizens.

5.6. Observations and Streetlab reports

5.6.1. Target groups

The target group of the observation and Streetlab report are the Streetlab visitors, thus the general public and "hard to reach groups".

5.6.2. Distribution channels

Observations will take place at all 10 Streetlabs.

5.6.3. Languages

English written observation and reporting template to be filled in by observers (project team and local organisers)

5.6.4. Description

Observations and impressions, to be gathered by local teams for the implementation reports (D5.3.) will be taken into account for the analysis of results.

Local organisers of Streetlabs or project partners will be handed out standardised paper observation templates encompassing high- and lowlights of the activity, overall impressions, assessments, gathered feedback and optional suggestions for adoption.



5.6.5. Analysis

All reports will be analysed in a body by the WP6 leader, ZSI. They will complement the quantitative outcomes from the event evaluation questionnaires and support the projects' understanding about the effectiveness and attractiveness of the innovative outreach activities of the Streetlabs.

A comparison between the reports will come up with commonalities between all the organised Streetlabs as well as observed differences in the visitors' behaviour and impact of the events.

Therefore the analysis will **first** find meaningful and significant headlines for the summarised aspects, then **compare topics** by looking for similar categories and criteria in each observation report and finally **conceptualise** categories and main concepts

The derived main concepts identified by this analysis will give more insights in determining aspects of successful outreach activities on nanotechnology.



6. Summary of expected results

Monitoring activities, carried out in WP 6 are specifically intended for opinion evaluation. Main fields of interests are the levels of knowledge and awareness on nanotechnologies of the general public, as well as their attitudes to nanotechnologies in general and on specific nano-related applications and finally also tendencies that could be concluded.

Monitoring activities do not address an internal project evaluation, besides a standardised assessment of the undertaken NanOpinion outreach activities.

The monitoring and evaluation activities will provide insights on the main objectives set up for the project:

Objective 1: Take the debate to the outdoor arena, involving the public and a “hard to reach” audience in a trustworthy and informed dialogue

The evaluation will provide the lessons learned on how to engage and actively involve the public in a NT dialogue. It will report about the problems and obstacles encountered and how they can they be addressed. Finally it will also come up with the benefits from the outreach activities with regard to changes in perception, knowledge and understanding. Monitoring instruments are also meant to give insight on the following questions: How many participants could be reached? How many participated in project activities, online but also in live events? These findings will feed policy recommendations for future outreach and communication methodologies and tools for sustainable dialogue.

Objectives 2 to 4: Collect and understand citizens knowledge, opinions and attitudes towards NT

The quantitative and qualitative monitoring and evaluation instruments at live events and on online media channels will provide inquiries on peoples’ knowledge and opinion on nanotechnology in general and on attitudes towards specific nano-products in specific. It will allow understanding differences in knowledge, opinion and attitudes between cultures, societal and socio-demographic groups (age, gender, country). Evaluation will address the awareness of ELSO and consumer behaviours and increase our understanding of the processes of opinion forming. These learning will feed policy recommendations for public expectations regarding research, regulation and social implications (ELSA), as well as effective science communication.

Objective 5: Increase the dialogue with educational institutions on NT

The consideration of the reports from the school outreach activities will provide the project with insights on how to involve the dialogue about NT in today’s science teaching and what are the apparent benefits and barriers for educational institutes from these dialogue activities.

These findings will feed the policy recommendations on future potential and need for nanotechnology education in educational institutes.

Objective 6 and 7, 8: Build a vivid dialog about NT and create a virtual NT information and discussion platform and implement innovative activities

The consideration of reports and statistics from the different media partners and the responses of the online channels of NanOpinion will provide knowledge on which formats and media helped to establish a vivid dialog on NT, what were the best practice examples and how could experienced barriers be addressed. Live event evaluations and feedback through social media channels will assess project activities and the developed content tools (WP 3). Findings will feed policy recommendations for future outreach and communication methodologies and tools for sustainable dialogue.



7. Ethical issues

In order to achieve the goals defined within the task in WP6, the project partners of NanOpinion have to collect personal data from the participants, like basic demographic data and responses to questionnaires as well as group discussions. This data is essential to reach the objectives set by the project and described in chapter 2. During the data collection the data protection issues involved with handling of personal data will be addressed by the following strategies:

Volunteers to be enrolled in the qualitative data collection of the participatory workshops will be exhaustively informed, so that they are able to autonomously decide whether they consent to participate or not. In an informed consent (see Annex 1), the purposes of the research, the procedures, potential discomforts or benefits as well as the handling of their data (protection, save storage) will be explained. In order to make the NanOpinion research transparent, workshop participants will have to sign the informed consent in Annex 1.

The data exploitation will be in line with the respective national data protection acts. Since data privacy is under threat when data are traced back to individuals – they may become identifiable and the data may be abused – we will anonymise all data.

The data gathered through logging, questionnaires and participatory workshops during this work package will be anonymised and therefore the data cannot be traced back to the individual. Data will be stored only in anonymous form so the identities of the participants will only be known by the partners involved and will not even be communicated to the whole consortium. Reports based on the participatory workshops will be based on aggregated information and comprise anonymous quotations respectively.



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Annex

Content:

Online questionnaire(draft version)

Participatory workshop guideline (draft version)

Live event evaluation questionnaire (draft version)

Informed consent



NanOpinion survey

Welcome to the European consultation on nanotechnologies.

Thank you very much for your preparedness to participate in this survey, which aims to understand European citizens' knowledge and opinions on nanotechnology.

Before we get started, let us define what nanotechnology means to us:

"Nano" as a prefix means a "billionth". In the case of nanotechnologies, the reference is to the nanometre, which is one billionth of a metre (or one millionth of a millimetre). The nano-world is therefore the world of atoms and molecules. If we speak about nanotechnologies we mean the design, production and application of structures, devices and systems at nanometer scale.

You do not need any prior knowledge for this questionnaire, as participants with every level of knowledge and every opinion are warmly welcome and needed!

Please spend fifteen minutes to give us your views and join the prize-draw at the end!

The survey is conducted by the European research project NanOpinion and all data are strictly confidential.

The following might be new for you or it sounds familiar. Please tell us to what extent you've already come in touch with nanotechnologies by answering the following questions:

A. Awareness about nanotechnology:

1. How much you have heard, read or seen about nanotechnologies?

nothing at all										very much
0	1	2	3	4	5	6	7	8	9	10

If 0 and 1, then go to question 5 (and skip 10-14)

2. How informed do you think you are about nanotechnology?

not at all informed										very much informed
0	1	2	3	4	5	6	7	8	9	10

3. Have you already formed an opinion on nanotechnologies?

not at all										absolutely
0	1	2	3	4	5	6	7	8	9	10

If 0 and 1 then go to question 5

How much do you support the use of nanotechnologies?

not at all										very much



0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

4. How confident do you feel on your opinion?

not at all										very much
0	1	2	3	4	5	6	7	8	9	10

Nanotechnologies are closely related to science. Let's do a quick self-check on science in general:

B. Cognitive influencing variables on opinion

The next set of questions deals with scientific knowledge in general and knowledge on nanotechnology more specifically.

Scientific Knowledge in general:

For each one, please indicate if you think the statement is true or false.

5. Lasers work by focusing sound waves

true false don't know

6. Antibiotics kill viruses as well as bacteria.

true false don't know

7. Electrons are smaller than atoms.

true false don't know

8. Light travels faster than sound

true false don't know

9. It takes one month for the earth to go around the sun

true false don't know

Scientific Knowledge on NT:

...and a check on nanotechnologies in especial:

For each one, please indicate if you think the statement is true or false.

10. Nano particles are visible with X-ray

true false don't know

11. Nanotechnology allows scientists to arrange molecules

true false don't know

12. A nanometer is about the same size as a hair in diameter

true false don't know

13. Nanoparticles do not occur in nature

true false don't know

14. Nanoproducts have been on the market for several years already

true false don't know

Please find some further reading in the infosection if you are interested.

Let's move on to something more practical....

C. Attitudes towards nanoproducts:

You will now discover products and applications that can be developed due to nanotechnologies. Some of them are already available on the market, some of them are just visionary but scientifically plausible. Please read through the examples and give us your opinion on them.




<p>Product 1: Innovative Sunscreen: transparent, thin in consistency and very effective against sunburn</p>		<p>This is a new sunscreen that contains nanoparticles that reflect the sunrays. Conventional high-protection sunscreens (SF30+) contain bigger particles using chemical reactions and the cream appears white and thick. When using nanoparticles the sunscreen is transparent, but still blocks UVA and UVB rays.</p>
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15. Regardless of the prize, how do you estimate your readiness to buy this product
Very low **very high**

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

16. What is your attitude on the following issues related to this nanotechnology product?

	Very critical					very positive					
	-5	-4	-3	-2	-1	0	1	2	3	4	5
health issues											
the safety for workers in nano manufacturing											
privacy issues											

<p>Product 2: An innovative line of T-shirts: repel stains, absorb odour and stay dry even under heavy training.</p>		<p>A line of T-shirts with enhanced properties based on nanotechnologies – tiny molecules are permanently attached to fibres without clogging the fabric weave, which produce superior performance without compromising the look, feeling, durability or comfort of the fabric. The shirt can absorb bad smell, stay dry even during heavy training or totally repel staining.</p>
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17. Regardless of the prize, how do you estimate your readiness to buy this product
Very low **very high**

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

18. How do you estimate the following issues related to this nanotechnology product?

	Very critical						very positive				
	-5	-4	-3	-2	-1	0	1	2	3	4	5
health issues											
the safety for workers in nano manufacturing											
privacy issues											

<p>Product 3: One day we may have smart food packages that will detect food spoilage, visually alert us and inform the retailer</p>	<p>Which visualisation?</p>	<p>In the future we may have smart food packages with sensors that inform us if the food has spoiled, or if there are microorganisms. The package with embedded nanoparticles could change colour when there is food spoilage, They could also contain a Radio-frequency identification tag, to enable tracking the package from production to the consumer, and communicate to the retailer the status of the food it contains and its location.</p>
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19. Regardless of the prize, how do you estimate your readiness to buy this product
Very low **very high**

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

20. How do you estimate the following issues related to this nanotechnology product?

	Very critical						very positive				
	-5	-4	-3	-2	-1	0	1	2	3	4	5
health issues											
the safety for workers in nano manufacturing											
privacy issues											



21. Do you feel you would need more information on nano products?

not at all					very much					
0	1	2	3	4	5	6	7	8	9	10

Labelling

22. These days there are many discussions on product labelling. If, and to what extent consumers should be informed on the products they are buying. Please see the following statements and choose one option most applicable for you:

- Consumers have the right to know if a product contains nanotechnologies, and it should be in the label.
- Products should be labelled but there should be a link to one website where the consumer could get all pros and cons of the nanoparticles used in the product and safety information.
- Yes to labelling and links to information, but more importantly there should be an authority that checks and gives quality stamps.
- No need for labelling. Consumers may only rely on an authority giving a quality check, as we do not have enough time and knowledge to read technical information.
- I did not form my opinion yet

D. Affective influencing variable on opinion

Science credibility and trust in scientists:

After having explored some practical applications please give us your opinion on some general statements on science.

Please move the slider between the following polar statements:

23. Science....

overcomes problems					creates new problems					
-5	-4	-3	-2	-1	0	1	2	3	4	5

24.

New technologies

Might have unexplored health risks

are only set in place when sufficiently tested

-5	-4	-3	-2	-1	0	1	2	3	4	5



25.

Scientists

Should have the freedom to do what they think its best

Should undergo strict regulations

-5	-4	-3	-2	-1	0	1	2	3	4	5

E. Other influencing factors on opinion:

Science media use :

There are many ways for getting information or discussing science and technology. Please tell us about your favourite ones:

26. Consider a scale from 0 to 10, where 0 means lowest attention and 10 means highest attention. When using the following sources of information - how much attention do you pay to science and technology topics in general and nanotechnology topics in specific? Insert a number between 0 and 10

Source of information	Science & Technology	Nanotechnology
TV		
Newspapers and print media		
Internet and social media		
Radio		

Science discussion:

27. Consider a scale from 0 to 10, where 0 means lowest importance and 10 means highest importance. How important are the following sources of information for you in forming an opinion about nanotechnologies?

Not important at all

very important

	0	1	2	3	4	5	6	7	8	9	10
Scientific news in various media											
Discussions about science topics with friends and family											
Statements of public figures											
Specific consumer information on certain products											



or applications											
Discussions about science topics with co-workers											

Socio-demographic data:

Now we come to the last part of the survey. Please fill in your personal data which will be anonymized and treated as strictly confidential!

28. What is your year of birth?

29. Female Male

30. Job (insert **ISCO** levels here)

31. What is your country of residence?

32. Which of these descriptions best describes your situation? Are you currently...?

- in paid work (or away temporarily) (employee, self-employed, working for your family business)
- in education, even if on vacation (not paid for by employer)
- unemployed and actively looking for a job
- unemployed, wanting a job but not actively looking for a job
- permanently sick or disabled
- retired
- in community or military service
- doing housework, looking after children or other persons
- (other)
- (Don't know)

33. Which of the following levels of education have you already completed?

ISCED level 5A or 6

ISCED level 4 or 5B

ISCED level 3

ISCED level 2

ISCED level 1

- Not completed primary (compulsory) education
- Primary education or first stage of basic education
- Lower level secondary education or second stage of basic education
- Upper secondary education
- Post-secondary, non tertiary education
- First stage of tertiary education (not leading directly to an advanced research qualification)
- Second stage of tertiary education (leading directly to an advanced research qualification)
- (Don't know)

34. How did you get this survey?

- School
- The NanOpinion mobile station
- A NanOpinion streetlab/live event



- Social media
- Browsing through the internet
- Don't know

Thank you for your participation!!



Participatory Workshop Guideline for moderators

Issue:	Lead questions	Sub-questions	Materials needed	Topic and Research Questions	Remarks	Time
Introduction	Introduction of the participants, Introduce yourself and the purpose of the workshop “This workshop on nanotechnologies should help to find out, how Europeans think about nanotechnology and related products. It does not require any pre-knowledge, but could bring you some information that might be of interest for you” Explain “rules” (taping, confidential, length, function of a moderator, ...)	How have you been invited to the workshop?			Do not accept questions on NT in this section	5
Inventory taking	How much you have heard, read or seen about this issue? How well informed would you say you are about nanotechnology? To which extent did you form already an opinion towards nanotechnology? Overall, I support the use of NT.	NO subquestions	Flip charts, sticky cards, ask people to put cards according to their answers on the flipchart - visualisation	Awareness and perceived level of information Pre evalu	Moderator should take care that ALL participants say something and take notes	5
Input, Quiz	Only few people have real knowledge about nanotechnologies, but most at least heard this and that. Let’s see what it is about. Lets’ do the following quiz on nanotechnologies		information package in form of a millionaires show (questions with correct answers). Answer cards (A, B, C, D) for each participant	Knowledge	Gameful approach, give correct answers and explanations to answers All should play	15
Q & A	Discussion, open questions on facts		Cards, flip chart	interest	Collect open questions Give some more information according to the moderator brief	15

Feedback	“Back home” How, what are you telling whom from our workshop afterwards?	Whom would like to tell, what		Interpersonal exchange		5
Inventory taking, part 2	Assessments afterwards	See part 1, same visualisation for comparison		Post evalu		2
	Open questions	everybody is invited to make a final statement on nanotechnologies, including things that are also important and have not been said yet Would you like to learn more about it Where and how? Internet applications? Games?			No more discussion, everybody says something and is not to be interrupted!	2
Conclusion	Thank you for the discussion					1

Live event evaluation questionnaire

Event:

City:

Date:

(to be filled in by local organisers in advance)

Please take 5 minutes to evaluate today's event!

1. Are you ...?

- Female Male

2. What is your year of birth? _____

3. How did you come across this event...?

Please choose **only one** of the following:

- accidentally
 via school
 per invitation
 saw an announcement
 Other: _____

4. In, general, how do you estimate the level of your knowledge about nanotechnologies BEFORE the event?

Please mark on a scale from 0-10 the most applicable

No knowledge at all					Comprehensive knowledge					
0	1	2	3	4	5	6	7	8	9	10

5. In, general, how do you estimate the level of your knowledge about nanotechnologies NOW?

Please mark on a scale from 0-10 the most applicable

No knowledge at all					Comprehensive knowledge					
0	1	2	3	4	5	6	7	8	9	10

6. Did this event made you change your attitude on nanotechnologies?

- yes no

If yes, do you feel now more ...

- negative
 informed
 curious
 critical
 positive

My attitude is the same as before

7. What was especially good about this event?

8. Why?(optional)

9. What did you not like about this event?

10. Why? (optional)

11. Do you have any recommendations for the future?

12. Did you fill in the European consultation on nanotechnologies at a mobile NanOpinion station or online¹?

- yes no don't know

13. How much are you interested in further information on nanotechnologies?

not at all										very much interested	
0	1	2	3	4	5	6	7	8	9	10	

Thank you for your time!
Please hand over this sheet to the organiser and get your nano-souvenir!

¹ www.nanopinion.eu **XX precise link here**



INFORMED CONSENT:

NanOpinion **Monitoring public opinion on Nanotechnology in Europe**

*European Commission Seventh Framework Project
(Coordination and Support Action – Grant Agreement No. 290575)*

Declaration of Consent

Name of participant:

Name of contact:

Insert third party's representative here:

Executive Summary

Dr. Joana Namorado from the Directorate Health-DG RTD – European Commission, responsible for Ethics and Gender Issues, provides good guidance on informed consent (Namorado 2011, page 28). An informed consent has to answer and consider following questions:

- What is the research? Purpose, duration and description of project aims.
- foreseen risks and benefits, are there alternatives
- confidentiality, treatment/ compensation and information
- contact for rights and claims; injury to the subject
- voluntary participation or Condition of participation
- no penalty or loss on stopping



The following informed consent of NanOpinion gives detailed answers to the above mentioned questions to make sure, that the rights of each participant are ensured.

Project aims

NanOpinion, which launched on May 1, 2012, is a €2 million, 30 month project bringing together 17 partners from 11 countries. Together, they will monitor opinions on nanotechnology, build an online portal for information and debate, and produce new content with media partners in four countries.

Investigation of opinion will use an innovative multi-stranded approach, focusing on dialogue. It will include surveys, social media, street labs, and events in public spaces such as science centres and shopping streets. And it will also carry out intensive workshops and discussions with lay people, engaging them in dialogue and discussing their assessments of nanotechnologies. It will draw together and synthesize the results of past EC projects in this area, and the web portal will provide access to new materials on the risks and benefits of nanotechnologies and to the best existing text, video, animation and sound items that relate to debate about nanotechnology.

The project partners will also work with schools and teachers, and develop education materials which will be offered as a lasting resource on the web. In addition, the project will distil recommendations for policy-makers on future engagement with nanotechnologies.

Storage of personal data

During the course of the project, personal data will be collected by means of observation, interviews and group discussions. This data is used to develop and to evaluate the success criteria for citizen-science and dissemination activities undertaken in the project NanOpinion.

The data will be used only within the project framework of NanOpinion, and will not be made accessible for any third party. It will not be stored after the end of the project.

The data do not contain the names or addresses of participants and will be edited for full anonymity before being processed (e.g. in project reports).

Audiovisual material

Videos and photographs taken during the course of the project may contain the pictures of participants. NANOPINION may use these videos and photographs in public forums, on websites or in conferences in order to inform about the project. Each participant allows the project NanOpinion to use the said materials.

Each participant may demand removal of photographs or videos from public forums and websites by simple request. Subject to technical feasibility, NanOpinion agrees to remove the requested items without delay.

Instructions and advice

An identified contact person will be available for project-related instructions and advice. Each participant may gladly discuss questions and problems with the contact person at any time.



Code of Conduct

Participation in NanOpinion is meant to be as agreeable and pleasant as possible for all those involved. Therefore, all participants agree to respect the following rules:

- Racism and discrimination: racist comments, discrimination on the basis of sex, age, or disability, publication of racist or sexist pictures and insulting persons are strictly banned.
- NanOpinion may not be abused for political, religious or advertising purposes.
- Infringements of copyright laws are not permitted.
- It is only allowed to publish one's own texts and pictures. Publishing pictures from the account of another person is not permitted without this person's consent.

All participants' conduct towards other users should always be appropriate and never offensive or depreciating.

Consent

After having stated these general conditions and rules, we are looking forward to a good cooperation and positive project results. We would like to thank you in advance for your participation in the project NanOpinion.

The undersigned declare that they understand and consent to the conditions and rules of NanOpinion.

Both parties receive a copy of this declaration of consent.

Participant's signature:

Location, day/month/year

Contact's signature:

Location, day/month/year



Bibliography

Powerpoint Presentation from Dr. Joana Namorado, Ethics, Gender Issues Directorate Health-DG RTD – European Commission at the Austrian National Contact Point FFG: http://rp7.ffg.at/upload/medialibrary/Namorado_Ethics.pdf (September 2011, page 28).

