



SCIENCE PICNIC

OF POLISH RADIO AND THE COPERNICUS SCIENCE CENTRE

EVALUATION SURVEY

**FOR THE 18th SCIENCE PICNIC
of Polish Radio and Tthe Copernicus
Science Centre**

Report on the qualitative survey

Warsaw, June 2014

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1 About the survey

This survey was conducted by the Public Opinion Research Centre at the National Stadium among the participants of the 18th Science Picnic, on 31 May 2014 between 12 noon and 8pm.

Opinions about the Science Picnic were collected from participants aged 10 and over. The questions were asked as people were leaving the National Stadium. Total sample size was 1277 individuals.

The majority of questions were answered by all respondents. If a particular question applied only to a specific group of respondents, their number is included in the relevant table below.

The sample was selected using the “streaming” method. The interviewers recruited respondents at five exit gates (all that were open). In sum, they conducted approximately 160 interviews per hour.

The questionnaire was supplemented by an online survey using a dedicated email address. During the Picnic, interviewers handed out 4000 information cards listing an email address where visitors could send their views if they did not wish to answer questions at the time .

The questionnaire included several open questions, which were answered in a variety of different ways; the largest code of answers encompassed over 460 items. To counter this, recoding was used to classify tens or hundreds of differing answers into a more manageable number of categories. Such recoding makes it possible to group the collected materials into a certain framework; although this is imperfect and somewhat simplified it is the only way of presenting opinions and assessments in a structured way.

2 Socio-psychological profile of participants of the 2014 Picnic

2.1 Social and demographic parameters

The Picnic attracted both men and women, although the higher number of attending women (55.1%)¹ is unlikely to be a coincidence. Women form slightly more than half of Polish society (51.6%); more women (19%) than men (14.8%) have a higher education²; and more women than men are involved in children’s education³. It is no wonder, then, that they dominate at a mass event dedicated to science.

Most of the participants were children under 18 years old (26.4%) and young people aged 19-34 (31.1%); older visitors were usually accompanying children⁴.

A large proportion of guests live outside Warsaw and its metropolitan area. All of Poland's regions (voivodships) were represented, with the highest number of visitors from Mazowieckie, followed by

¹ 55.1% of the participants at the Picnic were women, and 44.9% were men

² Polish Census 2011. Population. Social and demographic structure. Main Statistical Office (GUS) 2013

³ See e.g. “The role of women in society”; Public Opinion Research Centre report, March 2013

⁴ People aged 35-50 comprised 24.4% of all visitors; of those, 17.9% attended with children. Participants aged 51 and above comprised 16.1%.

Lubelskie and Łódzkie voivodships. 65.7% of participants live in Warsaw and a further 10.3% in its metropolitan area (in places such as Łomianki, Falenica, Piaseczno, Brwinów, etc.).

A third (32.9%) of the visitors are still studying, half (15.7%) of whom at the middle and high school levels. The majority of participants who are no longer studying (66.1%) have a higher education degree (41.9%)⁵.

2.2 Hobbies and pastimes

Picnic participants reported a diverse array of different interests, mentioning over 200 of them – a very impressive number. This suggests that for the most part they are people with an above average range of interests. None of the listed hobbies or pastimes were seen to dominate. Recoding revealed that the most common interests, in relative terms, fall under the categories “culture and the arts”, “sports”, and “mathematical and natural sciences”.

2.3 Reasons for attending this year’s Picnic

Half the participants selected a neutral answer: “The Picnic is an interesting way of spending free time”. Every fifth visitor declared that they are personally interested in science or would like to expand their knowledge. The National Stadium itself turned out to be less of a draw than expected.

What most attracted you to this year’s Picnic?	
Tick a maximum of three answers.	
The Picnic is an interesting way of spending free time.	50.3%
The Picnic is good fun.	39.2%
The Picnic is an opportunity to see the National Stadium.	28.1%
I’m personally interested in science.	22.6%
The Picnic is an opportunity to acquire or expand my knowledge on a particular subject.	21.7%
I have brought my kids so they can learn new things.	19.1%
I was encouraged by friends.	18.6%
The Picnic is an opportunity to find out how science influences our everyday lives.	13.2%
The Picnic is an opportunity to meet scientists.	7.8%
I was encouraged by my teacher(s).	5.7%
I was encouraged by my parents.	3.9%
I was encouraged by someone or something else.	7.4%

⁵ On the national scale, people with a higher education degree comprise 17% of the population.

The data shows a high degree of variation:

- Men (29.1%) are more likely to be personally interested in science than women (17.4%)
- Women (21.8%) are more likely than men (15.9%) to have attended the Picnic as a way of educating their children
- The majority of visitors aged between 35 and 50 (52.1%) also hoped to educate their children
- The option of seeing the National Stadium was most frequently cited by people living outside Warsaw and its metropolitan area (35.5%)
- Being able to expand their knowledge was the most significant factor among two very different groups of visitors: people aged 18 and under (24% in under-15-year-olds and 26.3% among 16-18-year-olds) and the oldest visitors, aged 65 and above (39.7%).

3 Participation in previous Science Picnics

This year’s Science Picnic attracted high numbers of first-time visitors (60.1%) as well as regular guests (39.9%); 8.1% of the latter have visited the Picnic at least five times before. The greatest fans, who have attended 17 or all 18 Picnics, comprised 0.5%.

This leads us to the conclusion that the Science Picnic continues to be an attractive format and its aim of reaching new social groups is effective.

Analysing variation in terms of gender and age, for the majority of visitors this was their first Picnic; the exception is the group aged 65 and above, where the situation is reversed (58.6% have attended at least one Picnic before). This is a niche situation, in which the least numerous group (N=58) is also the most likely to make a return visit if they are impressed the first time. One of the older women put it very well: *I used to attend with my grandson. He has grown up, but I still go.* In most cases, the oldest visitors attended the Picnic alone.

For obvious reasons, for the majority of visitors from outside Warsaw and its metropolitan area (71.6%) this was their first Picnic.

3.1 Science Picnic as an inspiration to take up an interest in science

All participants who were attending the Picnic for a second or subsequent time were asked whether the previous events affected their interest in a particular branch of science or research, or whether they have inspired or encouraged them in any way.

<p>Have the Picnics you attended previously increased your interest in a particular branch of science or research method? Have they inspired or encouraged you in any way? If so, in what way?</p> <p>N=507</p> <p>Recorded answers</p>	
The respondent named a specific branch of science which they have become interested in during a previous Picnic.	45.9%
The Picnic had a specific effect on the respondent and/or their family’s life.	28.0%

The previous Picnics have not inspired the respondent in any way – for a range of reasons.	13.3%
The respondent listed experiments either in specific fields or generally as a research method.	11.6%
The respondent learned about the latest scientific developments.	4.3%
The respondent rates the Picnic as interesting.	4.3%
The respondent rates the Picnic negatively.	2.4%
Other answers.	2.4%
Answers on a different topic.	0.2%
The respondent can't say what they feel inspired by.	8.8%

The majority of respondents have recalled a specific branch of science they have become interested in. The most popular were chemistry and physics (14.3% and 10.4% respectively), followed by biology (4.7%), astronomy (3.9%), history (3.3%), and robotics (3.0%).

Secondly, it is worth stressing that the participants described how the previous Picnics have affected their attitudes and behaviour, and their own and their family's lives. This was described in a variety of ways: some participants have been encouraged to expand their knowledge (9.4%) or study scientific subjects (3.9%); in some the event has awakened a passion for science/learning (2.0%); some have decided to choose scientific classes at school or study science at university (1.8%); some have found new ways of teaching their own children or, in the case of teachers, their pupils (1.8%); some have started conducting scientific experiments themselves; some have changed their lifestyle (1.6%); and some have started reading scientific literature (0.6%).

Among the participants who stated that the previous Picnics have not inspired or encouraged them in any way, we can differentiate two main types of attitudes:

- They are not interested in the Picnic/they don't expect or need any inspiration to do with science or knowledge in general, and they attended the Picnic either for fun or out of duty (for example to bring their grandchildren).
- They are interested in the Picnic as a way of presenting science, but it did not inspire them in any way because they are already interested in science/they are scientists themselves and came along to see what their colleagues are doing, or they didn't learn anything new.

There was a rare, though noteworthy, category of people who complained about the general ambience of the Picnic, such as noise and an excessive number of children, preventing one from making the most out of the demonstrations.

4 Participation in the 2014 Science Picnic

4.1 Other people accompanying visitors to the Science Picnic

The Picnic is an event with a universal appeal, and can be enjoyed as a day out with a partner, family and/or friends.

Who did you attend the Science Picnic with?	
Please tick all that apply.	
Spouse (husband/wife)	18.8%
Partner	14.3%
Father	4.3%
Mother	5.5%
<i>Both parents</i>	<i>7.5%</i>
Child/children	25.3%
Sibling(s)	7.2%
Other family (aunts, uncles, etc.)	2.7%
Friends	31.3%
Other	5.5%
Attended alone	12.5%

NOTE. Since the respondents were aged 10 and above, some of them included children; they answered that they attended the picnic with their mother/father or other guardian, and the majority (7.5%) attended with both.

4.2 Duration of visit to the Picnic

The interviewers asked the respondents what time they arrived at the Picnic, and then recorded the time when the interview was conducted. The information was used to calculate the time each person spent at the event. Most participants spent at least two hours at the Picnic.

Duration of visit to the Picnic	Around an hour	31.1%
	2-3 hours	29.3%

	3-4 hours	20.9%
	Over 4 hours	18.7%

People who wanted to talk to scientists or who were interested in educating their children were found to have spent the longest at the Picnic. In terms of social and demographic factors, education of the participant was somewhat significant, with visitors with a higher education staying the longest. For respondents aged between 35 and 50, who also spent longer at the Picnic than average, it should be remembered that a majority of them attended with children.

People who spent the shortest amount of time at the Picnic were those who came mainly to see the National Stadium, or who attended with friends for social reasons.

5 The most and least interesting topics/presentations at the 2014 Science Picnic

5.1 The most interesting topics/presentations

Answers to the question about the most interesting topics/presentations were found to be extremely varied; the full answer code numbered over 460 items. The variety shows the different perceptions of visitors and the diversity of their interests. Some participants named simply the topics that attracted their attention, such as physics, cars, etc. Others were more precise and wrote answers such as “the shape-memory materials”, “the cars, especially the rollover simulator”, etc. Many participants remembered just the institution/university whose stand they spent the most time at; some identified it very generally and simply wrote “university/polytechnic” without specifying, others gave the name, for example “University of Warsaw” or “Wrocław Polytechnic”, and others still noted details such as “Institute of Chemistry, University of Warsaw”.

However, it would be debatable to assume that the more detail the given participant recalled, the greater their interest in the topic/presentation. First, the question about interests and hobbies allows us to assume that some individuals are generally interested in certain subjects. Second, the popular and mass character of the Picnic means the event attracts some people who are generally unprepared for the type of information presented. It is worth noting here that the majority of visitors attended the Picnic for the first time. There is another context to the issues of perception: crowds of attendees, queues to gain access to particular exhibitor stands, and the poor signage of tents (more in Chapter 6) made it difficult or even impossible to fully enjoy/appreciate the presentations.

Our analysis of results should take into account that mathematical and natural sciences and engineering were represented by the greatest number of stands. As such, even though they were very well attended, it could be said that the automotive zone shown in a single (albeit large) area enjoyed outstanding popularity.

What interested you most at this year's Picnic? Please name topics or presentations. At which stands did you spend the most time?

Recorded data – responses

Mathematical and natural sciences, including physics, chemistry, biology, geology, maths	32.2%
Motoring/cars/motorbikes	27.6%
Engineering/technology, including robotics, automatics, engines, drones	18.2%
General university research, Polish Academy of Sciences, scientific stands	10.8%
“Fun” applications of science/scientific curiosities, such as drunk-vision goggles, molecular cuisine	8.2%
Social sciences, including economics, sociology, psychology, archaeology, history etc.	7.0%
Media/journalism/radio stands	5.0%
Arts/culture, e.g. music, National Museum, cultural institutions	4.6%
Medical sciences, healthy eating	4.1%
Demonstrations/stands by guests from abroad/embassies	3.6%
Agriculture/forestry/gardening/zoology	3.3%
Everything was interesting	2.7%
Parascience or subjects not directly linked to science, e.g. astrology, travel, National Stadium	2.6%
Circus/sports	2.2%
Demonstrations/experiments for kids; children's education	2.0%
Informatics/IT	1.6%
Business/finance, law, administration	1.4%
Negative opinion, e.g. didn't see anything because of crowds/didn't find the Picnic interesting	1.3%
Other subjects linked to science, e.g. criminology	0.9%
Public administration, ministries	0.9%
Sponsors/advertising	0.9%
The humanities, foreign languages	0.5%
Other answers, e.g. competition-prize cars, individual presentations	1.1%
Others off-topic, e.g. free food and drinks	0.9%
Don't know	2.5%

The table omits answers that are illegible and unclear (0.7%).

The same question was asked of children accompanying adult respondents. The most notable difference is that children were less interested in cars; if they were interested in scientific disciplines, they usually talked about experiments while adults mentioned “physics”, “chemistry” etc.; children were more interested in archaeology, adults in radio stations.

What interested you most at this year’s Picnic? Please name topics or presentations. At which stands did you spend the most time?	
Answers from children accompanying adult respondents (N=349)	
Recorded answers	
Mathematical and natural sciences, including physics, chemistry, biology, geology, maths	18.6%
Motoring/cars/motorbikes	16.6%
Engineering/technology, including robotics, automatics, engines, drones	15.5%
“Fun” applications of science/scientific curiosities, such as drunk-vision goggles, molecular cuisine	11.7%
Social sciences, including economics, sociology, psychology, archaeology, history etc.	6.9%
General university research, Polish Academy of Sciences, scientific stands	6.3%
Arts/culture, e.g. music, National Museum, cultural institutions	5.2%
Agriculture/forestry/gardening/zoology	3.4%
Circus/sports	3.2%
Demonstrations/stands by guests from abroad/embassies	2.6%
Parascience or subjects not directly linked to science, e.g. astrology, travel, National Stadium	2.0%
Media/journalists	2.0%
Business/finance, law, administration	1.4%
Demonstrations/experiments for kids; children’s education	1.4%
Informatics/IT	1.1%
Public administration, ministries	1.1%
Medical sciences, healthy eating	0.9%
Sponsors/advertising	0.9%
Negative views, e.g. didn’t see anything because of crowds/didn’t find the Picnic interesting	0.3%
Scientists known by name	0.3%
The humanities, foreign languages	0.0%
Everything was interesting	3.2%

Other subjects linked to science, e.g. criminology	0.6%
Other answers, e.g. competition vehicles, individual presentations	2.3%
Others off-topic, e.g. free food and drinks	2.0%
Don't know	14.6%

The table omits answers that are illegible or unclear (1.1%).

Opinion is always divided; some respondents were not interested in either mathematical and natural sciences (17.6%) or cars (8.3%), the subjects which attracted the highest number of participants. Those who were not interested in the above subjects usually described other interests and hobbies: half said they enjoyed sports and various cultural activities.

39.8% of respondents did not indicate a specific subject of interest, either describing everything as interesting (23.6%) or expressing no opinion (16.25%).

5.2 Scientists/popularisers of science the participants talked to during the Picnic

A large number of visitors participated in a more active way than simply viewing exhibits and demonstrations; 40.4% of respondents said that they also talked to scientists and popularisers of science. The least likely group to talk to presenters were middle school students, and the most likely were primary school students and adults with a higher education.

Did you talk directly to any of the scientists/popularisers of science who were presenting or conducting experiments? Did you ask them any questions?	Yes, one scientist/populariser of science	25.1%
	Yes, more than one scientist/populariser of science	15.3%
	No, none	59.1%
	No data	0.5%

One way of finding out how actively the participants engaged with the Picnic was by asking them about names of scientists/populariser of science they talked to, the subjects they discussed, and the name of the institution they represented.

Participants rarely remembered names; they were more likely to name the institute or university, and they were the most likely to remember the topic or branch of science. The main subjects were natural sciences (in particular physics and chemistry) and technology. Archaeology was the most popular social science; among the presenters from abroad, Russians attracted the most attention.

Who did you talk to? If you don't remember the name, please write down the name of the institution the person represented, or the field they work in.

Individuals the visitors talked to, topics of conversation, institutions they represented

N=491

Recorded data

Mathematical and natural sciences, including physics, chemistry, biology, geology, maths	39.7%
Engineering/technology, including robotics, automatics, engines, drones	17.5%
General description of an institution, e.g. universities, Polish Academy of Sciences	9.4%
Social sciences, including economics, sociology, psychology, archaeology, history etc.	8.8%
Demonstrations/stands by guests from abroad/embassies	5.9%
"Fun" applications of science/scientific curiosities, such as drunk-vision goggles, molecular cuisine	5.1%
Medical sciences, healthy eating	4.3%
Media/journalists	4.3%
Agriculture/forestry/gardening/zoology	3.5%
Scientists known by name	3.5%
Motoring/cars/motorbikes	3.1%
Arts/culture, e.g. music, National Museum, cultural institutions	2.9%
The humanities, foreign languages	1.8%
Informatics/IT	1.6%
Business/finance, law, administration	1.2%
Other subjects linked to science, e.g. criminology	1.2%
Circus/sports	0.8%
Public administration, ministries	0.6%
Sponsors/advertising	0.4%
Parascience or subjects not directly linked to science, e.g. astrology, travel, National Stadium	0.2%
Negative views, e.g. didn't see anything because of crowds/didn't find the Picnic interesting	0.2%
Everything was interesting	0.2%
Other answers, e.g. competition vehicles, individual presentations	2.2%
Others off-topic, e.g. free food and drinks	1.6%
Don't know	7.3%

The table omits answers that are illegible and unclear (1.0%).

It is worth noting the following:

- The opportunity to talk to scientists was one of the least common reasons given for attending the Picnic (7.8%); the fact that as many participants did end up talking to them on such a wide variety of subjects is evidence of the Picnic’s success in popularising science.
- Participants also talked to representatives of student science clubs.
- While cars were generally popular to look at, they did not provide many opportunities for personal interaction with scientists.

6 Assessment of the 18th Science Picnic

6.1 Programme

The great majority of participants in the Picnic expressed a positive opinion about the event. On a scale of 1 (not at all interesting) to 5 (very interesting), the average score given to the Picnic was 4.17. This average was influenced by the relatively low number of midrange answers (3), expressing the opinion that only part of the programme was interesting.

Participants who attended the Picnic motivated by external factors – encouraged by teachers, parents or friends – were more critical of the event. The programme received the highest scores from visitors who attended hoping to talk to scientists and popularisers of science.

Generally, how would you rate the programme of this year’s Picnic?	Very interesting	38.4%
	Quite interesting	39.9%
	Some of the programme was interesting, some was not interesting	17.5%
	Not very interesting	1.9%
	Not at all interesting	0.2%
	Don’t know	1.9%
	No data	0.2%

Reasons for attending the Picnic:	Generally, how would you rate the programme of this year's Picnic?				
	Very interesting	Quite interesting	Some of the programme was interesting, some was not interesting	Not very interesting	Not at all interesting
I was encouraged by my teacher(s).	34.3%	27.1%	37.1%	1.4%	0.0%
The Picnic is good fun.	45.3%	38.6%	14.9%	1.2%	0.0%
The Picnic is an interesting way of spending free time.	40.3%	41.3%	16.5%	1.9%	0.0%
I have brought my kids so they can learn new things.	42.7%	43.1%	13.0%	1.3%	0.0%
The Picnic is an opportunity to see the National Stadium.	35.1%	44.8%	17.3%	2.3%	0.6%
The Picnic is an opportunity to acquire or expand my knowledge on a particular subject.	43.1%	40.9%	15.0%	0.7%	0.4%
I'm personally interested in science.	37.2%	41.8%	19.9%	0.7%	0.4%
The Picnic is an opportunity to meet scientists.	56.1%	34.7%	9.2%	0.0%	0.0%
The Picnic is an opportunity to find out how science influences our everyday lives.	42.5%	42.5%	15.0%	0.0%	0.0%
I was encouraged by friends.	29.9%	42.7%	23.9%	3.4%	0.0%
I was encouraged by my parents.	32.0%	40.0%	24.0%	4.0%	0.0%
I was encouraged by someone or something else.	33.0%	38.6%	21.6%	5.7%	1.1%

Most of the midrange scores (3) were given by middle school (37.2%) and high school students (31.3%). Participants who have completed their education described the programme more positively. The lowest degree of criticism came from older visitors (aged 51 and above), and participants from outside Warsaw and its metropolitan area.

6.2 Assessment of how information was presented

Participants in the Picnic generally rejected passive ways of acquiring information such as listening to lectures or reading flyers or posters. They preferred demonstrations and experiments, although they were not very likely to use their own initiative; fewer participants engaged in activities on their own than in those conducted under the supervision of attending scientists.

Assessment of how information was presented	Not applicable	Not at all inspiring	2	3	4	Very inspiring	Average on the 1-5 scale
Demonstrations (scientists conduct the experiment with visitors watching)	1.2%	1.7%	5.4%	16.8%	27.7%	47.2%	4.15
Demonstrations on stage	0.8%	1.7%	2.3%	8.1%	20.5%	66.6%	4.49
Experiments (participants carry out certain tasks under the supervision of scientists)	1.6%	1.9%	2.4%	9.2%	22.0%	62.9%	4.44
Independent activities (scientists give general advice, but the incentive is with the participants; e.g. games, workshops)	2.3%	3.2%	7.1%	18.1%	31.0%	38.2%	3.96
Talking to scientists	3.6%	6.0%	9.6%	19.8%	28.3%	32.8%	3.75
Lectures (talks by scientists, min. 15 minutes)	5.2%	19.3%	20.6%	24.4%	16.8%	13.8%	2.84
Flyers, posters (placed on or around individual stands for participants to read)	0.9%	20.7%	20.5%	21.9%	18.3%	17.6%	2.92

NOTE. "Not applicable" means that the respondents did not participate/had no contact with a particular activity.

6.3 Elements of the Picnic the visitors did not enjoy

A third of the participants (31.4%) had no criticisms; they answered the question "What was the least enjoyable element of the Picnic?" either by saying that they enjoyed everything, or that nothing bothered them. Around a tenth (11.2%) expressed no opinion. The remaining 55.3% participants expressed various criticisms.

The most common criticism concerned the crowds of visitors, and the fact that stands were "besieged" as a result, preventing the participants from seeing demonstrations, etc. Our analysis of responses

indicates that the Picnic's formula will need to be reconsidered. Should the area available to stands be increased? Should they be made more accessible by being open on three sides rather than just one? How can queues be regulated? Should a science event featuring talks about healthy eating/molecular cuisine permit fast-food kiosks? Can water be provided at a reasonable cost? These questions and many others should be considered following this survey of the participants' opinions.

The most far-reaching suggestions, such as extending the Picnic to two days or profiling it such that children and school trips do not get in the way of other participants, may need to be considered in the future if the Picnic is to preserve its unique character.