Researchers and science as a career

Experiences of a science festival: the impacts of the Researchers' Night Events 2010-2020

Results of the FAWORIT 2010-2020 projects – Fascinating World of Researchers in the Age of Technology – supported by the European Commission (FP7 & H220)

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ABOUT THE IMPACT ASSESSMENT

The impact assessment study measures the changes in the social attitudes and perceptions of the researcher year by year, focusing on the main target group, the 5–24 years old generation before and after the events. The socio-demographic characteristics of the participants and the general perception of the researcher are presented through qualitative and quantitative data.

- Before the event we conducted a secondary **analysis of existing statistical data**, of previous surveys and studies presenting the results and the data from the European Researchers' Night programs of 2010–2013 are the basis of the comparison;
- a **short (National) survey** of a representative sample of the Hungarian population to assess the current situation was used;
- an **on-line survey** after the event was conducted among the participants of the event;
- **semi-structured interviews** were conducted with MA, PhD students and early stage researchers from the field of social sciences and natural sciences.

1. Methodology

The methodology of this work is based on the 10 years' experience of assessing the social impacts of the Event, and on a previous book (Geambasu et al. 2013) The social impact analysis in the last eight years followed a double goal: on one hand it aimed at revealing the popular representations of science and that of the researcher, on the other it meant to collect both the expectations towards the Researchers' Night and the feedbacks and opinions concerning the Event. It consisted every year of a quantitative and a qualitative part; according to the methodological standards of social sciences the main aim of qualitative methods, in our case of the focus groups and desk research was to explore basic ideas concerning our research questions, while the quantitative analysis focused on the socio-demographic background of the visitors, on the factors influencing career pathways, the changes of perception, and attitudes towards scientists. In the present work we focus on the results deriving from the latter method. In the last six years, the impact analysis consisted of two surveys: a national survey and an on-line survey conducted only among the visitors of the Researchers' Night. The national survey is representative of the Hungarian population over 18 years. However, the second survey is not representative as our visitors do not cover the Hungarian population, especially in 2020 when the Event was organised fully online, which had some effects also on the impact assessment. We will describe the relevant changes at each section. First and main change was that the collection of the contact sheets had to be left out from the assessment as there were no offline programmes; this part is therefore missing, which means that the impact assessment cannot precisely present the sociodemographic background of the visitors.

As for our methodology, Gábor et al. (2004, 2006) developed a special sampling method for quickly changing populations, like the visitors of a festival which method is best described in Ercsei et al. (2010). In our research we adopted their methodology: throughout the Researchers' Night programmes, at each venue several interviewers (two at every site) asked visitors selected randomly to fill in a 5-question short questionnaire. In 2020 we had to find another way to reach online participants: we contacted them by using their registration data (prior to that we collected their consent via our website for that). After the Event we sent out an online questionnaire. According to our experiences participants of the programmes are opened to answer the on-line questionnaire, thus the response rate is higher than 25%.

1.1 National nationwide survey

Like our methodology, the National survey was also a bit modified compared to the previous years. In 2020 we could develop a longer survey, as the online version proved to be more cost-effective, thus this year we conducted an independent 10 minutes long questionnairel to describe the attitudes of the Hungarian population towards science as a career, scientists in general and Marie-Curie fellows in particular. Beside these questions we collected data about the prestige of certain professions, to understand the factors influencing the prestige of research as a career. We also analysed the knowledge about some basic scientific truth, to have some hints about the impact of science on the knowledge of everyday people.

1.2 On-line survey

After the Event, using the e-mail addresses obtained through the registration, the visitors' opinions were analysed in a 15 minutes long on-line survey. The survey helps us to describe the socio-demographic characteristics of the attendants of the programmes, also to better understand the perception of researchers' role in society and to identify the most effective and popular activities. Together with the National survey we can compare the differences between the attitudes toward researchers and expectations of participants toward a career as a researcher in the future of the Hungarian population and the participants of the Event. We received 885 replies in 2020.

¹ The 6 minutes long survey was the part of a so-called omnibus survey, and it is representative on the Hungarian population over 18.

This section of the report presents the most important social and demographic characteristics of the visitors (based on the results of the two surveys the survey conducted among the visitors registered for the Event and on the survey conducted on an online representative sample (national survey). The on-line registration form of the Programme was filled by 7594 people, and 2917 out of them subscribed to our newsletter and allowed us to contact them to respond to our questionnaire. The national survey gave us the chance to reach out to 1,000 people across Hungary.

In the following we present the gender and age composition of the respondents, further, the report describes their residential situation and their educational background. Finally, we present their economic status, and the typical groups of visitors.

2.1. Demographic and social characteristics of our visitors According

to the visitors' survey, women are in majority among the visitors in 2020 also, as in the earlier years. The tables (2.1. and 2.2.) show that the educational level and the age of the visitors are interconnected: the average visitor was only 35.5 years old in 2020, the most of them is 19 years old, and half of them are older than 34 years. It is a huge difference compared to the previous years; in the future we have to analyse whether the data collection method or the on-line events are behind this change. Till we can state that the visitors of the Hungarian Researchers' Night are much younger than the average of the Hungarian population, our visitors are typically young people.

Gender	Visitors' survey		National	survey
	2015	2020	2014	2020
Male	44.5	27	49.8	48.5
Female	55.5	73	50.5	51.5
N Total Valid	631	603	1000	1000

Table 2.1. The gender composition of the visitors (%)

Source: "Researchers' Night" Impact Assessment, Contact Sheets and Visitors' survey, 2012-20

This change in the age distribution of the visitors explains the changes in educational levels as well. There is still a high number of students, and a high ratio of BA/MA graduated respondents; the ratio of students is a little bit above 40%. However, in the case of the national survey, the average age of the respondents was much higher than the visitors of the Event, namely 43.78 years. The distribution of the educational level is dependent on this result; the majority of the respondents are graduates from school and 54.8% of them are employed. From the 1000-respondent

sample it is important to highlight that 52.7%, a significant majority declared to live in a town (not in the capital), which means that the Event for residents of rural towns and villages were less accessible in previous years or people are more open to online programmes in these regions. The ratio of residents among visitors from the capital (Budapest) and the country capitals is lower than in the previous years – a clear effect of online availability of the Event.

Age	Visi	tors' survey	Nation	al survey
	2015	2020	2014	2020
Mean	27.2	35.5	47.96	43.78
Median	22	34.0	39,00	43.0
Mode	17	19.0	71	46.0
Minimum.	10	10	18	18
Maximum:	74	85	89	87
Standard deviation		17.17		15.099 8
N Total Valid	615	591	1000	1000

Table 2.2. Age of respondents (years)

Source: "Researchers' Night" Impact Assessment, Contact Sheets, National and Visitors' survey 2012-'20

 Table 2.3. The highest educational level of the visitors (%)

Educational level	Visi	itors' survey	Nati sur	onal vey
	2015	2020	2015	2020
Max. 8 years elementary	35.1	22.9	28.8	6.8
Vocational school	0.2	1.5	22.2	28.7
High school graduate	30.0	27.0	31.3	38.8
Higher education	34.6	48.5	17.7	25.7
N Total valid	630	610	1000	1000

Source: "Researchers' Night" Impact Assessment, Contact Sheets, National and Visitors' survey 2012-20

Table 2.3. also suggests that it is children, high school students and their educated parents who form the core of our visitors. Universities attract many potential students (from high schools) through their Researchers' Night

Residence types	Visit	ors' survey	National	survey
	2015	2020	2014	2020
Budapest	55.0	35.3	18.1	20.4
County capital	9.5	18.8	17.9	21.9
Town	23.5	29.1	35.0	30.8
Village	10.6	16.7	29.0	26.9
Other	1.4	-	-	-
N Total valid	631	580	1000	1000

Table 2.4. The residence of the respondents – contact sheets

Source: "Researchers' Night" Impact Assessment, Contact Sheets, National and Visitors' survey 2015-20

Budapest, the capital of Hungary is typically most represented by visitors as 20% of the Hungarian population lives in and around Budapest, 40% of the GDP is produced in the capital and 60% of the Hungarian researchers live in and around Budapest. The population of the second largest city in the country is 1/10 of the population of the capital. This demonstrates the importance of Budapest and the relevance of organising most of our events to the capital. On the other hand, the countryside locations are extremely important to bring the NIGHT everywhere in Hungary.



Figure 2.1. The age of respondent according to the Visitors' survey

N=591 Source: "Researchers' Night" Visitors' survey, 2020

What we saw in 2020 when Covid-19 resulted in online programmes, accessible from everywhere, is that participation from the countryside, from both smaller cities and villages grew.

2.2 Social background of our visitors

In order to describe the social and economic status of our visitors we used a general indicator as the occupation, but we included also the educational level of the parents to the survey, because our previous results showed us that the majority of the visitors are high school and university students.

According to the contact sheets, our presumption of previous years was proven by the fact that 58.1% of the visitors declared him/herself as a student. So interest from students is incredibly high. The second biggest group was of the employees with 30.7% in 2019, in 2020 this group is still almost one third of all visitors; more than one third if we count those employees who have subordinates. The participation of entrepreneurs is also considerable: year by year we try to engage and involve partners from the industry/business sector, from the Visitors' survey results we can see that their participation increased since 2015 significantly. The same is true for the retired: many of those bring their grandchildren to the events. As for seasonal and household workers, unemployed visitors, numbers do not seem to change over the years: this further supports the statement that our visitors are typically working intellectuals or students, in a way the elite of the society.

Residence types	Visitors' survey		Omnibus sur	/National vey	
	2015	2020	2014	2018	
Student (high school, BA/BSc, MA/MSc)	44,5	40.2	0.6	4.6	
Employee	35	28.5	54.8	52.43	
Employee (has subordinate)	6,36	10.9	-	3.11	
Entrepreneur	1,9	6.5	5.1	4.85	
Retired	2,5	8.5	31.0	29.5	
Seasonal worker	0,6	0.5	-	-	
Works in the household	0,8	0.8	-	4.8	
Unemployed	1,1	2.5	-	3.7	
Other	2,4	1.5	8.5	-	
N Total valid	629	611	932	993	

Table 2.5. The occupation of the respondents (%)

Source: "Researchers' Night" Impact Assessment, National and Visitors' survey, 2014, 2015 2020

At the top of that, Table 2.6. also proves that the willingness to visit the RN events correlates with being literate and high-qualified or being under studies. To better serve the society and to include those who have a lack of accessing research, are from less developed regions, the project involves partners from the underdeveloped, underserved regions of Hungary.

Table 2.6. The highest educational level of the parents of the respondents –
Visitors' survey

Educational level	father (%)	mother (%)
Max. 8 years elementary	6.7	8.7
Vocational school	21.1	13.8
High school graduate	30.4	34.9
Higher education (university, post- graduate, or PhD)	41.8	42.6
Total	100.0	100.0
N Total valid	601	601

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2020

The following table shows subjective data on the financial situation of the visitors. Here we asked the respondents to assess their own financial possibilities by choosing one or the other option. We decided not to ask for exact sums of money, since it seemed unlikely for students, who were the majority of our respondents, to be familiar with their parents' income. The table compares the data of the years between 2012-2020. The percentages show clearly that two third of the respondents consider themselves in the middle, or the average, who have to economise, but live on decent standard; our data show that their proportion grows almost continuously.

The conclusion of this figure is that our visitors basically represent the middle strata who do not have financial problems but do not live particularly above the average. Our mission is therefore to include the first two segments: people who barely make ends meet and those who only have money for the essentials. Our specific goal is to bring RN programmes closer to the poorer and thus allow them to access knowledge about science in general, opportunities in research. One of our activities is for example ordering a bus for those kids who live in far villages and that brings them to our programmes. Additionally, TIT, the member of the consortium and the oldest education & science promotion organization in Hungary is contributing with 13 venues to the geographical coverage of the NIGHT and helps us to bring the event into the less developed (convergence) regions, also in cities without research institutes and universities targeting also those who do not have easy access to, and thus are less inclined to engage in, STEAM or research activities. Yet again the figure suggests that the financial situation of the visitors of the Hungarian Researchers' Night improves year by year.





Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2012-'20

The further analysis showed that the residence and the level of education has no influence on subjective material status, while age and subjective material status is interconnected as the table below shows. The lack of connection between subjective material status and residence/educational level is due to the fact that most of the visitors are highly educated townspeople (mainly from the capital).

2.3. Personal contact with scientific research

We inquired at the interviewees, whether they had researchers in their network of relations. We set 3 categories, namely family member (the closest), family friend, friend and acquaintance (the farthest). The background of the significant gap in the comparison presented in the table below (2.7) is the fact that the majority of the Visitors' survey's respondents were high school and university students, consequently they have greater chance to have personal contact with scientific research and researchers themselves. Our data show the bias between the visitors and the everyday people is stable also across the years.

What we also understand from this table is that those who have a close relationship with researchers, intellectuals are more likely to joint to Researchers' Night events. The exact aim of the project is therefore to bring researchers closer to the public, many of our activities, e.g. brain star series, "touch your researcher" and other programmes were constructed to reach this. Figure 2.3. and 2.4. further demonstrates the connection between visiting the Night and having personal contact with researchers. On the countryside and in villages these tendencies are even more significant.

	National survey		Visitors	' survey
	2014	2020	2014	2020
A family member working as a researcher.	1.6	8.6	22.0	73.1
A family friend working as a researcher.	1.4	8.1	25.4	70.4
A friend working as a researcher.	4.6	19.7	30.0	61.5
An acquaintance working as a researcher.			62.1	31.3

Table 2. 7. Researchers in the respondents' network (%)

Source: "Researchers' Night" Impact Assessment, National and Visitors' survey, 2014, 2020



Figure 2.3: The connection between socio-demographic variables and scientists in the respondents' personal network – national



Figure 2.4: The connection between socio-demographic variables and scientists in the respondents' personal network – visitors

3. Professional aspirations after graduation

3.1. Professional plans and decision making

By involving young innovators in our programmes, the project's definite aim is to encourage the youth – with a special focus on girls – to embark on scientific careers. In addition to showing attractive career paths to them, we also consider it significant to highlight how rewarding it is to change the world, to make a real impact on our everyday lives.

Subsequently the project team appreciated that in the Visitors' survey, we had the chance to request information on how students reach their decision to choose a profession. There is an outstanding majority on the family's side in decision-making with 83.4% in 2015, 81.0% in 2018, and 79.9% in 2020. That is why it is important to involve the parents in the programmes of the Night, to convince them to bring their children too. At the top of that to show that it is worth embarking on a scientific path. Therefore, we keep organising programmes for Saturday too as parents, many times grandparents work late on Fridays.

Interestingly, teachers' influence counts more than that of friends and classmates; teachers are key in career decisions, which tendency has grown by 2020. That is why the project targets schools, teachers as well; many of them join every year.

			•			
	2014 (%)	N of respond	2018 (%)	N of respond	2020 (%)	N of respond
Family members	83.4	789	81.0	2041	79.9	603
Teachers at my school	55.7	758	54.6	2008	58.8	602
Friends, classmates	49.3	761	49.6	1994	46.9	589

Table 3.1. Guidance and assistance in decision making for the years ahead – Visitors' survey

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2014, 2018-19

3.2. The qualities of "the perfect job"

Having seen the results about the decisiveness of the opinion, advice, or sample of family members we were eager to know on what line the students would choose their future job, i.e. "What are the characteristics of the perfect job?". For comparison we had our data compiled from 2013-2020 with the actual results in the Visitors' survey and National survey.

As the tables below show, according to the 2020 Visitors' survey results the top three most important characteristics of a good job are:

- Ioving it and doing it without constraint;
- having an interesting and diverse job;
- having time for private life and earning much.

The 2013-2019 Visitors' survey results are not significantly different from this, but the following items came into the picture:

- the stability of the job;
- to have a job for the benefit of people;
- and to gain notoriety through job.

However, if we take the National survey results for comparison, we see a divergent picture in the following: the *stability* and *high salary* are the two most important characteristics, which are followed by the *love for the job* and *work without constraint* or *routine* and *by having time for private life*.

After a drop in 2016, 2017, 2018 and 2019, in 2020 flexible working hours are again more important for the respondents; the demand for it may grow due to Covid-19 as many had to stay at home, work online at the same time help their children study from home.



Figure 3.1. Characteristics of the ideal profession

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2013-2020

4. Research and scientists

4.1. The social representation of the researcher

This section deals with the data about how the researcher is seen by people. The following figure (4.1.) contains different characteristics that relate to the personality of the researcher, like hardworking, smart, busy, etc. The respondents were asked to mark which ones they think are relevant and not relevant for researchers. The figure presents the result of the eight Visitors' surveys (conducted between 2012-2020) compared to the results of four representative National surveys (2014-20).

The two types of surveys' results are similar regarding certain characteristics; for example, the researcher is considered as a *clever, cultivated, perseverant, hardworking*, and *busy* person in both. However, there are huge differences in other categories.



Figure 4.1. Characteristic traits of the researcher (%)

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2013-18; National 2014-20

As the same figure shows, visitors find researchers *interesting, pragmatic, modest and funny*, and refuse the assumptions that they would be *self-conceited, boring, popular, unapproachable, lonely* or *famous*. Similarly to it, average people do not see scholars to be *self-conceited, boring* or *popular*, but there are much more answers agreeing with the statement: it seems that average people see researchers to be *more boring, more approachable, lonely*, but also *more famous* and *earning more* than our visitors. The visitors' perception significantly differs from the great majority of the population concerning the stereotype of *old, boring, masculine, lonely* and *earning much* categories.

A deeper analysis of the opinion of the participants of the Event shows that there are three different views about the researchers: the first one is **about the researcher as a star**: in that case, the respondents see the scientist as someone being *humorous, popular, interesting, practical* and *earning decently*. The second typical representation of the scientist shows the picture of a *boring, lonely, elderly, unapproachable* and *abstract* figure, showing a stereotypical representation of **the boring scientist**. The third representation depicts a *clever, perseverant, literate* and *modest* type of scientist, **the silent researcher**.

The following table (4.1.) shows the details of the analysis.

Boring scientist	Boring scientist S		Star scientist		Silent scientist	
Lonely	0.775	Earning much	0.506	Clever	0.496	
Unapproachable	0.690	Pragmatic	0.530	Literate	0.535	
Abstract	0.557	Interesting	0.629	Perseverant	0.690	
Elderly	0.554	Humorous	0.609	Occupied	0.549	
		Popular	0.593	Modest	0.533	
КМО	0.637	КМО	0.639	КМО	0.634	

Table 4.1: The representation of the scientist

Source: Visitors' survey 2020

The socio-demographic variables (educational level, type of residence, subjective material status) do not show significant differences in the representation of the scientists; maybe people with lower educational levels seem to associate the researchers with positive characteristics, being a 'star'. Despite it by age the 'star' representation of the scientist is growing.

Conducting the same analysis on the national survey, we found similar representations of the researchers, with some differences, as the next table shows. We found the representation of the boring scientist, but we can see that the star scientist has more star-like characteristics: she is *famous, humorous* and *popular*, and obviously *earns much*. The silent scientist is less silent; he/she is *interesting* and *hardworking*, thus we named this representation as **diligent scientist**.

Boring scie	ntist	Star scientist		cientist Diligent scientist	
Lonely	0.740	Earning much	0.574	Clever	0.751
Boring	0.648	Famous	0.776	Literate	0.564
Abstract	0.700	Humorous	0.389	Perseverant	0.744
Elderly	0.469	Popular	0.810	Hardworking	0.672
Occupied	0.389			Interesting	0.493
КМО	0.673	KMO	0.606	KMO	0.720

Table 4.2	The	represe	ntation	of	the	scien	tist
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Source: National survey 2020

Analysing the relationship between the socio-demographic background and the representation of the researchers, we found that respondents with higher education, living in the capital, or having a scientist friend or relative seem to agree with the 'star' representation of the scientist. The gender of the respondents does not influence this representation.

Not surprisingly, respondents who heard about the Researchers' Night Event are more likely to feel themselves closer to the 'star' scientist representation. Despite of it respondents ever participating at the Researchers' Night Event does not influence the representation of the scientist, as the analysis of the national survey show.

4.2. The notoriety of Hungarian scientists

We can state from the previous figure that respondents do not consider scholars well-known. We directly asked in both online and National surveys about the familiarity of certain Hungarian scholars. The most famous scholar is **Szentgyörgyi Albert**, doctor and pharmacologist, Nobel-prize holder in each year more than 90% of the respondents knew his name. The second most famous is **Bolyai János**, the famous mathematician. His name was familiar to around 89% and ~64%. **Herman Ottó**, the famous polyhistor, who is known by 85.5% and 58,8% of the respondents of our survey is the third one. **Öveges József**, in the fourth place, is a famous teacher, who also had a TV and radio scientific programme. **Vízi E. Szilveszter**, a medical scientist, also a former-president of the Hungarian Academy of Sciences, and a well-known figure of the Hungarian scientific scene cannot be considered widely known. Also **Csányi Vilmos** (ethologist) and **Charles Simonyi** (IT specialist, businessman, and hobby astronaut) are not well-known, despite their presence in the mass-media. The ranks seem to be quite stable across the years.







In the following part we analyse the factors influencing the notoriety of the Hungarian scientists: we had a closer look at some socio-demographic variables: educational level, type of residence and subjective material status. Beside the socio-demographic variables we analysed the relationship among the personnel connection to science: the personnel network of the respondent and the participation at the Event.

Scientist	Educational level	Residence	Subjective material status	Scientist in the personnel network	Participation at the Event
Szentgyörgyi Albert	0	+	0	0	0
Bolyai János	+	+	0	0	+
Herman Ottó	0	0	0	0	0
Öveges József	+	0	0	0	+
Charles Simonyi	+	0	0	0	+
Csányi Vilmos	+	0	0	+	+
Vizi E. Szilveszter	+	0	0	0	+
Lovász László	+	+	0	+	+
Ferge Zsuzsa	+	0	0	0	0
Barabási Albert- László	+	+	0	+	+
Mikes András ²	0	0	0	0	0

Source: own compilation Respondents' survey, 2020

+ means that there is a significant relationship between the two variables.

² Not a real scientist.

Table 4.4: Factors influencing the notoriety of the Hungarian scientists(national survey)

Scientist	Educational level	Residence	Subjective material status	Scientist in the personnel network	Participation at the Event
Szentgyörgyi Albert	+	0	0	+	0
Bolyai János	+	+	+	+	0
Herman Ottó	+	0	+	+	0
Öveges József	+	0	+	+	+
Charles Simonyi	+	+	+	+	+
Csányi Vilmos	+	0	0	+	0
Vizi E. Szilveszter	+	0	+	0	+
Lovász László	+	0	0	+	+
Ferge Zsuzsa	+	0	+	+	+
Barabási Albert- László	+	+	+	+	+
Mikes András ³	0	0	0	0	+

Source: own compilation Respondents' survey, 2020

+ means that there is a significant relationship between the two variables.

2020

³ Not a real scientist.

4.3. Prestige ranking of professions

On all surveys, among visitors and the national survey, we asked the respondents to rank the listed professions according to their preferences. The result also helped us to discover if the researcher's career is attractive to people, especially to the youth, or not. Firstly, the Visitors' survey's figure contains data from 2013-2018 as well and in comparison with 2020, we can see that there are only slight differences among the years. Altogether *lawyer* is the constant winner with *doctor* in second place. In 2013, people marked only the *lawyer* as the most preferred profession, but in 2014, the *economist* came also in the first place together with the *lawyer*. In second place the *actor* remained in both years, and in 2014 *doctor* came with it, too. In the National survey of 2014, the *doctor* and the *lawyer* were the most popular in the preference list. However, many people marked the *engineer*, *economist*, *TV star* and *actor* as preferable professions, as well. The 2020 results show a similar pattern.



Figure 4.3. Ranking of professions – Visitors' survey

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2013-20



Figure 4.4. Ranking of professions – National survey

Source: "Researchers' Night" Impact Assessment, National Survey, 2014-20

•	-	. ,		•
Professions	2014	2016	2018	2020
Lawyer	64.4	64.9	58.9	54.5
Doctor / Physician	62.8	56.6	52.1	52.8
IT specialist	37.1	40.5	46.1	44.5
Engineer	37	35.9	39	37.7
TV star	38.5	42.4	34	42.2
Economist	37.2	29.4	31.2	33.0
Politician	25.6	23.4	28.9	22.1
Actor	33.5	40.1	27.2	37.6
Teacher at secondary school	11.5	12.4	16	10.0
Baker / Confectioner	9.9	10.4	15.4	12.3
Carpenter	7.4	8.8	13.6	6.3
Interpreter	10.2	10.9	12.4	10.0
Research fellow	8.9	10.4	10.2	17.6
Political scientist	7.5	7.3	7.4	8.8
Physicist	8.6	6.9	7.4	10.5

Table 4.5. Ranking of professions (%) – National survey

Source: "Researchers' Night" Impact Assessment, National Survey, 2014-20

4.4 Trust in different professions



Figure 4.5: Trust in the following professions among the participant of the Events of the Researchers' Night (2020)



Figure 4.6: Trust in the following professions in Hungary (2020)

Source: "Researchers' Night" Impact Assessment, National Survey, 2020

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2020



Figure 4.7: Trust in the following professions in Hungary and among the participant of the Events of the Researchers' Night (2020)

Source: "Researchers' Night" Impact Assessment, Visitors' survey, 2020 & National Survey, 2020

5. Scientific knowledge

In the following section of the assessment we analyse the differences of the visitors and the other people on their scientific knowledge. Our assumption is that those who are our recurring visitors would answer these questions more correctly.

The first statement asks about the effectiveness of homeopathy. According to our results, the visitors are more likely to see it as an ineffective treatment, but even among them the majority keeps it an effective treatment (50%).



Figure 5.1: Scientific truth: homeopathy

Source: "Researchers' Night" Visitors' survey,2020;National Survey 2020

The second question was about the origin of the Hungarian language which has been a debate for long years in the public opinion and there are different views on that in the population. Science though has a precise answer for that. The differences between the responses of the visitors and the everyday people are not huge in this question; most of them share the scientific truth that the Hungarian language belongs to the Finno-Ugric languages.



Figure 5.2: Scientific truth: origin of the Hungarian language

Source: "Researchers' Night" Visitors' survey,2020; National Survey 2020

It is quite similar in the case of the causes of climate change: most people agree that climate change is caused by human activity which again is a relevant topic nowadays.



Figure 5.3: Scientific truth: climate change

Source: "Researchers' Night" Visitors' survey,2020;National Survey 2020



Figure 5.4: Scientific truth: sex - conception

Source: "Researchers' Night" Visitors' survey,2020;National Survey 2020



Figure 5.5: Scientific truth: Vaccines – ASD

Source: "Researchers' Night" Visitors' survey,2020; National Survey 2020

Socio-demographic variables influencing the knowledge about scientific truth.

In the following part we analyse the factors influencing the knowledge about the above described facts.: we had a closer look at some socio-demographic variables: educational level, type of residence and subjective material status. Beside the socio-demographic variables we analysed the relationship among the personnel connection to science: the personnel network of the respondent and the participation at the Event.

Table 5.1: Factors influencing the knowledge about scientific truth (participantsurvey)

Scientific evidence	Gender	Educa- tional level	Resi- dence	Subjectiv e material status	Scientist in the personnel network	Participation at the Event
Homeopathy	+	+	+	0	+	+
Finno-ugric language	+	0	0	+	0	0
Sex – conception	0	+	0	0	+	+
ASD – vaccines	0	0	0	+	+	+
Climate change human activity	+	0	0	+	0	+

Source: own compilation Respondents' survey, 2020

+ means that there is a significant relationship between the two variables

Table 5.2: Factors influencing the knowledge about scientific truth (national

			Survey)		
Scientific evidence	Gender	Educational level	Resi- dence	Subjective material status	Scientist in the personnel network	Participation at the Event
Homeopath y	+	+	+	0	+	+
Finno-ugric language	+	0	0	0	0	0
Sex – conception	0	+	0	0	+	+
ASD – vaccines	0	0	0	0	+	+
Climate change human activity	+	0	0	0	0	+

Source: own compilation Respondents' survey, 2020 + means that there is a significant relationship between the two variables In this section of the assessment we analyse data related to the participation of the visitors in previous years in order to see how many people, yearly return deliberately to the Researchers' Night. Our records here date back to the year of 2010. Apart from 2011, where only 16.7% of the interviewees declared that they participated also in 2010, in all the other years, the percentage is around the half of respondents. We can believe from this data that there are people who return to the Event year by year and besides a significant number of new people get to know the message of the Researchers' Night.



Figure 6.1. Participation at previous Researchers' Nights' programs (%)

Source: "Researchers' Night" Impact Analysis, 2011, 2012, 2013, Visitors' survey 2014-'20

		2018	2020		
	%	Estimated	%	Estimated	
Heard about the RN	37,5	~3,704,012	51,30	5 013 423	
Ever visited the RN	6,8	~671,661	9,6	938,185	
Visited in 2018	4,9	~483,990	3,6	351,819	

Table 6.1.: Participation at the Event 2018-2020

Source: "Researchers' Night" Impact Analysis, National survey 2018

6.1 Information about the Event

An important information, mainly for the organisers from where the visitors got to know about the Event and its programme. We compared the data from 2013-2019 with those of 2020. An outstanding number of persons received the information via the Internet, in all three years. In the second place, the visitors heard about the event from their friends and in their school or at their university. Compared to 2013-2019 in 2020 there were significantly more people who were informed through an educational institution and the background here is also the over-representation of students among respondents.

Channels of information	2013	2014	2015	2016	2018	2019	2020
School/university	35.79	50.13	50.08	51.79	45.38	24.65	25.20
Radio/television	19.88	15.75	15.06	10.77	10.97	6.09	6.70
Internet	63.62	61.00	60.70	62.85	61.93	42.66	43.25
Newspaper/magazine	13.52	7.13	5.55	5.82	-	1.92	2.04
Friends/acquaintances	46.52	46.13	46.91	47.43	36.09	21.31	18.50
Parents	9.34	8.50	12.20	9.21	9.58	6.40	6.47
Street posters/ads- columns	23.46	21.38	18.54	20.76	17.37	9.43	2.95
Other	8.75	5.00	6.81	7.37	3.90	3.22	3.06
Social media	-	-	-	-	41.43	22.96	33.71
Have not heard at all	0.20	0.00	0.48	0.58	0.29	0.38	0.57
N Total valid	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6.2. Participation of respondents – how they were informed about the event (mentioned)

Source: "Researchers' Night" Impact Assessment. Visitors' survey. 2013-20

Despite that in 2020 the NIGHT could be organised only in the virtual space and the event had to compete with the Black Friday (the same day last year). 3.6% of the respondents of the impact analysis stated that they participated on the online events of the NIGHT (countrywide survey; in 2018: 4.9%. in 2016: 4.4%. in 2014: 3.4%) and 51.3% heard about the RN.



Figure 6.2. Outreach – multiplication numbers

Lack of personal participation reduces the desire to participate. what is understandable. since the venues present interesting science shows. This explains the slight decrease of the participation and the number of the returning visitors in 2020. However. the move of the event to the online/virtual space resulted in a higher awareness about the event. Our experience from the previous years is that people can hardly wait for the events of the NIGHT.

6.2. Programme preferences

From the organisational point of you it is also important to know which programs the participants preferred from the different offers during the Night. We used a method here, when the respondents had to choose the three most preferred programs according to their experience at the event. Even if we detected that the majority of the participants were of student-age, the most preferred program that stands with a big difference ahead is the scientific lecture. However, it is important to highlight that the two programs that were mentioned the most times in all the three places accumulatively were the presentation of modern-tech-equipment and of the inventions.

Table 6.3. Program preferences of the Researchers'	Night event	2016-20 -
Visitors' survey		

Programs	2016	2018	2019	2020
Scientific lecture	771	1594	1365	409
Presentation of modern tech- equipment	462	1004	805	157
Presentation of inventions	433	941	716	184
Conversation with the researchers	347	935	782	211
Exhibition	243	657	439	89
Games	284	606	488	85
Competitions	129	335	283	88
Professional counselling	58	254	196	70
Talk show	48	142	122	62
Theatre play	21	109	67	67
Beer-drinking	24	86	44	18
Pop concert	10	73	47	53
Classical concert	16	46	32	50
Total	615	2078	2609	795

Source: "Researchers' Night" Impact Assessment. Visitors' survey. 2016-20

This year we asked the participants to rank the programmes they missed during the online event. It is clear that the face-to-face in person meetings were missed. like theatre plays. professional counselling or experiments. At the same time, there is a demand for online events in the future as this year brought venues and programmes nearer to people (to their homes) – further places could be visited. from small villages people were able to connect to bigger. further cities. Some of our visitors were even able to visit venues beyond borders, thanks to the online platform that was established as an outcome of a cooperation between the ERN projects.

Missed programs	2020
Theatre play	106
Professional counselling	104
Conversation with the researchers	102
Experiments	100
Presentation of inventions	92
Exhibition	86
Presentation of modern tech-equipment	80
Pop concert	74
Competitions	70
Games	61
Talk show	61
Scientific lecture	58
Classical concert	55
Beer-drinking	54

Source: "Researchers' Night" Impact Assessment. Visitors' survey. 2020

7. Homepage

In this section of the assessment we present the visitors' opinion about the official homepage of the Hungarian Researchers' Night. For the consortium this is virtually essential to accumulate sufficient feedback. because the homepage is the core of the project - especially this year when all programmes were held online. But in previous year the website was a crucial element gathering all the details of the programmes.

As the responses of the Visitors' survey show. the homepage is satisfactory. although it can be improved. especially the filtering of the programmes. Next year therefore the team will focus on developing the listing of the programmes.







Source: "Researchers' Night" Impact Assessment. Visitors' survey. 2020

Data protection policy

The information during the impact assessment of the Researchers' Night 2020. was collected and used fairly. stored safely and not disclosed to any other person unlawfully. The information for this research was obtained for this specified and lawful purpose of measuring the impact of the Researchers' Night 2020 and it is not processed in any manner incompatible with that purpose. The obtained data was kept secure from unauthorised access and as communicated in advance. The contact sheets and the Visitors' survey were filled anonymously and the focus group discussions were held in this way. as well. The sensitive data (e-mail address and phone number) was deleted at the end of the impact assessment (December. 2020).

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