

Every year during the Science Picnic, sociological studies are carried out. Their aim is to learn about participants' opinions concerning the programme and course of the event, as well as to find out how the role of science in the Polish society is viewed. This year's study was already the seventh edition, and for the fourth time it was carried out by the Evaluation and Analysis Department of the Copernicus Science Centre.

Report from the study includes a number of comparative analyses related to years 2007–2013, as well as an interpretation of the obtained results. It is also a valuable material for those interested in how people view the role of science in the Polish society, for organisations and institutions dealing with the promotion of science or for the organisers of events that share the Picnic's objectives.

The report is not revolutionary – every year Picnic participants assess it as a very good one, as was the case in 2013. The report includes the following information:

- 57.9 percent of respondents visited the Picnic for the first time ever. This is 12 percentage points more than a year ago and 15 percentage points more than in 2011. This means that, perhaps due to the new location, the Picnic was visited by a large group of people who had never done it before.
- Almost 93 percent of respondents intended to 'return' to the Picnic. This means that more than nine out of ten people were so satisfied with their visit to this year's Picnic that they intend to spend a Saturday in summer next year at the Picnic again. What is important, more people declared that they were positive about their plans – they selected 'definitely yes' as their response (nearly 6 out of every ten respondents), and only 35 percent said that they would rather do it. In total, 7 percent of the interviewees rather (4.1%) or definitely (3%) did not plan to visit next year's Picnic. It is worth noting that the ratios of those who selected 'definitely yes' and 'rather yes' have changed to the better – until recently these percentages were equal (44 and 45 percent of respondents). In 2013, 57.7 percent were positive, and 35.2 percent said they would probably come.
- One third of respondents would like to see more presentations related to the humanities, social studies and art.
- Independent experimenting was the favourite activity at the Picnic. On a 5-grade scale of marks, it was the only activity that had a mean of 4.11, while its mode (the most frequently provided value) was 5. Lectures turned out to be the least liked activity with a mean grade of 2.67 (and mode of 3).
- Experiments were also regarded by the visitors as the form that inspires most to independent knowledge broadening. Such view was shared by 37.1 percent

of respondents. The subsequent option (independent classes) obtained a result that was almost three times lower – 12.8 percent.

→ Interactions with scientists were a very important element of participation in the Picnic. It is because of them and the programme prepared by them that people come to the Science Picnic. Almost 70 percent of visitors wanted to learn about their work, and 85 percent wanted to find out something interesting. These elements could be realised by the scientists participating in the Picnic, entirely (learning about the work of scientists) or to a large extent (finding out something interesting). Conversations with scientists were considered by 12 percent of visitors to be most inspiring to broaden their knowledge and were enjoyed (grades 4 and 5) by over 65 percent of respondents.

Expectations and reasons for coming

The main expectation (indicated by over 90 percent of people!) was to enjoy quality time.

Questions about expectations show what people expected when they decided to come to the Picnic. Visitors were asked to tell whether the statements applied to them or not; they were asked to confirm or negate after reading each of the reasons (that is why the percentages do not make up 100).

What do you expect from the Science Picnic?

Spending quality time – 93.27%

Having good fun – 88.94%

Learning something new – 84.62%

That it will inspire me – 73.56%

That it will show me how scientists work – 68.27%

That it will inspire my children to study,... – 56.97%

The most important reason for coming: 'I want to learn about the work of scientists'

Visitors were asked why they had come to the Picnic. The chart below shows the popularity of individual answers among the visitors (they had to choose either 'YES' or 'NO' after each statement).

Reasons for coming to the Picnic

- I want to learn about the work of scientists – 54.09%
- I wanted to see the National Stadium – 53.37%
- I participated in a different event or visited the CSC – 46.15%
- I like festivities, picnics, fairs – 42.79%
- I read the programme and decided it was worth coming – 41.35%
- I listen to the Polish Radio and became interested in this event – 38.22%
- The children wanted to come – 35.10%
- It will be useful for my school/work/studies – 31.25%
- Other reason – 30.53%
- I always come – this is not my first Picnic – 30.53%
- I want to see what my taxes are spent on – 23.32%
- I was interested in the competitions related to the Picnic – 21.39%

The willingness to learn about the work of scientists was the most frequently selected reason for coming to the Picnic. It was indicated by almost 55 percent of respondents. The second most important reason for coming was the willingness to see the National Stadium. Until now, such an option was naturally not available among the answers (the Stadium could not be visited at the Picnic because the event used to be organised elsewhere). A visit to the Stadium was indicated as a motivation for coming by 53.4 percent of respondents. Participation in a different event organised by the Copernicus Science Centre or a visit to the CSC were the third and definitely important reason for coming from the perspective of the Picnic's organisers. This answer was indicated by over 46 percent of respondents. Among those 46 percent, 46 percent had visited the Science Picnic before, which means that 53 percent of respondents who indicated participation in a different event or a visit to the CSC as their reason for coming had something different in mind than the Science Picnic. This in turn means that the Centre successfully develops a group of people interested in science who like the way it is presented by the CSC.

Interaction with scientists

It is for the scientists that people come to the Science Picnic

Interactions with scientists are an important element of participation in the Picnic. It is because of them and the programme prepared by them that people come to the Science Picnic. Almost 70 percent of visitors wanted to learn about their work, and 85 percent wanted

to find out something interesting. These elements could be realised by the scientists participating in the Picnic entirely (learning about the work of scientists) or to a large extent (finding out something interesting) during conversations with visitors. We also asked the visitors how important various features and elements of such conversations were. In the next question, we asked them to evaluate to what extent these features and elements were present during their conversations. The answers provided are presented in the table below.

	How important is it in a conversation with a scientist...		How do you evaluate the scientists met at the Picnic in this regard?	
	mean	mode	mean	mode
<i>Scientist's willingness to engage in a conversation</i>	4.84	5	4.70	5
<i>The fact that the scientist can talk about science in an interesting manner</i>	4.82	5	4.65	5
<i>The feeling that the scientist enjoys the conversations and wants to share his/her knowledge with me</i>	4.77	5	4.55	5
<i>Simple, understandable language</i>	4.76	5	4.62	5
<i>The feeling that I talk with an enthusiast</i>	4.71	5	4.62	5
<i>The fact that the scientist talks about his/her own research, the things he/she deals with on everyday basis</i>	4.43	5	4.41	5

Features and elements of conversations with a scientist in the opinion of visitors.

Assessment of importance and presence.

In the analysis of assessments of the presence of individual features and elements of conversations with a scientist, it needs to be taken into account that the assessment involved only 32 percent of respondents, which in the case of interviews translates into 130 individuals.

Practically all features and elements of conversations with a scientist were evaluated by the respondents as very important; only the fact that a scientist talks about his or her own research carried out on everyday basis turned out to be important (and not 'very' important). The presence of these features and elements was also not a problem to the scientists at the Picnic – the most frequently selected answer with respect to all mentioned elements was 5, that is 'very important' (for importance) or 'very good' (for presence).

The willingness to engage in a conversation on the part of the scientist was definitely the most important element – it is difficult to interact with somebody who shows no interest and

treats an inquisitive visitor like an intruder. This answer received grade 4.84 on a 5-grade scale, which means that it is crucial for a satisfactory interaction with a scientist. People who had the opportunity to talk to scientists awarded their meetings grade 4.7, which is still high although lower than the evaluation of this factor's importance. This means that some of the visitors must have decided that their conversation could have been better – the willingness to engage in a conversation on the part of the scientist could have been more apparent. However, this element could hardly be improved much since there were no grades 1 and 2 (1 appeared only twice and 2 appeared once – which is a marginal number), and grade 3 was given only seven times out of the total number of 130 responses. Both in the case of the assessment of importance and the assessment of the conversation itself, the most frequently selected answer was 5, that is very important / very good.

The results related to the statement 'this person can talk about science in an interesting manner' are practically identical. The assessment of its importance is identical, as is the assessment of conversations in which the respondents were involved. While it is hardly surprising that we are willing to talk to people who discuss science in an interesting manner, we should be glad that the scientists present at the Picnic have this ability, which is proven by a high index of satisfaction with the talk (once again 5 was the most frequently selected answer).

The subjective feeling that scientists enjoy the conversation, that they want to share their knowledge and that they do not do it as punishment or treat it as their official duty is also important. Respondents awarded the importance of this factor with grade 4.77 (hence almost as high as the previously mentioned features and elements of a satisfactory talk with a scientist), and its presence – slightly lower with grade 4.55. In spite of this lower mark, the most frequently indicated value was 5, yet 3 appeared more often (12 out of all 130 provided answers). The situation with the usage of simple, understandable language (mean assessment of importance 4.76 and presence 4.62) and the feeling that the visitors were talking to enthusiasts (4.71 and 4.62 respectively) looked practically the same. The most frequently selected answer with respect to both elements was 5 (in both categories).

The question of whether the visitors talked to people discussing their own research and daily activities was considered the least important by the respondents. The mean assessment of importance was in this case 4.43 (mode of 5), and the presence of this element – 4.41 (also mode of 5). This criterion is the only one where the assessments of importance and presence were equal, which implies that the scientists satisfied the needs of the respondents in this regard.

Achievement of the Picnic's objectives – dialogue with scientists and relations between science and everyday life

One of the main objectives of the study carried out at the Science Picnic was to determine to what extent it achieves its objectives, which include:

- arousing curiosity and inspiring to independent knowledge broadening,
- inspiring a dialogue between scientists and the society and showing what the scientists' profession, motivations and methods of work really look like,
- showing links between scientific research and everyday life and making people aware of the role of scientists in the development of civilisations.

One of the ways to search for answers to those questions was to ask the visitors to what extent in their opinion the Picnic showed them the work of scientists, inspired them, enabled them to talk to scientists and showed them relationships between science and everyday life, as well as the role of science in the development of civilisation.

After each statement was read, respondents were asked to say whether it applied to them (hence whether they did something, learned something or were planning to do something) or not. Naturally, these answers are just declarations, but they show what the Picnic offered the respondents and what it failed to offer.

Acquired data are presented in the chart below.

Did this year's Picnic show you...?

That it is worth getting interested in contemporary science – it provides a broader perspective on the world around us – 93.3%/6.7%

That the society needs science – 93.3%/6.7%

The relationship between scientific research and everyday life – 85.6%/14.4%

That science is the answer to the challenges of contemporary world – 84.5%/15.5%

That it is possible to have a normal chat with a scientist although he or she deals with complicated matters – 84.5%/15.5%

What scientists deal with on everyday basis – 69.7%/30.3%

Why we should invest in science development in Poland – 69.2%/30.8%

The priorities in the development of contemporary science – 58.4%/41.6%

How scientists work – 57.5%/42.5%

What (within the scope of science) your taxes are spent on – 34.1%/65.9%

Two statements were most broadly accepted by the visitors – that the Picnic showed them that the society needs science and that it is worth getting interested in contemporary science because it provides a broader perspective on the world around us. As many as 93.3 percent of respondents agreed with each of these statements. These are very good indicators, which

should satisfy the organisers. They mean that at least in this regard the Picnic's objectives are definitely achieved.

Other statements were also accepted by high percentages of visitors:

- 85 percent of visitors believed that the Picnic showed them:
 - the relationship between scientific research and everyday life,
 - that science is the answer to the challenges of contemporary world,
 - that it is possible to have a normal chat with a scientist although he or she deals with complicated matters.
- Almost 70 percent of respondents indicated that the Picnic showed them:
 - what scientists deal with on everyday basis,
 - why we should invest in science development in Poland. Three out of ten respondents did not find the Picnic helpful in acquiring this knowledge.
- Almost 60% of respondents believed that the Picnic showed them:
 - the priorities in the development of contemporary science,
 - how scientists work.

The only statement that less than half of the respondents agreed with was that the Picnic showed them what (in terms of science) their taxes were spent on. Only 34 percent of respondents agreed with that. Such a result may be surprising. And it may also imply that the respondents would have believed that they could say so if a message about the financing of scientific undertakings from the state budget had been addressed to them directly. Yet assuming that the respondents are aware of the fact that public universities and research institutes are financed from the state budget, and taking into consideration that 70 percent of respondents saw at the Picnic what scientists deal with on everyday basis, they should link these two issues, and seeing the stands and presentations prepared by the scientists, they should be able to answer the question of what their taxes are spent on.

Achievement of the Picnic's objectives – impact on the visitors

In order to verify whether the Picnic was successful in inspiring to independent science exploration, broadening knowledge and boosting interest in science, respondents were asked a number of questions concerning their plans. They could answer either that they were definitely or rather planning to do something or that they were definitely or rather not planning to do it. In some cases, the respondents refused to provide an answer in spite of the interviewer's efforts to obtain it – this resulted in marking 'no answer'. The chart shows what answers were given to the questions about the forms of broadening knowledge or feelings after the Picnic.

To what extent do you agree with the following statements?

definitely yes – rather yes – rather not – definitely not – no answer

I will be glad to tell others about something I have learned at the SP –

51.20%/31.25%/11.78%/5.77%

After experiencing the SP, I perceive the world and science as more interesting –

44.23%/37.50%/11.78%/5.29%/1.20%

After the Picnic, I want to know more about various things –

37.02%/43.03%/14.18%/5.53%/0.24%

I have heard or saw something here that inspired me –

31.01%/38.46%/22.12%/6.97%/1.44%

I plan to search for places in which I could learn about interesting things (e.g. the Science Festival, etc.) – 29.09%/34.86%/21.15%/13.22%/1.68%

I will look for science-related information (on the Internet, in newspapers) –

28.13%/32.45%/25.24%/13.46%/0.72%

I have learned here about a phenomenon that I would like to investigate –

21.63%/27.16%/33.41%/15.14%/2.64%

The SP has helped me to clarify my educational plans – to choose a school profile, a major, training courses, workshops – 7.69%/10.34%/17.55%/58.41%/6.01%

Three statements were definitely the most popular (over 80 percent of indications): that the respondents would be glad to tell others about something they had learnt at the Picnic (ca. 82.5%), that owing to the Picnic they perceive the world and science as more interesting (81.7%) and that they wanted to know more about various things (80%). The first statement is particularly important – respondents not only believed that they had learnt something interesting, but also found it so important that they wanted to share their knowledge with others and promote it. This is a very good result!

Almost 70 percent of respondents declared that they had heard or seen something inspiring at the Picnic.

Subsequent statements and the percentages of visitors selecting them are of immense importance. These statements relate to independent broadening of knowledge in the future, hence to the direct achievement of the Picnic's objectives. The results are as follows:

- 64 percent of respondents declared that they planned to search for places in which they could broaden their knowledge (e.g. the Science Festival).
- Over 60 percent of respondents planned to look for interesting science-related information on the Internet or in newspapers and broaden their knowledge this way.
- Nearly half of the visitors (48.8%) learned at the Picnic about a phenomenon that they would like to investigate.

These percentages are very high. Assuming that only 10 percent of those who declared scientific plans really carried them out, four, five or six percent of Picnic's participants who would broaden their knowledge after the event would still be a brilliant outcome. This also shows how much the Science Picnic is needed. The society has needs related to the broadening of knowledge. However, a catalyst is required, something that will actually make them do it. The Science Picnic seems to serve this function perfectly.