






# Impressions of public opinion on environmental licensing and popular participation in decisions regarding the design and implementation of public management practices

Impressões da opinião pública sobre o licenciamento ambiental e a participação popular nas decisões relativas à elaboração e implementação de práticas públicas de gestão

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## ABSTRACT

The involvement of society in environmental management, when allowed, encourages the formulation, implementation, and monitoring of environmental policies. The public hearings that make up the environmental licensing process and that represent a space for direct popular participation have proven to be inefficient. This work aims to capture the impressions of public opinion regarding popular participation in decision-making, both about public practices of environmental management and about environmental licensing. The data were collected in the second half of 2020 through a questionnaire prepared through Google Forms and disseminated on social networks according to a virtual sampling technique called “snowball.” The sample was composed of 59 individuals, mostly from Rio Grande do Sul (88%). The respondents feel excluded from the licensing process and the actions to protect the environment where they live, showing interest in being more participatory, both by adding information about the region where they live and by assisting in enforcement within their neighborhoods. Most of the public consulted considers that the dissemination of information about public actions and the need to acquire knowledge about the functionalities of environmental licensing are essential to ensure a more effective participation of the population in the formulation of environmental protection policies. It is concluded that direct participative democracy is still deficient due to the low adhesion of the population, whose engagement depends on factors related to environmental education, the availability of information, and the simplification of forms of democratic participation that are closer to the citizen.

**Keywords:** opinion poll; environmental perception; public management.

## RESUMO

O envolvimento da sociedade na gestão ambiental, quando permitido, favorece a formulação, execução e acompanhamento das políticas ambientais. As audiências públicas que compõem o licenciamento ambiental e que representam um espaço para a participação popular direta têm se mostrado ineficientes. Este trabalho objetiva captar as impressões da opinião pública quanto à participação popular nas tomadas de decisão, tanto no que se refere às práticas públicas de gestão ambiental quanto no que tange ao licenciamento ambiental. Os dados foram coletados no segundo semestre de 2020, por meio de um questionário elaborado no Google Forms e divulgado nas redes sociais, conforme técnica de amostragem virtual denominada *snowball*. A amostra foi composta de 59 indivíduos, a maioria do Rio Grande do Sul (88%). Os respondentes sentem-se excluídos do processo de licenciamento e das ações de proteção do meio ambiente onde vivem, demonstrando interesse em ser mais participativos, tanto agregando informações sobre a região que habitam quanto auxiliando na fiscalização em seus bairros. A maioria do público consultado considera que a divulgação de informações sobre as ações públicas bem como o conhecimento sobre as funcionalidades do licenciamento ambiental são imprescindíveis para garantir a participação mais efetiva da população na formulação de políticas de proteção ambiental. Conclui-se que a democracia participativa direta ainda se mostra deficiente perante a baixa adesão da população, cujo engajamento depende de fatores relativos à educação ambiental, à disponibilização da informação e à simplificação das formas de participação democrática que estejam mais próximas do cidadão.

**Palavras-chave:** pesquisa de opinião; percepção ambiental; gestão pública.

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## Introduction

Over the past few decades, although some concepts relating to the environment were consolidated, society, by taking a new position on environmental issues, has demonstrated the existence of different ways of looking at the world, both on the part of the individual people and by society groups, the state, and governments (Milaré, 2015). Therefore, not only the public authorities but also the community, composed of individual citizens and organizations, has assumed, as its own, the duty to preserve the environment (Fornasier, 2015).

In Brazil, the Constitution of 88, in its article 225, divided the responsibility for protecting the environment between the Public Power and the community, greatly expanding the importance of organized civil society and, therefore, also reinforcing its title of “constitution citizen.”

Environmental licensing, an instrument of the National Environmental Policy (PNMA), represents one of the most important actions of the public administration to regulate any projected intervention on the environment, considering the benefits proposed by the project when compared to its negative impacts (Milaré, 2015). However, although the constitutional text encourages the empowerment of civil society, the public hearing is the only instrument provided by Brazilian law to include popular participation within the environmental licensing process of activities that use natural resources (Queiroz and Miller, 2018), being conditioned only to highly complex processes that culminate in the need for an Environmental Impact Study and its respective report (EIA-RIMA).

Reaffirming the importance of public participation when it comes to business planning and actions, Weder (2021) argued that for sustainable development to be achieved, social participation and the public-company relationship must be present throughout the impact assessments. However, according to the author, dialogue in search of consensus is not enough, and it is necessary to demystify certain paradigms and adhere to edifying problematizations aimed at environmental conservation. In this way, collective transformation is achieved, and the connection between the population and corporations becomes more sustainable, coherent, and upward.

Knowledge dissemination, facilitated by the connections fostered by advances in information dispersal technology, has played a decisive role in increasing public participation in issues concerning interventions in the environment and their effects, so that they are often instrumental in project approval outcomes (Cullen-Knox et al., 2017; Van-Putten et al., 2018).

Thus, the involvement of society in environmental management, when allowed, has significantly contributed to advances in the formulation, execution, and monitoring of environmental policies and projects (Giaretta et al., 2012), and it is even considered a “social license to operate,” which is defined as a set of collective expectations beyond what is legally required (Cullen-Knox et al., 2017; Van-Putten et al.,

2018). However, it is necessary for governments to ensure this space for participation within their management strategies.

Therefore, although the participation of the population reflects one of the most important visions in the context of environmental public policies, since it represents the group directly affected by the success or failure of environmental licensing procedures, it is still placed in a position of spectator of the interaction between licensors and licensees, whose result, however, directly influences its life.

This work aims to capture the expressions of public opinion regarding popular participation in decision-making, both about environmental licensing processes of activities considered potentially polluting and about the development and implementation of public practices of environmental management, in order to identify the strengths and weaknesses of popular presence in this context. In this way, we intend to intensify the debate about the extent of popular participation in decision-making on environmental issues, identifying opportunities to increase this participation.

## Theoretical background

In Brazil, until the 1970s, governmental actions related to environmental protection were isolated and disconnected from public policies for social and economic development (Assunção, 2018), obeying more the impulses of the moment or trends of a particular government than plans (Milaré, 2015). Thus, constituting a breath of renewal, Law 6,938/1981 was published, which instituted the National Environmental Policy (PNMA), considered a legal milestone that started the Brazilian trajectory in search of harmonizing economic development with environmental protection (Sánchez, 2013). It also made clear the importance of the role of society by considering as one of its principles environmental education at all levels of education, including community education, aiming to enable it to actively participate in the defense of the environment (Brazil, 1981).

In turn, the Constitution of 1988, in its article 225, establishes the right to an ecologically balanced environment as a right duty, since at the same time that the citizen is entitled to an ecologically healthy environment, he also has the duty to preserve it.

Environmental licensing is the main instrument of the PNMA, having a preventive character to protect the environment (Cirne et al., 2022). It is a complex administrative procedure through which the competent environmental agency licenses the location, installation, expansion, and operation of enterprises and activities that use environmental resources, considered effectively or potentially polluting or those that, in any form, may cause environmental degradation, considering the legal and regulatory provisions and technical standards applicable to the case (Brazil, 1997).

As a police power of the State, licensing evaluates, in a multidisciplinary way, the impacts of an activity, encompassing numerous prin-

ciples of environmental law, among them that of sustainability. According to Alves and Canestrini (2020, p. 205),

Sustainability, considered in its dimensions, with the care of the current generation and future generations, in various normative documents of environmental law, was considered by the international community, a way out for the maintenance of an environment, whether natural or urban, in a balanced way. And this institutes solidarity, inserted in the larger concept of fraternity, as an ethical issue, so that everyone has the feeling of belonging, inclusion and responsibility for preservation.

The public hearing, which is part of environmental licensing, consists of a procedure for presenting the contents of the study and the environmental report to interested parties, not only to clarify questions but also to collect criticism and suggestions about the project and the areas to be affected (Sánchez, 2013). It is the main channel for local community participation in the licensing process (Cirne et al., 2022). However, its mandatory nature is restricted only to projects of significant environmental impact that require the preparation of an Environmental Impact Study (EIA-RIMA).

During the obtaining of environmental licenses, the public hearing functions as a contact tool between the individual affected by the licensed activity and the interest in the use of the respective natural resources (Queiroz and Miller, 2018). Thus, according to Fornasier (2015), regarding the understanding between the public, democracy should be understood as a set of decision-making that contemplates the qualifications of those involved.

According to Novelli (2006), governments have been making efforts to develop new governance mechanisms that allow greater influence of society in public affairs, including through direct participation in many cases, given that the new management model assumes that the more democratic is its administration, the more efficient is the State.

Thus, the democratic principle, based on representativeness, gives way to the formation of structures in which citizens can participate, in a direct way, in the decision-making of public authorities, especially in those concerning conflicts related to environmental issues that interfere with the quality of life of the directly affected society (Andrade, 2019; Canestrini and Garcia, 2021).

That said, popular participation during public hearings that make up the environmental licensing procedure and that represent a space for direct participation should be one of the necessary parts to guide the decision-making process, assisting in the characterization of impacts and the discussion of minimizing measures or appropriate corrections.

In public hearings where citizens and civil entities take the floor, they behave as a set of experiences that enable learning and advancement in decision-making more welcoming to participatory democracy (Duarte et al., 2016). However, despite the exercise, public hearings do

not have great effectiveness, since the population does not own any decision as far as they are concerned (Queiroz and Miller, 2018).

During the study carried out by Duarte et al. (2016), the low number of participants who manifested themselves in public hearings was remarkable. There were even cases in which they were not registered. Among the hypotheses that the authors raise for what happened are how the hearings are proposed and conducted, the insufficient qualification of society to participate in discussions, or even lower potential for affecting local communities, which reduces interest in the participation (Duarte et al., 2016).

Similarly, Cirne et al. (2022) also observed a democratic deficit in the environmental licensing of hydroelectric power plants during public hearings and concluded that it is necessary to improve social participation in this process.

Therefore, it can be seen that while the success of a licensing process is given by the involvement of the population with the instruments for analyzing environmental impacts, the current scenario does not fit into such a statement (Bratman and Dias, 2018). Considering that the population is not heard and has no effective participation in decision-making processes, public hearings are seen only as formalizing the environmental licensing process (Zhour, 2008; Verdum and Me-deiros, 2014; Domingos et al., 2016).

Given the importance of popular participation, for Gilliland et al. (2017), public engagement should occur from the beginning of the planning of activities, and companies should be encouraged to take the first step toward this connection.

According to Di Marco and Passador (2020), in addition to public hearings, there are multiple possibilities for the exercise of citizenship to strengthen the democratic process. However, in the light of environmental issues, participatory democracy is still deficient due to the low adherence of the population.

Many studies have been made on the effectiveness of social participation procedures; however, it is necessary to reflect on how and to what extent the way of life, choices, and personal conduct of each individual can affect the whole (Alves and Resende, 2020). The actors go on to state that:

It is no coincidence that this research is not so usual because, in general, society does not perceive the environment as an integrated system in which small actions interfere and impact the totality. For this reason, common sense believes only that large interventions can affect the environmental balance, not realizing how small individual conducts, when added together, are responsible for considerable impacts on the ecosystem (Alves and Resende, 2020, p. 67).

Therefore, it is important to understand the motivating and demotivating factors of this process, in order to create incentives for the involvement of the population in decision-making that will affect their quality of life.

**Methodology**

Sant’anna et al. (2021) defined environmental perception as being an awareness of the environment by man, i.e., the act of perceiving the environment in which one is inserted, learning to protect and care for it. In turn, environmental awareness is understood as a multidisciplinary construct composed of attributes such as attitude, behavior, and cognitive aspects (Schlegelmilch et al., 1996; Silva et al., 2016).

According to Klering et al. (2012), surveys related to environmental perception are tools that can be used strategically to raise awareness among participating individuals, in addition to collecting data.

For this survey of environmental ideas and perceptions, we chose to implement cross-sectional qualitative research, whose objective was, through an opinion survey, to capture the impressions and points of view of the participants, providing a portrait of the opinions of a group at a given moment in time (Fink, 2002). It should be noted, however, that this research is not generalizable, but exploratory, in the sense of seeking

knowledge about an issue that one wants to better understand, exploring, richly, what certain people think at a moment in time (Vieira, 2009).

As a data collection instrument, virtual questionnaires were used aimed at the general population.

The survey begins with questions that aim to get to know the interviewer, such as age, education, and state where they live (Table 1).

Then, the question was asked about the level of concern the interviewee has about the environment, instigating them to think about the issue to prepare them for the rest of the questions (Table 2).

To understand how the interviewee sees the environment around him/her, the interviewee was asked whether he/she notices or has noticed any situation related to environmental degradation around the place where he/she lives and/or works and should indicate, in the sequence, which situation was observed. We also tried to determine what kind of reaction the population is having when they observe some issue that upsets them (Table 3).

**Table 1 – Questions to get to know the survey respondent, aimed at the population.**

Objective	Question	Position in the survey
GETTING TO KNOW THE SURVEY RESPONDENT	<i>What is your age group?</i>	<b>Question 1</b>
	<i>What is your education?</i>	<b>Question 2</b>
	<i>In which state do you live?</i>	<b>Question 3</b>

**Table 2 – Question about the level of concern for the environment, directed at the population**

Objective	Question	Answer option	Position in the survey
LEVEL OF CONCERN FOR THE ENVIRONMENT	<i>How concerned are you about the environment?</i>	<ul style="list-style-type: none"> <li>• Very concerned</li> <li>• Worried</li> <li>• Slightly Concerned</li> <li>• Indifferent</li> </ul>	<b>Question 4</b>

**Table 3 – Question about how the interviewee sees the environment around him/her, aimed at the population.**

Objective	Question	Answer option	Position in the survey
PERCEPTION OF THE NEIGHBORHOOD	<i>Around the place where you live and/or work, do you notice or have you noticed any situation related to environmental degradation (noise emission, deforestation, water, soil and/or air contamination, irregular waste disposal, etc.)?</i>	<ul style="list-style-type: none"> <li>• Yes, but it does not bother me</li> <li>• Yes, and it bothers me</li> <li>• No</li> <li>• I do not know</li> </ul>	<b>Question 5</b>
	<i>Which situation related to environmental degradation have you observed?</i>	Open question	<b>Questions 6 and 7</b>
	<i>What was your attitude concerning the aspect that made you uncomfortable?</i>	<ul style="list-style-type: none"> <li>• You participated in a petition</li> <li>• You discussed the issue with a friend but did not take any action</li> <li>• You talked about it with a politician</li> <li>• You were present at a protest</li> <li>• You made contact with an environmental agency</li> <li>• You participated in a public hearing</li> <li>• Tried to pass the matter on to the press                             <ul style="list-style-type: none"> <li>• Did nothing</li> <li>• Other: _____</li> </ul> </li> </ul>	<b>Question 8</b>

In Question 5, those who answered “Yes, but it does not bother me” were directed to Question 6 to inform which situation they observed. On the contrary, those who answered “Yes, but it bothers me” were directed to Question 7, to list the situations, and then to Question 8, informing what attitude they took.

In turn, the respondents who marked the other alternatives went directly to Question 9. After that, the respondents were asked which segment they considered the main segment responsible for the damage to the environment (Table 4).

Advancing with the questions, the interviewee was led to think about the compatibility of socioeconomic development with environ-

mental preservation, evaluating the laws decreed by the government on this topic. Finally, it was asked whether environmental issues are important and should be considered during the development of a city (Table 5).

Up to this point, the questions presented in the survey addressed to the population aimed to force the interlocutor to reflect on the subject to materialize their perception of the environment in which they are included, preparing them to move into the field of environmental licensing itself.

To register spontaneous thoughts on the subject, the interlocutor was asked to inform which word, phrase, or image seemed to represent his feelings best when he first heard about environmental licensing (Table 6).

**Table 4 – Question about responsibility for environmental damage directed at the population.**

Objective	Question	Answer option	Position in the survey
RESPONSIBLE FOR ENVIRONMENTAL DEGRADATION	<i>Which segment do you classify as the main segment responsible for the damage to the environment?</i>	<ul style="list-style-type: none"> <li>• The government that does not inspect the correct execution of the legislation</li> <li>• The economic activities that only think about profit, leaving aside the socio-environmental factor of their activity</li> <li>• Society in general, which is negligent to environmental degradation and does not take a stand in defense of the quality of life from a healthy environment</li> <li>• Other: _____</li> </ul>	Question 9

**Table 5 – Question about making development compatible with environmental preservation.**

Objective	Question	Answer option	Position in the survey
SUSTAINABLE DEVELOPMENT	<i>Do you believe that socioeconomic development is compatible with environmental preservation?</i>	<ul style="list-style-type: none"> <li>• Yes, as long as there is an environmental control of the polluting sources</li> <li>• No, however, I believe that there are situations in which the environmental impact generated by an activity is nothing more than the price to be paid by society in exchange for the economic development of a region</li> <li>• No, because the environmental impact is intrinsic to the entire development process</li> <li>• I am not in a position to give an opinion on this subject</li> <li>• Other: _____</li> </ul>	Question 10
	<i>In your opinion, what should be the government’s environmental laws?</i>	<ul style="list-style-type: none"> <li>• More stringent, because environmental degradation has advanced considerably</li> <li>• Less strict, because today there are technological solutions that reduce environmental impacts</li> <li>• As strict as they are now, but with updates according to the technology available for environmental protection</li> <li>• I do not know how to express an opinion on this subject</li> <li>• Other: _____</li> </ul>	Question 11
	<i>Do you believe that environmental topics are important and should be considered during the development of a city?</i>	<ul style="list-style-type: none"> <li>• I do not know, I never thought much about it</li> <li>• Yes, I think they are important and should be considered</li> <li>• No, I think it is silly to protect the environment in the city</li> <li>• Other: _____</li> </ul>	Question 12

**Table 6 – Question about what environmental licensing represents.**

Objective	Question	Answer option	Position in the survey
ENVIRONMENTAL LICENSING	<i>When you hear about environmental licensing, what phrase, word, or image seems to best represent your feelings about it?</i>	Open question	Question 13

In the sequence, some questions were asked to capture the level of knowledge that the interlocutor has about the subject (Table 7).

In Question 16, those who answered “No” were directed to Question 20.

Those who answered “Yes” were directed to Question 17 so that it was possible to understand the level of community involvement during

the licensing process. Next, they were asked about what bothered them the most during and/or after the implementation of the project, being allowed to mark more than one option. The survey also tried to understand whether the interlocutor has the perception that the environmental agency responsible for licensing and monitoring the activity in question was efficient in minimizing the negative effects of the project (Table 8).

**Table 7 – Questions about the level of knowledge regarding licensing, directed to population.**

Objective	Question	Answer option	Position in the survey
ENVIRONMENTAL LICENSING	<i>In your opinion, what is the purpose of environmental licensing?</i>	<ul style="list-style-type: none"> <li>• I do not know</li> <li>• It is a document that enterprises must have in order to operate, but I am not sure what it is for</li> <li>• It is a way of controlling where and how the enterprises can be installed, increasing bureaucracy and obstructing economic development</li> <li>• It is a way to control where and how the enterprises can be installed, being an important tool for protecting natural resources</li> <li>• Other: _____</li> </ul>	<b>Question 14</b>
	<i>Have you ever had the chance to see an Environmental License?</i>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>	<b>Question 15</b>
	<i>Have you ever witnessed the installation of any development in your neighborhood that has been licensed?</i>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>	<b>Question 16</b>
	<i>Were you informed about what the enterprise in question was about?</i>	<ul style="list-style-type: none"> <li>• Yes, the enterprise talked to the community</li> <li>• Yes, the environmental licensing technicians talked to the community</li> <li>• Both, the company and the environmental licensing technicians, talked to the community</li> <li>• No</li> <li>• Other: _____</li> </ul>	<b>Question 17</b>

**Table 8 – Question about the inconvenience caused by the installation of activities.**

Objective	Question	Answer option	Position in the survey
ENVIRONMENTAL LICENSING	<i>What has most bothered you during and/or after the installation of the enterprise?</i>	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Vibration</li> <li>• Dust</li> <li>• Water pollution</li> <li>• Deforestation</li> <li>• Visual pollution/landscape modification</li> <li>• Vehicle traffic</li> <li>• Disposal of waste in an irregular manner</li> <li>• Changes in local customs</li> <li>• Reduction of green areas in the neighborhood</li> <li>• Odor</li> <li>• Lack of enforcement by the environmental agency</li> <li>• Other: _____</li> </ul>	<b>Question 18</b>
	<i>Do you think that the agency responsible for the licensing and environmental supervision of the activity in question was efficient in minimizing the negative effects of the enterprise?</i>	<ul style="list-style-type: none"> <li>• Yes, because if it were not for the licensing and environmental supervision of the activity, the negative effects of the installation and/or operation of the enterprise would have caused much more disturbance to the neighboring residents</li> <li>• Partly, because the negative impacts could be perceived with a certain intensity</li> <li>• No, because even though I saw things that were wrong and communicated them to the environmental agency, no action was taken</li> <li>• Other: _____</li> </ul>	<b>Question 19</b>



The following two questions attempted to explore what part the population believes it can play in this binomial formed by the licensors and the licensees in pursuing environmental protection (Table 9).

In the end, the interlocutor was invited to reflect on the efficiency of environmental licensing in protecting the environment. The last question left him free to explain any answer whose alternatives did not fully express his thoughts or to contribute with comments pertinent to the research to help improve, more and more, environmental licensing (Table 10).

### Data collection

Data were collected using an online form created in the Google Forms platform, which originated an access link published mainly through social networks (Facebook®, Instagram®, and LinkedIn®), in accordance with the virtual sampling technique called “snowball.”

This technique corresponds to a viral strategy based on the fact that the message is sent by a sender from the recipient’s social circle, giving the message a chance to be treated in a friendly way. Thus, each member of the social network establishes connections with other contacts in their network, in order to disseminate the invitations. Therefore, the formation of the sample takes place throughout the process

and depends on the intensity of the interactions carried out, not being previously determined (Costa, 2018; Vieira, et al., 2018).

The questionnaire was made available on July 3 and remained accessible until September 30, 2020.

### Data analysis

The data obtained from the questionnaires were tabulated in electronic spreadsheets that allowed the organization and analysis of each question separately.

The closed questions produced nominal data, and their answers were analyzed using descriptive statistics whose results were presented in the form of graphs and tables, which allowed their interpretation and discussion.

The open questions resulted in qualitative data based on the impressions, opinions, and points of view of each respondent. These results were interpreted based on content and semantic analysis (Mayring, 2010 *apud* Henkel, 2017).

Finally, the results were discussed having as theoretical basis the consulted bibliography and as practical support the experience of the author who has worked as a Biologist and Environmental Inspector in the Environmental Licensing and Inspection Unit in partnership with the Municipal Secretariat of Environment of the Municipality of Rio Grande/RS/Brazil for over 12 years.

**Table 9 – Question about the most active role the population could play in environmental protection.**

Objective	Question	Answer option	Position in the survey
POPULAR PARTICIPATION	<i>Would you like to have more proactive participation in the environmental protection of your neighborhood?</i>	<ul style="list-style-type: none"> <li>• Yes, because I see negative actions happening and I do not know where to turn</li> <li>• Yes, because I have knowledge of the area in which I live that could help in better decision-making about the installation and operation of activities there</li> <li>• No, because I do not think there is anything wrong with my neighborhood</li> <li>• No, because I do not have time to get involved in these types of issues</li> <li>• Other: _____</li> </ul>	<b>Question 20</b>
	<i>How do you think the population could participate in the environmental licensing process, helping to harmonize development and environmental protection?</i>	Open question	<b>Question 21</b>

**Table 10 – Reflection on the efficiency of environmental licensing.**

Objective	Question	Answer option	Position in the survey
POPULAR PARTICIPATION	<i>Considering what you know about environmental licensing, how efficient do you think this procedure protects the environment?</i>	<ul style="list-style-type: none"> <li>• Efficient</li> <li>• Indifferent</li> <li>• Not very efficient</li> <li>• Not efficient at all</li> <li>• I do not know how to express an opinion about this subject</li> </ul>	<b>Question 22</b>
	<i>Now, feel free to explain any answer whose alternatives did not fully express your thoughts or contribute with pertinent comments to our research (based on your perception of what it is important to preserve and how) that will help improve environmental licensing even more.</i>	Open question	<b>Question 21</b>

**Results and discussion**

The sample was composed of 59 individuals, coming mainly from the state of Rio Grande do Sul (88%), with the others coming from Rio Grande do Norte and São Paulo. As can be seen in Table 11, most of the respondents are between the ages of 21 and 40 years and have a college degree.

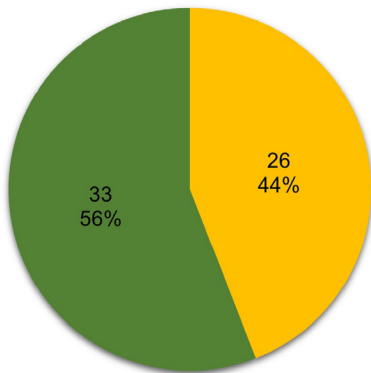
After that, the respondents were asked about their level of concern with the environment (Question 4), instigating them to reflect on the theme, in order to prepare them for the rest of the questioning, as can be seen in Figure 1.

Most respondents (56%) said that they were concerned about the environment. It is important to highlight that none of the respondents said that they are not concerned with environmental issues, nor did they say they were indifferent, which demonstrates that the population perceives that the degradation of the environment can affect their lives, illustrating an active environmental perception.

**Table 11 – Population statistics.**

Question	Question options	Respondents
Age group (Question 1)	Up to 20 years old	2
	21 to 40 years old	33
	From 41 to 60 years old	13
	Over 60 years old	11
Education (Question 2)	Non-literate	0
	Elementary	0
	High school	6
	Undergraduate	25
	Graduate	11
Estate (Question 3)	Rio Grande do Sul	52
	Rio Grande do Norte	1
	São Paulo	6

■ Very concerned ■ Worried ■ Slightly Concerned ■ Indifferent



**Figure 1 – Level of concern with the environment.**

To understand how the interlocutor sees the environment around them, they were asked if they perceive or have already noticed any situation related to the degradation of the environment in the surrounding areas of their place of work or where they live (Question 5), and they were asked to indicate, in sequence, which situation was observed (Questions 6 and 7).

Only one interviewee answered that he did not notice anything, and three said they did not know if something like this had happened around them. On the contrary, 7% of the respondents said that they perceive it, but that the fact is not a problem. Among the situations observed were the noise emission, the irregular disposal of waste, and the installation of residential developments with the suppression of wetlands.

However, 86% of respondents said that they do observe situations of environmental degradation that bother them. In Figure 2, we present the main situations mentioned.

When it comes to licensed enterprises, the analysis of the licensing processes should result in the establishment of conditions and restrictions that avoid and/or minimize the negative effects of both the installation and the operation of the activities. However, the issues brought up by the population in response to the questionnaire represent a weakness in the licensing and, especially, inspection procedures.

Corroborating this perception, the National Confederation of Industries (CNI) expressed that it considers environmental licensing as an important tool for environmental conservation. However, there is an understanding that the way it is currently performed does not guarantee the protection of environmental resources (CNI, 2019) given that administrative procedures have proven to be highly bureaucratic, without taking into account the practical effects of decision-making on the environment (Barros et al., 2017; Machado and Agra-Filho, 2022).

On the contrary, other sources of pollution must be controlled by means of environmental inspection, which are more difficult to be caught in the act in a way they are liable to accountability. In this case, community involvement is extremely important to help identify offenders, in order to restrain such actions (Zanini and Rocha, 2020).



**Figure 2 – Situations of environmental degradation observed by the population that generate discomfort.**



Thus, in Question 8, they were asked what actions they took in regard to the aspects that caused them discomfort. As much as most respondents said that they were concerned about the environment and observed signs of degradation around them that bothered them; only 25 (42%) respondents took some sort of action, such as participating in demonstrations or public hearings, communicating with the environmental agency, or taking the matter to a politician. The other 27 (45%) respondents reported that they just talked to a friend about the situation but did not take further action. Finally, the remaining 7 (12%) said they took no action.

Following the example of the actions carried out by the respondents in the statements above, we can see that the population can and should play a more active role in favor of protecting the environment in which they are situated. Great results in the environmental area can result from small actions, which should be valued and encouraged (Alves and Resende, 2020). The best way to motivate people to do this is to awaken the feeling of belonging to the environment, making them multiplying agents of good practices (Santos, 2020).

Then, the respondents were asked which segment they consider to be the main segment responsible for the damage to the environment (Question 9, Figure 3).

From the results in Figure 4, we observe that 28 (48%) respondents understand that society is responsible, as they believe it stays silent on environmental degradation and does not defend the quality of life we can get from a healthy environment.

The other respondents were regularly divided to hold the government (10%) responsible for the environmental damage, for not monitoring the compliance with the legislation, as well as economic activities (20%) that only think about making a profit, leaving aside the socio-environmental factor of its activities.

Thus, it can be concluded that accountability must be shared between these three segments, each with its own share of blame, and the government is referenced for not investing in educational campaigns

that culminate in transforming the population into an army of environmental inspectors.

According to Borile and Calgaro (2016), the ideal is that the decision-making process is agreed between the interested parties– entrepreneurs, public authorities, and affected civil society– so that the environment is democratically used, sharing responsibilities. In the same line of argument, Maldaner et al. (2019) concluded that the constructions and deconstructions of future scenarios must have the active participation of all actors involved, both public and societal.

Attention is drawn to the potential that the population holds for environmental protection and that is underused by governments, which is to play the role of enforcement agents. Moreover, in addition to qualifying the society, which still has a low level of education regarding environmental laws and procedures for licensing an activity (Fernandes et al., 2008; Giaretta et al., 2012), it is necessary to clarify the role that each actor should play in the governance system, including defining the strategies and participation mechanisms, in order to promote greater transparency of actions (Rodorff et al., 2015).

Then, the respondents were asked to think about the compatibility of socioeconomic development with the preservation of the environment (Question 10). Of the 59 respondents, only 9 (15%) understand that socioeconomic development is not compatible with the preservation of the environment, as the environmental impact is inherent in every development process. In other words, society must opt for economic development, accepting the impacts arising from degradation, or it needs to give up a series of consumer goods and amenities to ensure a healthy environment for present and future generations (Romeiro, 2012).

Showing themselves to be appeased with environmental problems, 2 (3%) respondents answered that, although they believe in the incompatibility of these two factors, there are situations in which the impact generated by an activity must be accepted as a price to be paid by society in exchange for the development of a region.

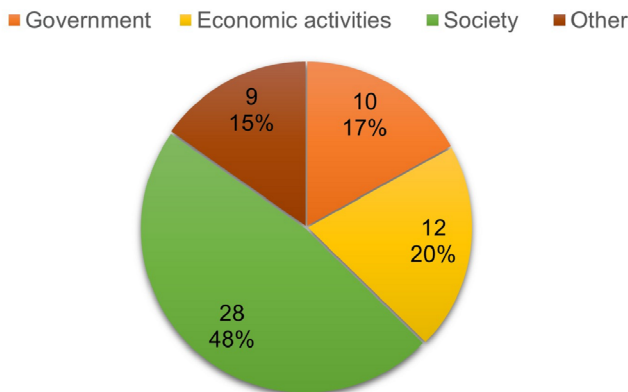


Figure 3 – The main segment responsible for the damage to the environment.

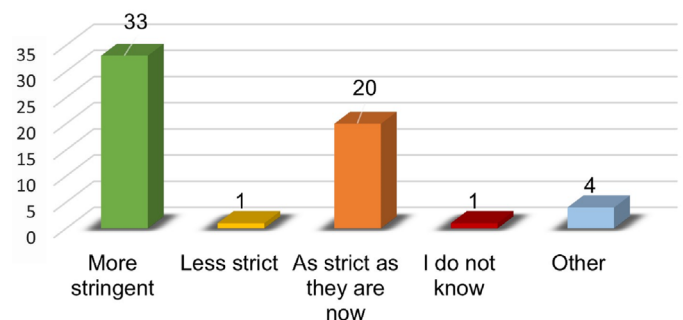


Figure 4 – Perception of the population about how Environmental Laws should be.

Therefore, there are two pessimistic views of environmental licensing, which loses the sense of prevention and begins to be seen as a tool for minimizing the side effects of development.

In contrast, 38 (65%) people answered that they believe that socioeconomic development is compatible with the preservation of the environment, as long as there is an environmental control of the polluting sources. In this study, once again, licensing assumes its role of guaranteeing the integrity of ecosystems and their ecological functions before they are completely degraded (Cirne et al., 2022).

Therefore, it is understood that the application of the principle of sustainability — guiding the compatibility of socioeconomic development with the preservation of the environment — supposes the imposition of some sacrifices on society (Canotilho, 2010), which must be aware of the costs and benefits involved in decision-making processes of environmental agencies.

It must be recognized that environmental licensing seeks to implement the principle of sustainability when it assesses the feasibility of a given activity to install itself in a specific location, taking into account the negative effect that could result from its operation. However, when the incompatibility of environmental impacts with the ability of the environment to absorb them is verified, environmental agencies are generally labeled as enemies of development.

Again, we emphasize the importance of instructing society about the aspects evaluated during licensing procedures and their consequences, thus promoting transparency actions with the objective of gaining the support of communities for decision-making processes in favor of quality of life (Alves and Canestrini, 2020).

Regarding the laws enacted by governments on this issue (Question 11, Figure 4), most respondents believe that current regulations should be stricter, given that environmental degradation has advanced considerably. However, some believe that the legislation must maintain its current rigor or even be less strict in view of the advancement of technological functions that have minimized the negative effects of certain activities.

Attention was also drawn to the fact that the laws are strict enough, but the inspection bodies do not always have the necessary staff to meet the demand; moreover, the population remains silent when they see any irregularities.

Furthermore, when asked about the importance of environmental issues during the planning of a city (Question 12), 100% of the respondents stated that this is an important issue and that, therefore, it should be part of public policies for the management of urban centers.

To register spontaneous thinking on the subject, the interlocutors were asked to, upon hearing about environmental licensing, inform which word, phrase, or image seemed to best represent their feelings (Question 13). In Figure 5, the main comments are presented, separating them into the positive or negative perception that they reflect

Out of the 59 responses on the forms, 36 showed a positive perception about licensing, while the other 23 showed disbelief with environmental procedures.

INTUITIVE PERCEPTION OF THE POPULATION Regarding what environmental environmental licensing	
POSITIVE PERCEPTION	NEGATIVE PERCEPTION
Responsibility	Lack of transparency
Protection	Bureaucracy
Concern	Slowness
Permission	Disbelief
EIA-RIMA	Confusion
Preservation	Delays
Important	Blind eye
Enforcement	"Will it go now?"
Negotiated responsibility	Releasing documents
Sustainable development	De-characterization of the space
Control and care	It hinders development
Important	Don't know how to answer
Sustainability	Doubt, credibility, trust
Optimism	In some issues I see a certain exaggeration
Seriousness	Amount to be paid, because the damage, almost always is irreversible
Conservation	Fees for purposes that are not explained
Monitoring	State permission to degrade the environment
Necessary and indispensable	Privilege granted to a few, who have influence in the political environment
Responsible use of space and/or natural resources	Exacerbated growth of the burning of the Amazon forest and the absence of the government in adopting more energetic preservation attitudes
Legislative organization and supervision	Fear because of the terrible political decisions that can be made regarding an issue that would collaborate in a positive way for the sustainable development of Brazil
Concern about how and where companies can degrade the environment	There has to be a strong campaign to clarify and commit the population and the public power to assume the relevance of their role in the environmental issue
Recovery of space or revitalization;	Feeling of impotence in knowing that many activities are improperly licensed for political, immoral and unethical reasons
Care for the environment to develop activities	It is for entertainment. What it does least is protect the environment. It is susceptible to change under pressure (corruptible).
Maintaining respect for and renewing natural resources is the way to chart the future of a sustainable society	
I think of something related to control/management of how companies interfere with the environment and to what extent they can do so	
A body responsible for mediating/monitoring issues related to the environment comes to mind. I also think of a body responsible for licensing business works and analyzing how much it will degrade or impact the environment of a certain city, etc.	

Figure 5 – Intuitive perception of the population about what environmental licensing is.

The key negative points raised refer to issues that characterize the main problems of public administration, such as lack of transparency in procedures, feeling of impotence among the population, political influence, excessive bureaucracy, and slowness. In contrast, the positive view mentioned by the population demonstrates that the environmental protection tool can be efficient, as long as it is used properly (Abreu and Fonseca, 2017; Bragagnolo et al., 2017; Nascimento and Fonseca, 2017; Loomis and Dziedzic, 2018; Nascimento et al., 2020).

Some questions were also made in order to grasp the level of knowledge that the interlocutor has on the subject of environmental licensing.

As for the purpose of environmental licensing (Question 14), most respondents (91%) understand that it is a way to control where and how enterprises may be installed, and it is an important tool for the protection of natural resources. However, for one respondent, it is nothing more than an “attempt to legitimize environmental degradation.” The other respondents affirmed that it is a document that companies must have but do not know what it is for.

About the opportunity to see an Environmental License (Question 15), 58% of the respondents said they had never seen the document. In addition, only 9 (15%) of the respondents have ever followed the installation of any enterprise in their neighborhood that has undergone environmental licensing (Question 16).

Those who answered that they had followed the installation of some project in their neighborhood were asked if the community had been informed about the activity (Question 17). Of the nine respondents, four respondents said they were not informed about the work in question, three respondents said that both the company responsible for the licensing and the technicians from the environmental agency talked to the community, one respondent answered that only the technicians from the environmental agency provided information to the community, and one respondent called attention to the Environmental Council and the City Council as a form of discussion and dissemination about the activity.

In addition, these respondents stated that several negative impacts could be perceived with some intensity, which directly influenced the quality of life of the surrounding communities (Question 18, Figure 6), demonstrating the weakness of the environmental agency.



Figure 6 – Situations observed by the population.

Furthermore, when questioned about the efficiency of environmental agencies in minimizing the negative effects of ventures that have been installed (Question 19), four respondents believe that, without this control, the effects caused by the installation and/or operation of ventures could be much more harmful. On the contrary, the other five respondents perceived the inefficiency of the environmental agency, given that many negative effects were perceived. Besides, even when informed of the irregularities observed, no action was taken by the environmental inspectors.

It is important to emphasize that all situations observed represent forms of environmental degradation that should be avoided and/or minimized through environmental licensing. Therefore, the fact that the population perceives them ends up raising some doubt regarding the efficiency of licensing.

It is worth noting that the population feels uncomfortable with the negative effects of the projects and that it could help to identify them. According to Giaretta et al. (2012), the population brings, through participation, knowledge and experiences that are inherent to it and that are often imperceptible to the local government and its agents.

However, in order for society to play its role as a citizen inspector, it must first understand the rules stipulated by environmental agencies to allow the installation of a given enterprise, and above all, it must have a communication channel that connects the population and the environmental agency efficiently.

For example, according to information provided by the Henrique Luiz Roessler State Foundation for Environmental Protection (FEPAM), the institution responsible for environmental licensing in the Rio Grande do Sul, most of the complaints filed by the population with the state agency in the years 2020 and 2021 were not within its competence or were not valid, as can be seen in Figure 7 (FEPAM, 2021).

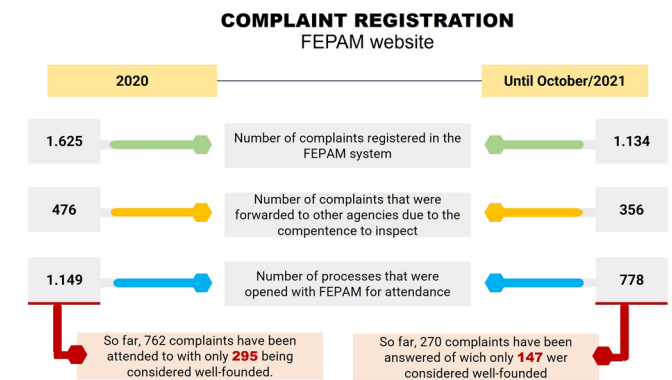


Figure 7 – Information provided by FEPAM, Rio Grande do Sul environmental agency, referring to the complaints registered in the years 2020 and 2021.

This information reinforces the importance of capacitating the population, which shows that it is aware of what happens around it. However, without the necessary knowledge to discern what should or should not be taken to the environmental agency, it forces the efforts of the inspection teams to be directed to unnecessary situations. In this line of thought, Noga et al. (2021) reflected on the importance of science popularization, considered a valuable tool to transcend the technical limits of environmental conservation and materialize in people's daily lives, generating positive effects in society.

Taking into account the extremely important role that the community can play in favor of environmental preservation, respondents were asked if they would like to play a more active role in the environmental protection of their neighborhood (Question 20). It was observed that most people who answered this question would like to participate more actively (30.5%), either because they are knowledgeable in the area and would like to help or because they notice negative things happening but do not know who to turn to (37%). On the contrary, 15% of the respondents said they had no time to get involved in issues of this kind, and 7% said they had no interest in participating more actively because there was nothing wrong with their neighborhood. In addition, 5% mentioned that age and health problems are obstacles to more effective participation, and 3% said that there are already people working in their neighborhood and that their participation is dispensable.

We also tried to explore what role the population believes it can play in searching for environmental protection (Question 21). The analysis of the answers allowed us to organize the ideas and suggestions into two groups, as can be seen in Figure 8.

It can be seen, from the answers represented in Figure 8 that most respondents understand that, first of all, the population must acquire knowledge about environmental issues, requiring their constitutional right to environmental education as a form of empowerment for their active participation.

According to Dutra et al. (2019), environmental education is able to bring the environmental theme into people's daily lives, contributing to a behavioral change. Therefore, carrying out educational campaigns aimed at sharing knowledge by translating technical information into a more accessible language about the importance of licensing and inspection, its procedures and the expected effects of an efficient performance are essential to draw the population's attention to the subject.

After gaining the involvement of the population, it is necessary to establish an efficient communication channel between the community and environmental agencies, given that another commonly reported complaint is that, when they perceive something threatening the environmental integrity, the population does not know who to turn to, nor what to do with the knowledge they have.

Thus, the population, in addition to being fully aware of the particularities of the environment in which they live, as well as of the tools available to protect it, would be able to seek information that should be

made available on online sites about environmental licenses and their conditions. Once they perceived changes in the behavior and quality of the environment, they would trigger the environmental agencies aiming to restrain actions that are harmful to the environment.

It should be noted that this type of engagement of the population, based on the encouragement of public authorities, characterizes a form of participatory management of decision-making processes that, through the appreciation of participants and rescue of their identities, enables the construction of a new type of citizenship based on engaged participation (Costa and Cunha, 2010).

<b>SUGGESTIONS FROM THE POPULATION</b>	
About how they could collaborate with the environmental agencies to protect the environment.	
Preparing the population to participate more actively	Ways of participation
<i>"Through full education, knowledge of and interaction with the environment in which people live, the strengthening of environmental empathy and perception for the landscape, even urban."</i>	<i>"Participation in public policy through plebiscites, debates, and more democratic participation spaces."</i>
<i>"First of all, the population needs to know what environmental licensing is all about, to be provided with information, to contextualize the positive and negative actions."</i>	<i>"Increasing the spaces for public participation and social control."</i>
<i>"Informing their perceptions and concerns about the enterprise".</i>	<i>"Participating in research on the subject, giving your opinion."</i>
<i>"Serious and continued environmental education."</i>	<i>"Be more participative when called to meetings"</i>
<i>"The population does not have enough technical knowledge to give an opinion, but as people who know their region, they can collaborate by providing accurate information about what really impacts their lives and should therefore be considered during the analysis of environmental processes."</i>	<i>"Participation in community meetings."</i>
<i>"The first step would be to raise awareness about the importance of environmental protection and the actions that take place around it."</i>	<i>"Reporting irregularities, helping with fiscalization, demanding action from those responsible."</i>
<i>"Dissemination of the main enterprises that are under discussion in the municipality with an impact assessment in accessible language."</i>	<i>"Informing your perceptions and concerns about the enterprises."</i>
	<i>"Demanding stricter rules for licensing from the government."</i>

**Figure 8 – Suggestions from the population about how they could collaborate with the environmental agencies to protect the environment.**

However, as highlighted by Do Carmo and Silva (2013, p. 4),

It is important to understand that public policies are adopted at a given time and within a given context, that the government has political power to make decisions according to the preferences and interests of the various actors and that, in a democratic government, such preferences and interests are permanently negotiated. Understanding the peculiarities of this process is the first step to act towards the improvement of public environmental policies in a context of an imperfect democracy, in which some actors have more power than others.

Thus, the construction of participatory agendas, such as those mentioned above, depends, to a great extent, on the ability of managers to understand that popular action can positively add to environmental protection policies, helping to make licensing increasingly efficient.

At the end of their participation in this research, the respondents summarized their position on environmental issues and popular participation in decision-making processes that can influence environmental licensing.

According to respondents, environmental licensing can be very efficient if committed to inspection. Furthermore, due to the current stage of degradation in which the environments are, in addition to investing in prevention and preservation policies, it is extremely necessary to join efforts in favor of the recovery of impacted areas, given that, in a capitalist system, the environment is seen as a source of resources, to the detriment of its performance as a basis for sustaining life. It is only by changing this system that you can actually control the environmental impacts.

In addition, with regard to the participation of the population in the licensing process, it is necessary to disseminate guidelines in accessible language to facilitate popular inspection and allow for more assertive irregularity news.

Finally, there is a consensus among respondents that the awareness of society must be continuous and that the rules stipulated by environmental agencies should be more accessible to the population.

## Conclusions

Through this study, it was possible to observe that the population has an active environmental perception, since they understand the environment in which they live and understand the negative effects of anthropic actions on their quality of life. However, environmental awareness, composed of attributes such as attitude, behavior, and cognitive aspects, must be improved.

The results of this research show that the population recognizes itself as one of those responsible for the environmental degradation that affects its quality of life. Thus, by being aware that they know the particularities of the environment in which they live, as well as being able to perceive errors and successes in the decision-making of public management that directly influence their daily lives, they find the motivation to participate in this process.

On the contrary, there is an understanding that the forms of participation offered by the public power are still presented as complex events, in which the citizen does not see himself as a functional part. Unmotivated, they no longer exercise their direct participation, delegating this right to a representative. There is, therefore, a desire to simplify the methods offered by public management for the exercise of citizenship, so that the citizen feels at ease to expose the knowledge he has about the region where he lives.

Thus, we conclude that the engagement of the population affected by the decisions of the public power can be the driving force for a more just and participatory society, whose success is influenced by factors related to environmental education, aimed at the formation of environmental awareness, the availability of information, from the transparency of actions, and the simplification of the forms of democratic participation that are closer to the citizen.

## Contribution of authors:

HAMMES, H. F.: Conceptualization; Data Curation; Formal Analysis; Acquisition; Investigation; Methodology; Project Administration; Visualization; Writing – Original Draft; Writing – Review & Editing. SIQUEIRA, T. M.: Conceptualization; Data Curation; Formal Analysis; Acquisition; Investigation; Methodology; Project Administration; Supervision; Visualization; Writing – Original Draft; Writing – Review & Editing. KAISER, M. F.: Visualization; Writing – Original Draft; Writing – Review & Editing. GUTERRES, D. S.: Visualization; Writing – Original Draft; Writing – Review & Editing. MARQUES, D. S.: Supervision; Writing – Review & Editing.

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