



A case study in the municipality of Iperó regarding the RMB implementation and public acceptance: would it be a matter of communication?

Topic: Risk Communication (workers and the public).

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INTRODUCTION

- ▶ Radioactivity is a natural phenomenon, however, we just came to knowledge of its existence through the accidental discovery of Becquerel in 1896.
- ▶ Marie Curie and her husband, investigating the properties of that element found out other radioactive elements
 - ▶ hypothesis that the emission of rays by uranium compounds could be an atomic property of this element.
- ▶ This important fact would trigger not only a revolution in our society, but also the most controversial relationship of "*love and hate*" built throughout history of contemporary science.

INTRODUCTION

- ▶ However, Social Representation (SR) positively related to radioactivity has changed since the Second World War.
 - ▶ Detonation of the atomic bombs "Little Boy" on Hiroshima and "Fat Man" in the city of Nagasaki in 1945.
 - ▶ The negative SR was further amplified by the accident at the Chernobyl plant in 1986.
- ▶ On the other hand, understanding that radioactivity is present in our daily lives more than we initially imagined.
 - ▶ either naturally or radioactive materials used in energy production.
 - ▶ We acknowledge that nuclear technology also brings numerous benefits.

INTRODUCTION

- ▶ SR (Moscovici, 1969) is an alternative approach to understanding the everyday behavior of individuals and their social groups.
- ▶ Being able to contribute a lot to know the public perception about different topics.
- ▶ Proposed installation of the Brazilian Multipurpose Reactor (RMB), in the municipality of Iperó (SP), can be regarded as advantageous.

INTRODUCTION

- ▶ Since the project was announced in open court (OC), why many residents of Iperó were against the project?
- ▶ In fact, this is not an exclusive Brazilian issue, there are many works of different countries in order to meet the Risk Perception (RP) and the SR of the general population on the nuclear issue.
 - ▶ (Yim, & Vaganov, 2003; Pidgeon and . al, 2008;. Goodfellow et al, 2011;. Koerner, 2014).
- ▶ Mainly because in the nuclear area, according to Sjoberg (2000), the study of risk perception (RP) is crucial and several factors are used to explain it.

INTRODUCTION

- ▶ In this study, which aimed to know the RP of the population of Iperó regarding the implementation of the RMB , we used the Likert scale.
 - ▶ We adopted the scale from 1 to 7, in most of the questionnaire, which aims to verify the agreement and disagreement on the subject matter , as discussed Vieira & Dalmoro (2008).
- ▶ Within this perspective, it will be presented the discussions related to questions seeking to know the perceived benefits with the arrival of the RMB , and the aversion to the project and the level of respondents with confidence.

LOCATION



Iperó (SP) is located 25 km from Sorocaba and 116 km from São Paulo, capital. The Iperó's area in square kilometers is 170 square kilometers,

Figure 1. Map of São Paulo States

LOCATION

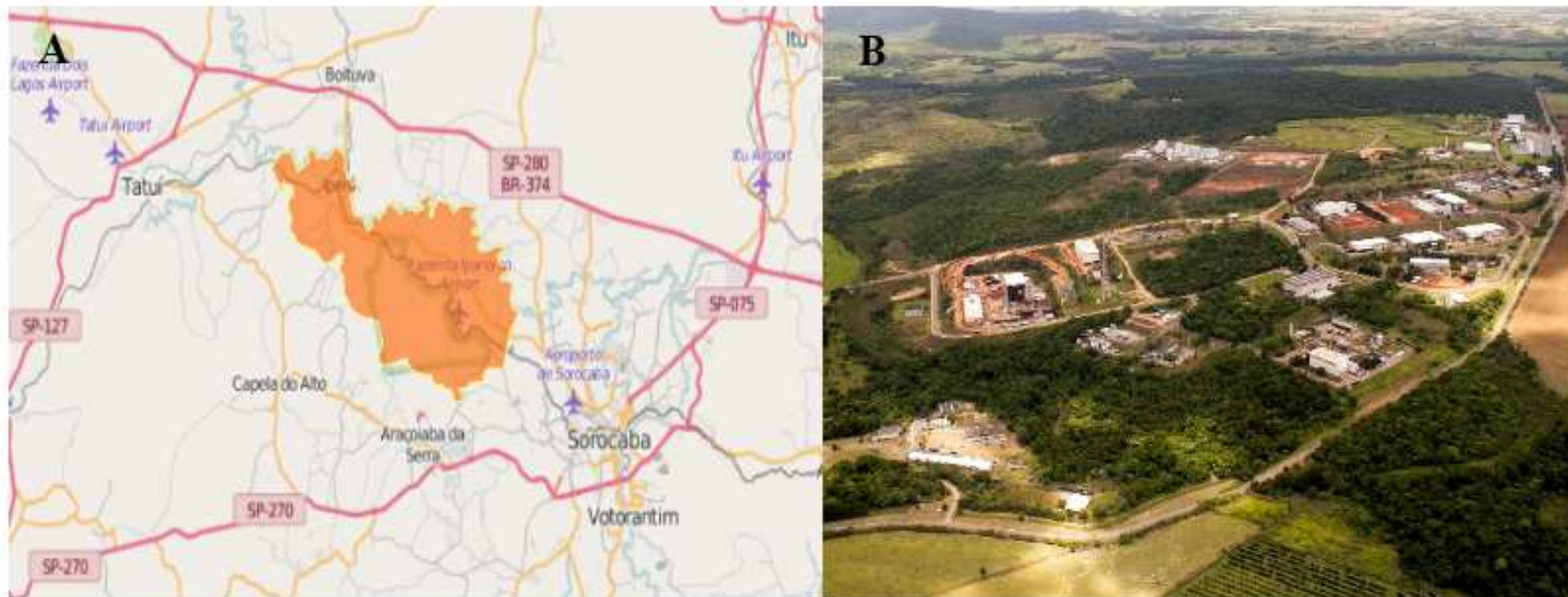


Figure 2. **A.** Map of the city of Iperó. **B.** Local implementation of the RMB.

Data collect

- ▶ The development of the questionnaire used in the interviews was based on the work of Sjöberg (2006), Moscovici (2009) and Tanimoto (2011)
 - ▶ Objective to know the attitudes, beliefs, level of risk denial and trust in the scientific knowledge.
 - ▶ Belief in the possible community stigma due to implementation of the RMB, environmental awareness and the possible sources of SR.

RESULTS AND DISCUSSION

- ▶ You will see a cut of the dissertation work on the results obtained in the interviews of Iperó municipality, related to the involvement of the participants with the arrival of the RMB to the city, analyzing participation in OC, the feeling of safety (or lack of security)
 - ▶ Evaluation of participants regarding the possibility of personal risk and to the municipality,
 - ▶ individual judgment of participants related to self-protection in case of accident in the RMB facilities,
 - ▶ RP related to the city's image and the safety of residents.

RESULTS AND DISCUSSION

198 Interviews.

Average age of
the respondents
was 37 years old.

55% of respondents
were women and
45% were male.

Higher education, complete
or not, or high school, each
of these items corresponds
to 39%.

76% of
respondents living
in urban area.

76% was
economically
active.

RESULTS AND DISCUSSION

- ▶ Law 6.938 / 81, which provides for the National Environmental Policy and CONAMA Resolution No. 001/86 predicts the release of environmental licensing, the open court (OC)
 - ▶ Present the environmental studies and create opportunities to the people, answering their questions about a particular venture.
 - ▶ It was held in the municipality of Iperó a OC for the presentation and to debate on the implementation of the RMB.
 - ▶ In the year of 2013, there were three OC's, one in Iperó, another in Sorocaba and in São Paulo.

RESULTS AND DISCUSSION

- ▶ The OC had little involvement by the population, even though the ones in charge of the event had promoted the dissemination in the city.
- ▶ This result in the OC as also reflected in the responses obtained during the questionnaires, as many residents affirmed to unknown the RMB implementation of the project and found themselves uninformed about the OC that occurred in the city and, especially, were unaware of the purpose of the reactor.

RESULTS AND DISCUSSION

Involvement of respondents with the RMB

- ▶ little involvement with the project,
- ▶ lack of information,
- ▶ low interest in participating in the OC.

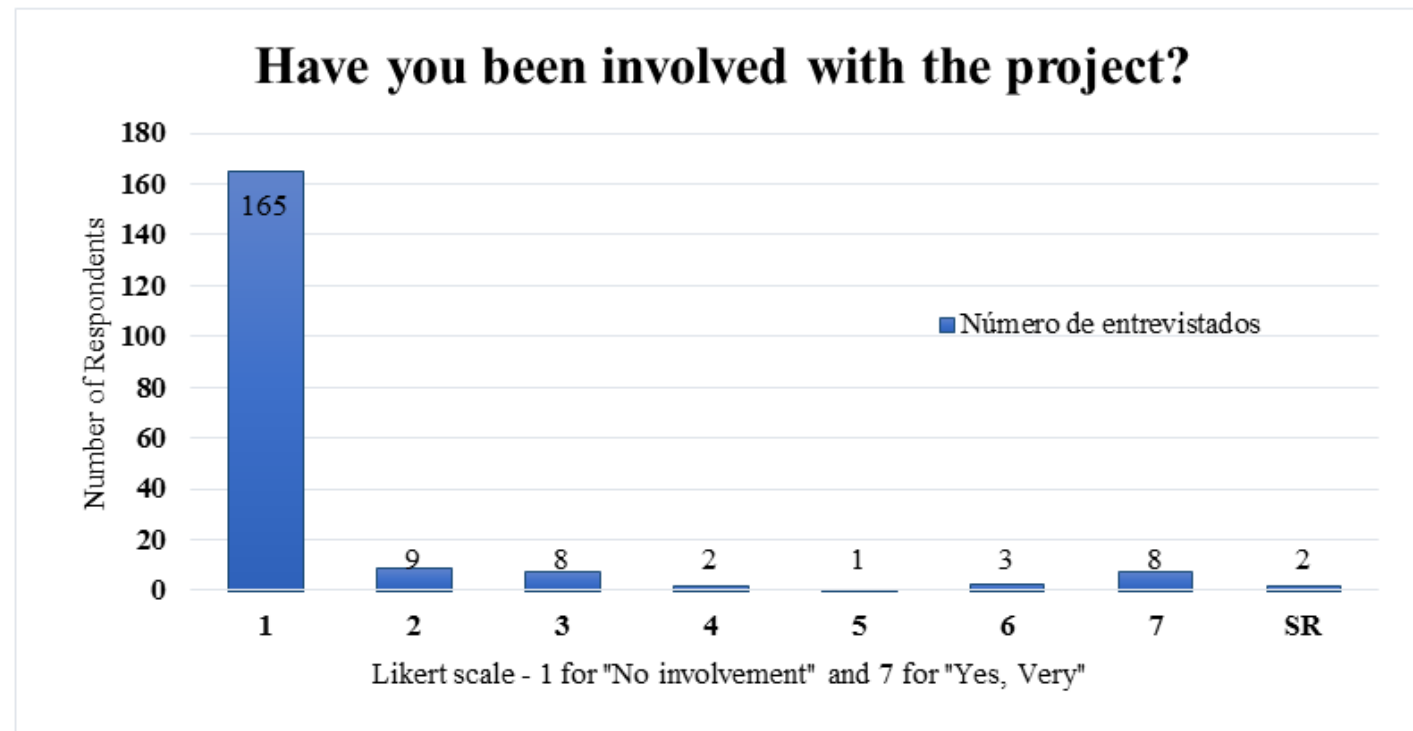


Figure 3. Judgments of the respondents about their own involvement in the implementation of the RMB in the city.

RESULTS AND DISCUSSION

Feeling as the arrival of the reactor to the municipality

- ▶ That in most of the answers, the participants did not feel safe with the implementation of the RMB.

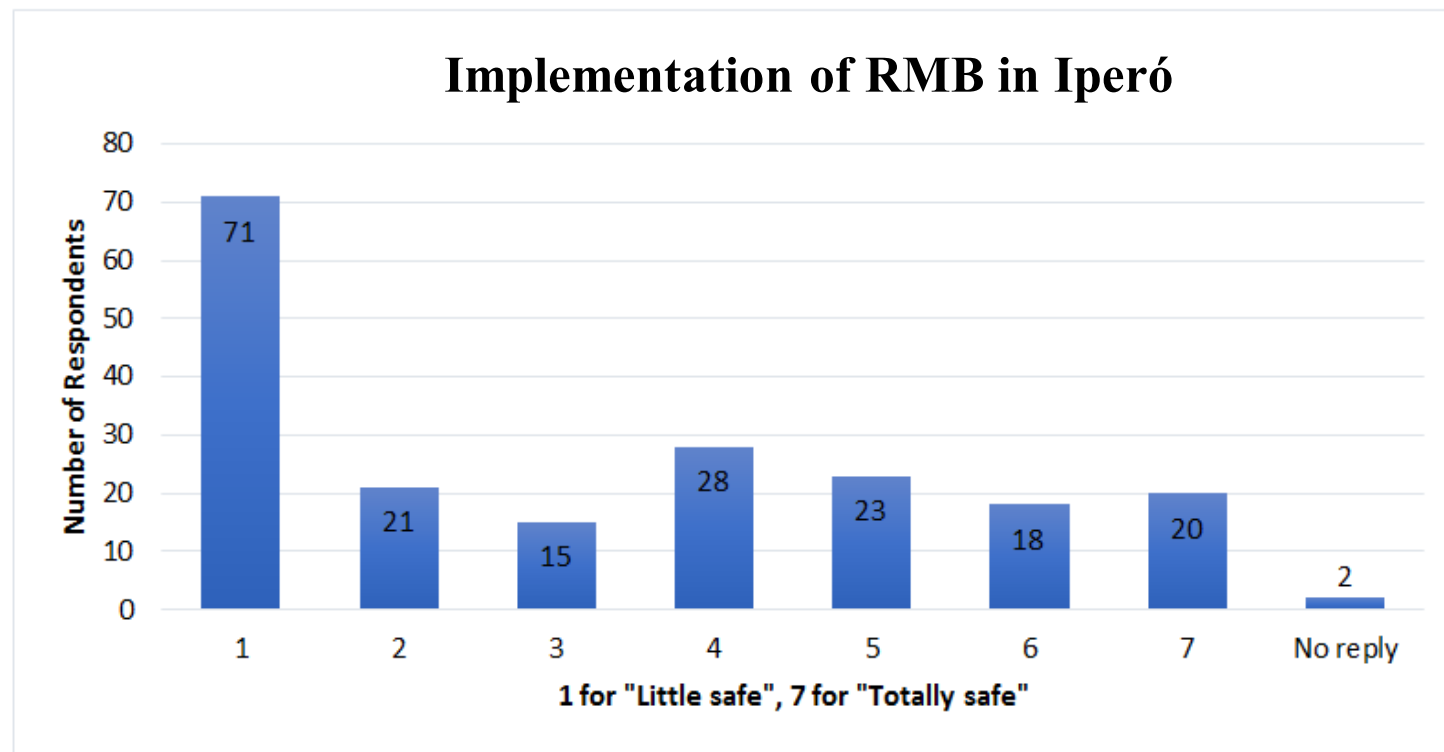


Figure 4. Feeling (1 for "Little Insurance", 7 for "Totally safe") related to implementation of the RMB.

RESULTS AND DISCUSSION

To check on the perception of the reactor misdeeds

- ▶ respondents judge like "yes, a lot" the possibility of personal risks related to the implementation of the RMB

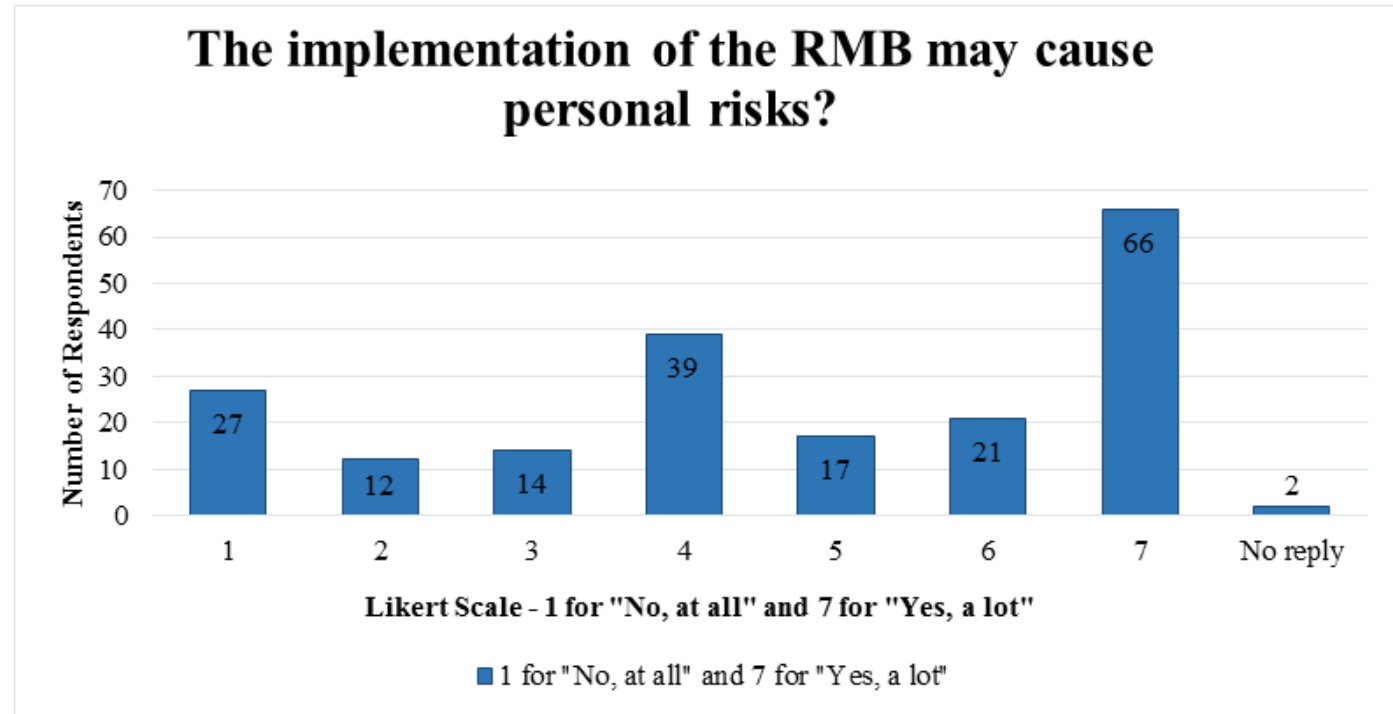


Figure 5. Evaluation of the respondents about the possibility of personal risks.

RESULTS AND DISCUSSION

Personal assessment regarding the possibility of a risk to the municipality

- ▶ The answers provided show a high PR,
- ▶ the data may show that the gap in communication between the public and the experts didn't decrease after the OC,
- ▶ urgent need to clarify the project for the population.

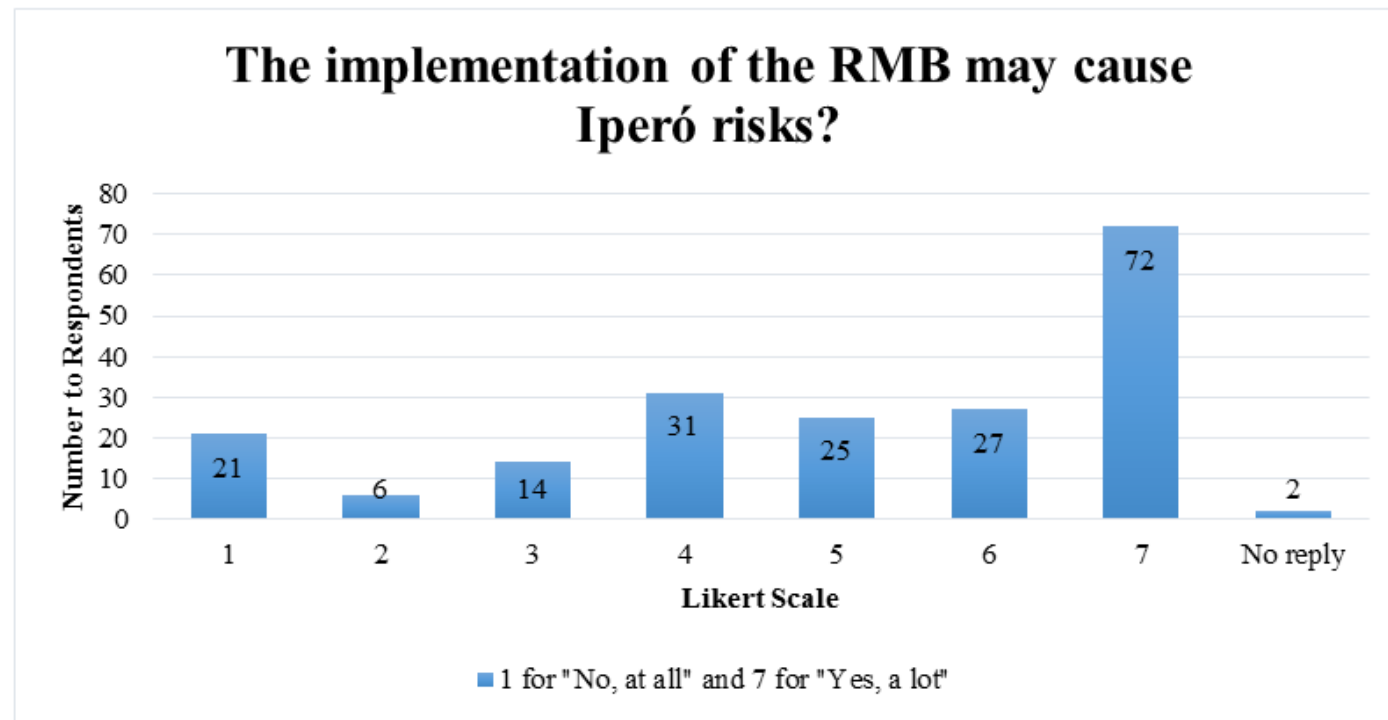


Figure 6. Evaluation of respondents as the possibility of negative events occur in Iperó using the Likert scale.

RESULTS AND DISCUSSION

Benefits that the country may have with the arrival of RMB

- ▶ 20% of respondents thought that there will be no benefit to Brazil,
- ▶ majority have a low PR regarding the benefits the region.
- ▶ if we analyze separately, item 7 corresponds high benefit of the country with the implementation of RMB in Iperó city.

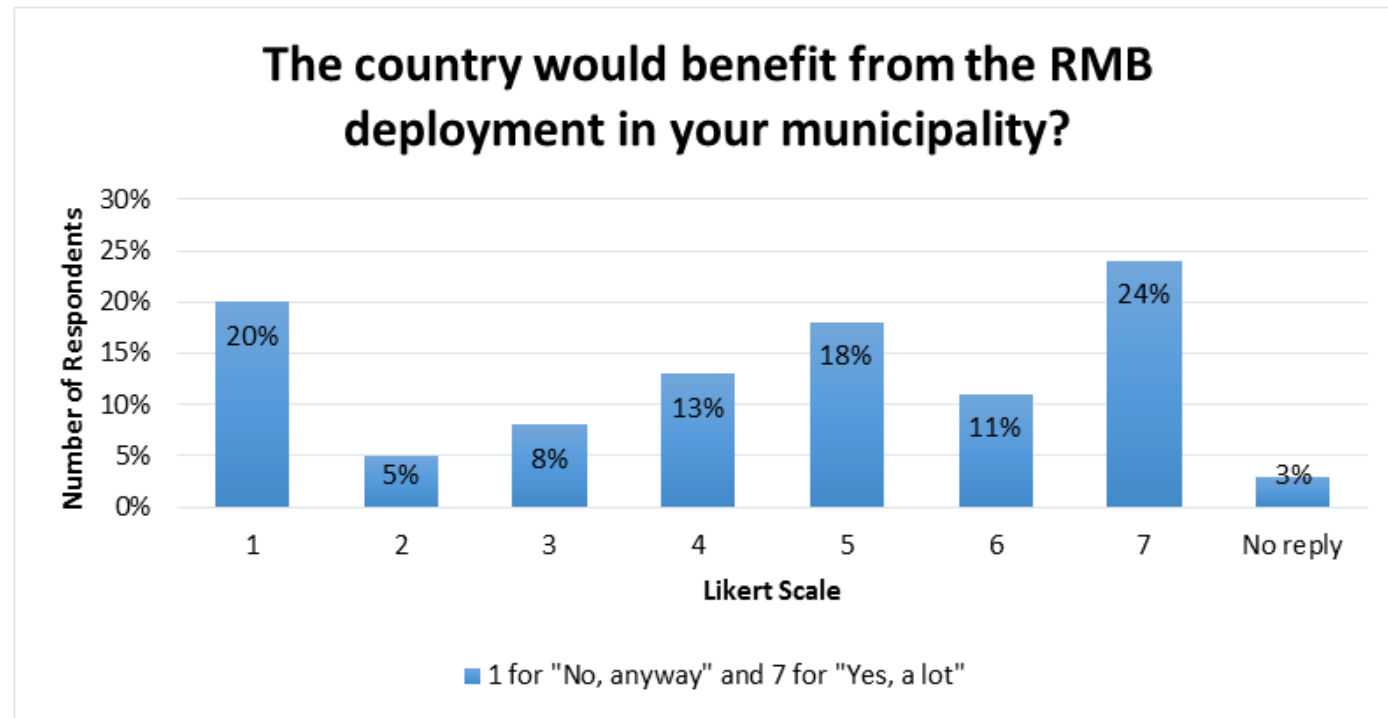


Figure 7. Evaluation of respondents regarding the benefits that the country may have with the arrival of the RMB Iperó.

RESULTS AND DISCUSSION

Iperó trade would be adversely affected with RMB

- ▶ The respondents did not relate the arrival of RMB with possible changes in trade,
- ▶ which may facilitate the acceptance of the reactor presence in the city.

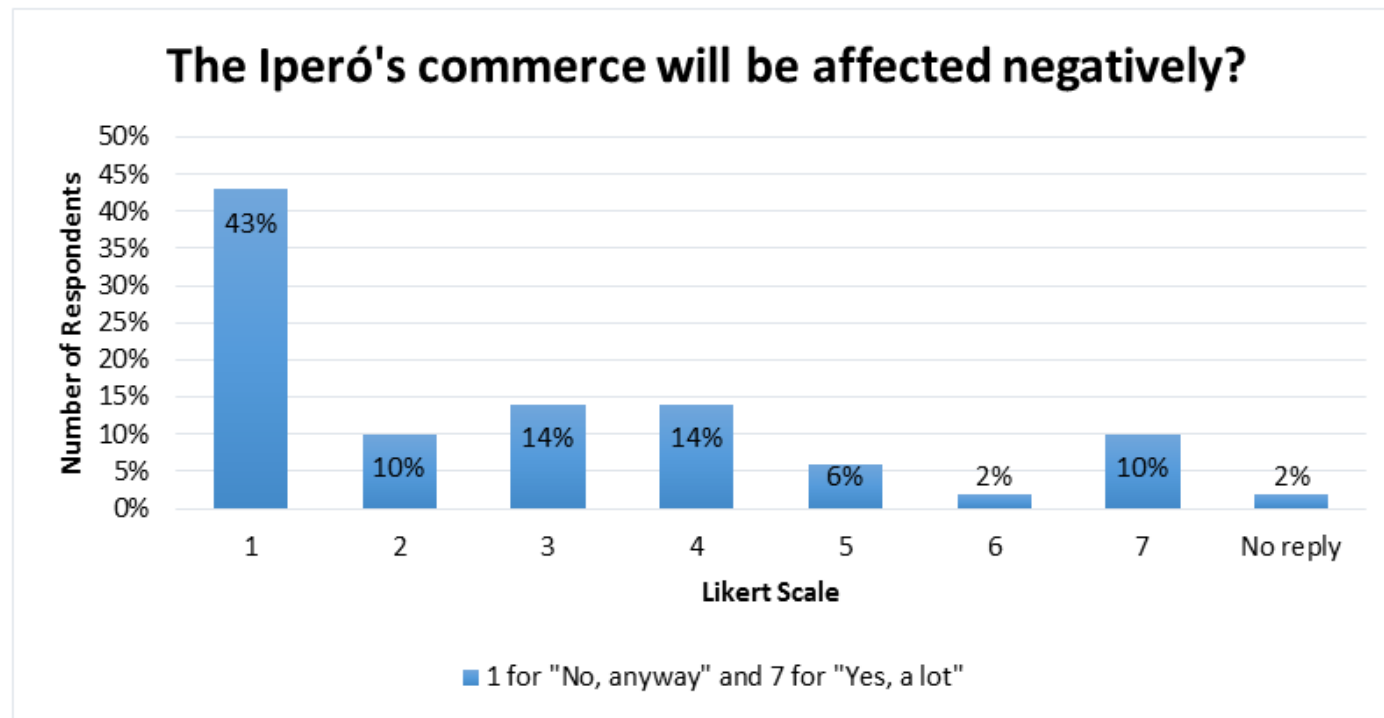


Figure 8. Assessment of respondents regarding the negative impact on the city's trade.

RESULTS AND DISCUSSION

Feeling of pride in knowing that the municipality of Iperó will receive the RMB

- ▶ In this evaluation of respondents corresponds to the fact that the reactor would not be a pride for the city for most respondents.

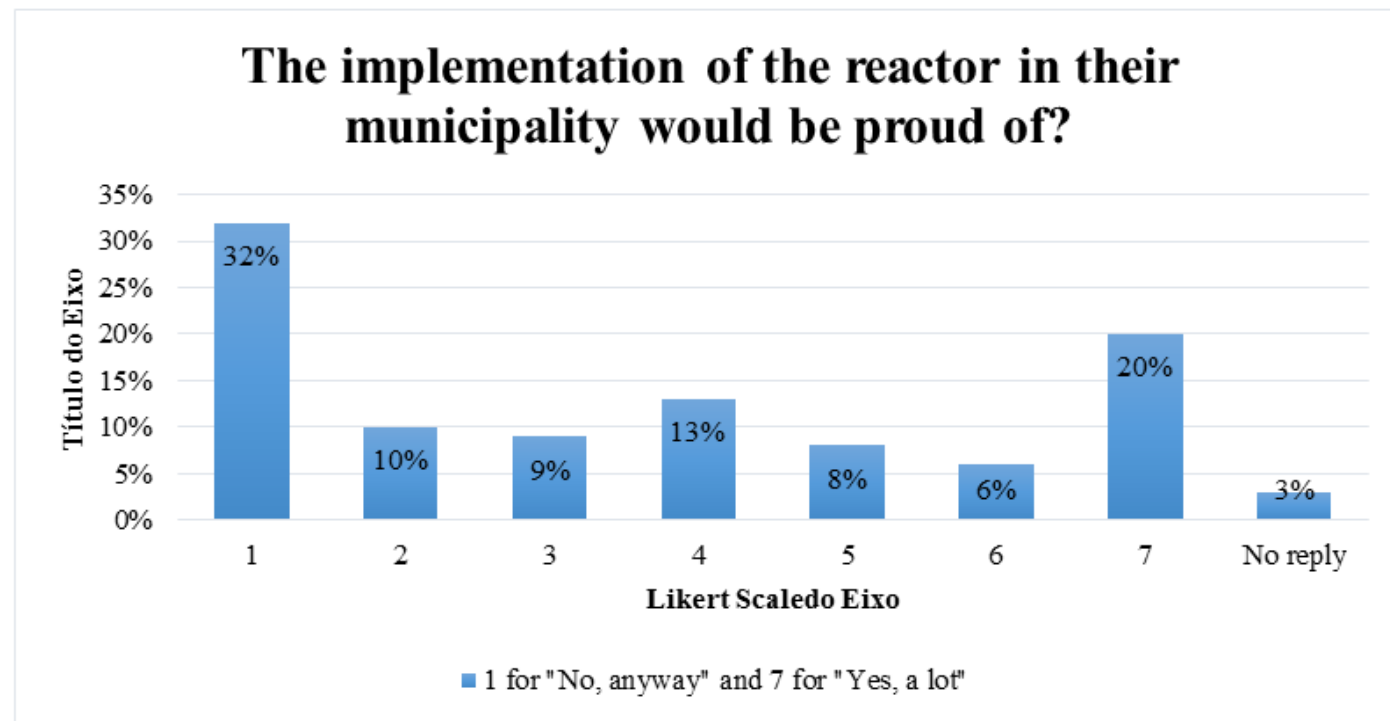


Figure 9. Assessment of respondents on the implementation of the reactor would be proud of.

FINAL CONSIDERATIONS

- ▶ From the results obtained in this study we can understand, as reflected Ribeiro Junior (2007) that the communication of risks related to new nuclear power plants is an essential activity for the formation of a rational and balanced public opinion.
 - ▶ However, the ones responsible for the communication of new implementation still prefer to use technical and scientific explanations to the public, which has a subjective RP.
- ▶ Having one featured in the role of the media in shaping the RP of the population (Carvalho *et. Al*, 2012).

FINAL CONSIDERATIONS

In addition, coverage on nuclear area is still certain issues can influence public opinion and direct a social decision-making process, as discussed by Carvalho. *et. Al.* (2012). As with the RMB.

It is perceivable that communication between the scientific community and the public is still very raw in the nuclear area.

- ▶ It is clear the need for intervention in the municipality for further information about the arrival of RMB, because the population does not feel enlightened and do not feel safe with the project.

FINAL CONSIDERATIONS

- ▶ Therefore, to increase the RMB acceptance in the city of Iperó, an alternative may be to use the media due to socio-cultural force that it has, as discussed by Carvalho. *et. Al.* (2012).
- ▶ The use of media can reach a wide audience from different age groups and should be directed to it.
- ▶ However, it must work together with environmental education programs and partnerships with schools promised at the time of the OC.
 - ▶ Occurrence of new OC, dissipation of information on the implementation of the RMB in schools,
 - ▶ Public can reflect on the topic and can critically evaluate the arrival of the reactor in Iperó.

Acknowledgements

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