

Nuclear Olympiad 2019

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## Report on the Public Opinion About Nuclear Science and Technology in Brazil

Rio de Janeiro - Brazil  
2019

## Methodology:

- Material for data collection: Google Forms.
- Location: The form was posted on the internet. It was posted on Facebook and WhatsApp groups. In order not to cause data bias and to know people's real view of the nuclear sector, it was sought to disseminate in mixed groups. All respondents live in Brazil, so we did not cite data on this issue during the report.
- Form Description: In addition to the standard questions requested, the following question has been added: "Do you have higher education? Yes/No/I'm attending to college" and "What word comes to your mind when you think of nuclear?". The form was released using the following link: <http://tinyurl.com/pesquisanuclear>.
- Sample: 142 people.
- Research Period: From July 4th to August 3rd.

Part I intends to view and discuss data related to the overall profile, as well as to compare with 2019 research data [1] from Eletronuclear, the company that operates the Brazilian nuclear plants.

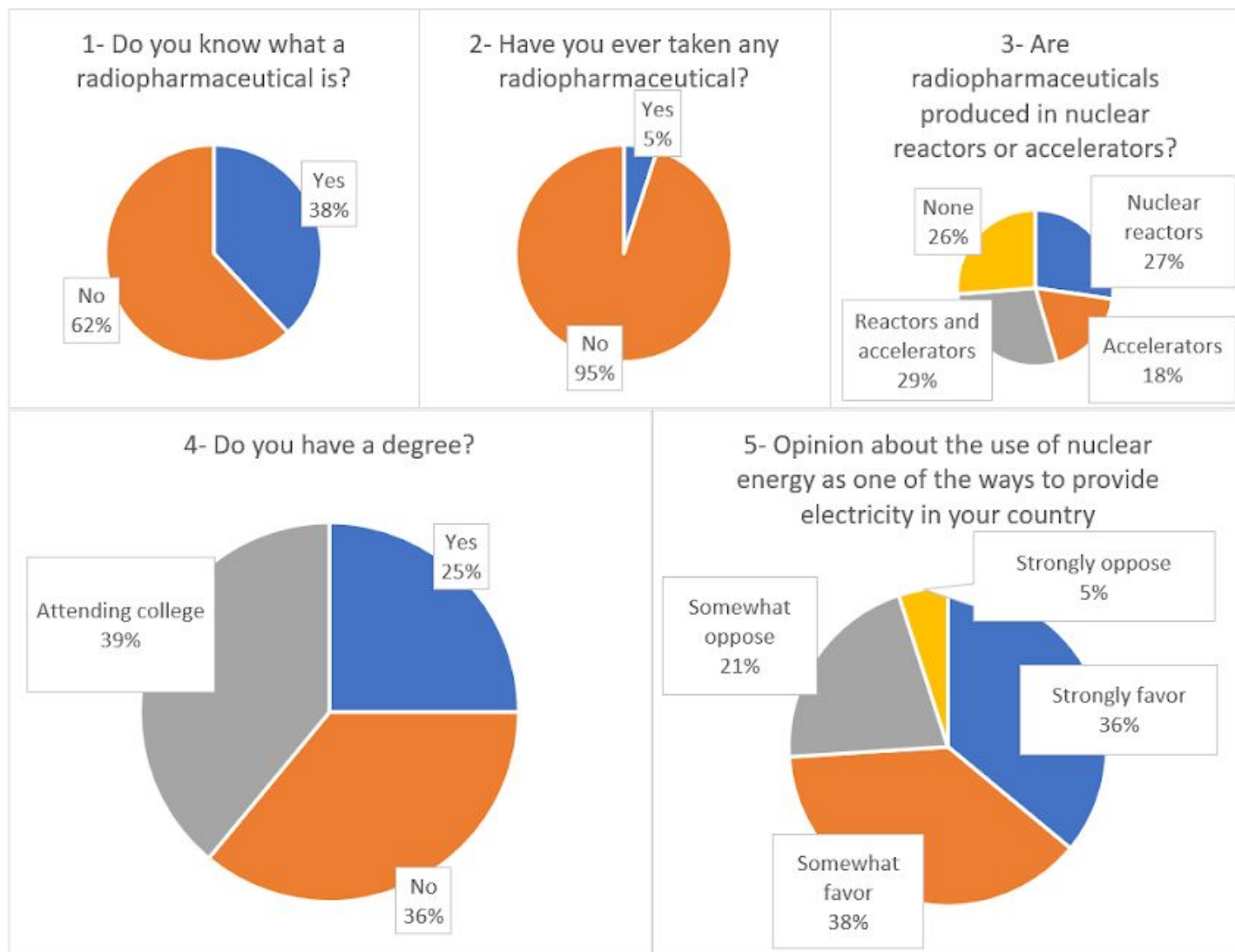
Part II aims to study the different statistics of those who have an opinion against or totally against nuclear energy, and also to analyze how people's education affects this view.

Finally, part III aims to present the specific profile of those who know what a radiopharmaceutical is, and also know where they are produced, as well as to define the relationship between these aspects and the level of acceptance of nuclear energy in Brazil.



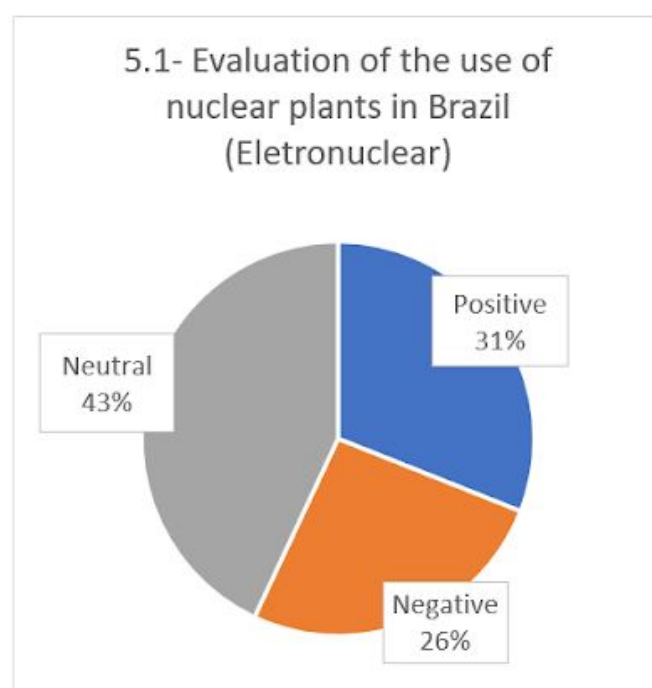
*(Illustration of the result of the spontaneous evaluation performed during our research - "What word comes to your mind when you think of nuclear?")*

## Part I - Overview

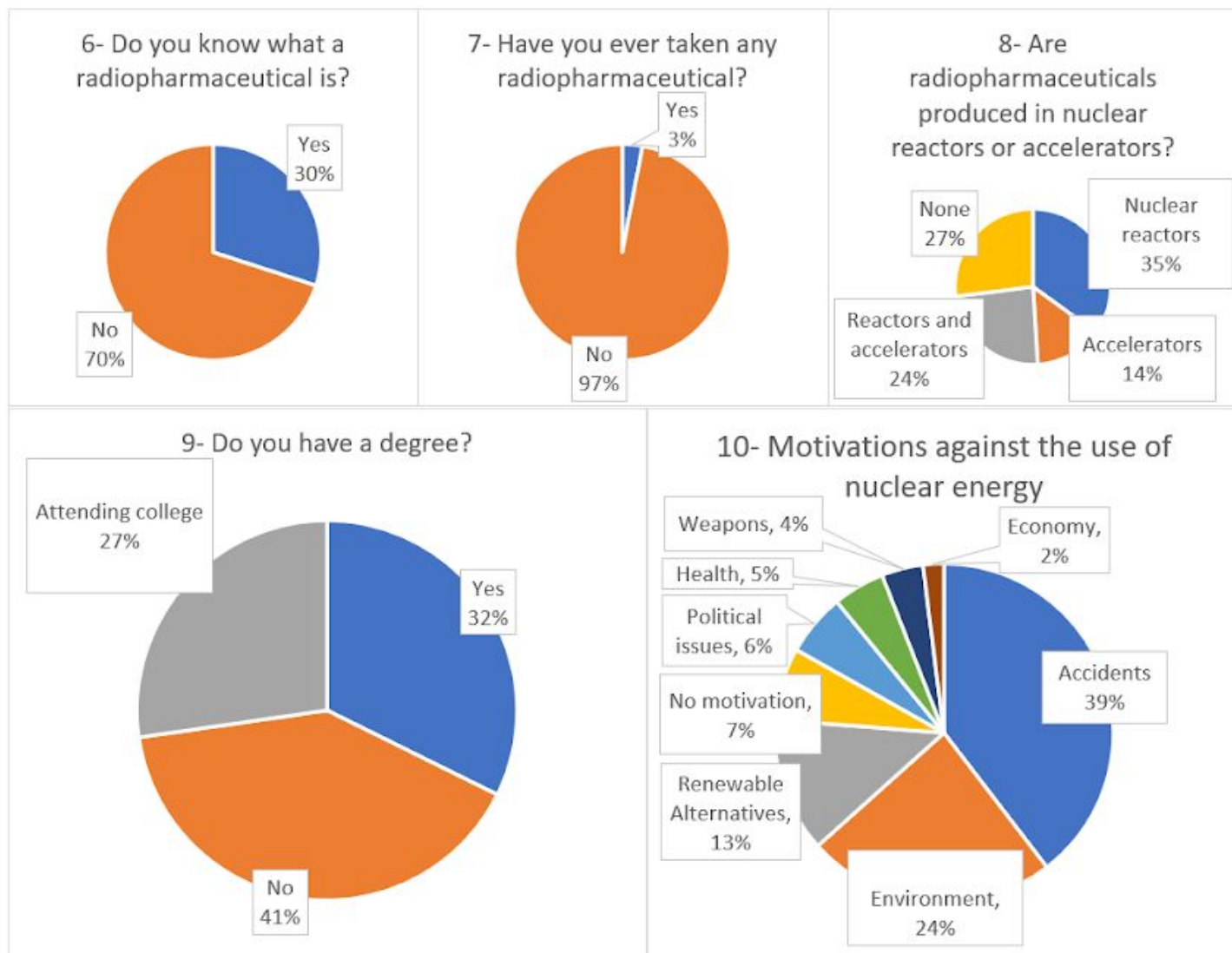


From the reactions in graph 5, it can be seen that most respondents (74%) are in favor of using nuclear energy as one of the ways to provide electricity to the country. In addition, it is important to note that most respondents belong to the university environment (64%).

Looking at the 2019 report from Eletronuclear (5.1), we note that in both surveys, exactly the same percentage of people (26%) negatively evaluated the use of nuclear power plants in Brazil. Eletronuclear research involved a different methodology, including a neutral response option, but it is still possible to observe the same trend among those who oppose it. In addition, during the spontaneous evaluation research conducted in this report (represented in the image on page 2), a coincidence of quoted words was observed when compared to spontaneous evaluation by Eletronuclear.



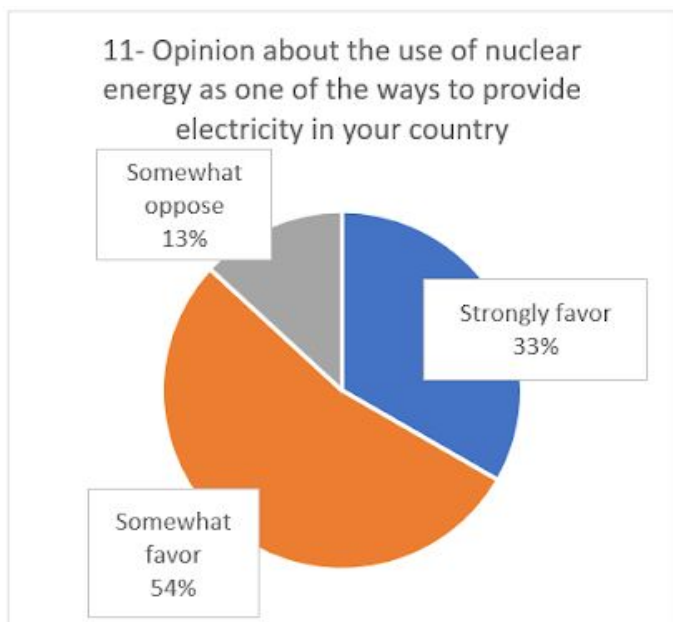
## Part II - Profile against the use of nuclear energy in Brazil



From graph 9, it is possible to notice that most respondents (59%) have a higher education. This shows that education does not necessarily affect the acceptance of nuclear energy. The view that many people with antinuclear attitude are extremely intelligent has already been presented by the president of Eletronuclear, Doctor Leonam Guimarães, in an article for the Brazilian Maritime Magazine [2]. In this text, he points out that these people only have a different view of the world. Such data is totally counterintuitive, given that at first it was believed that there was a direct relationship between education level and acceptance of nuclear energy. Such a thought was thrown down with the given data.

From graph 6, it is clear that a considerable number of people (70%) do not know what a radiopharmaceutical is. It can be said that knowledge about radiopharmaceuticals demonstrates something even more fundamental, which is the level of proximity of the individual to the nuclear industry. This concept is fundamental to understand the rejection or acceptance of the nuclear sector in society, not the level of education. A high level of individual detachment from the nuclear sector causes high rejections and low detachment, low rejections.

We also see from graph 10 that the main motivation against the use of nuclear energy is accidents. A considerable number of respondents cited Chernobyl, while the country's largest radiological accident, the Goiania accident with cesium-137, was not mentioned by anyone. We also see irrational responses to the environment, such as the fear of a possible leak of a "radioactive gas".

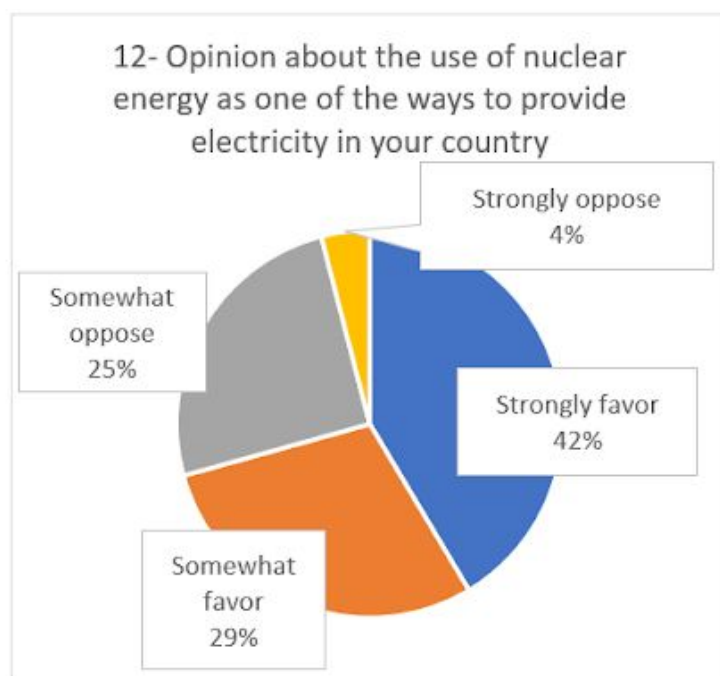


**Profile that does not know what a radiopharmaceutical is:**

Graph 12 represents the opinion data of a profile without technical knowledge about the nuclear sector. It is possible to notice a considerable increase in the percentage of rejection to nuclear plants, when compared with the data of the graph 11 of the profile that has a technical knowledge. This is in line with the conclusions made in the previous paragraph and part II, and confirms that specific knowledge about nuclear technologies is important for defining an individual's opinion, since such knowledge demonstrates the individual's proximity to industry, which is even more fundamental.

**Profile that knows what a radiopharmaceutical is and knows where they are produced:**

Here we have a group of people who have a specific knowledge about nuclear technologies. Looking at Graph 11, we note that the vast majority (87%) support the use of nuclear power in Brazil, which is by far the profile with the highest level of acceptance that can be observed in the research of this report. Therefore, we realize that specific knowledge about the nuclear sector is directly related to the positive opinion about the plants, and that this relationship does not necessarily occur through education, as pointed out in part II.



References:

[1] Eletronuclear research data:

<https://drive.google.com/file/d/1hmf0UHKZTOYn0ClggoYGM-KQKsVB7gWL/view?usp=sharing>

[2] Doctor Guimarães' article:

<http://www.revistamaritima.com.br/sites/default/files/rmb-4-2015.pdf> (Page 106)