


Article

Public Acceptance and Support of Renewable Energy in the North-East Development Region of Romania

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Abstract: Concern about energy in the European Union (EU) has been a recurrent issue from the very beginning. Though initially addressed at the state level, energy is now a shared competency as stressed by article 194 of the Treaty on the Functioning of the European Union. New challenges, added from time to time, need public support in order to be properly addressed. Such is the case of substituting traditional energy production with renewable energy sources. Our paper seeks to determine whether the Romanian public opinion favors such an evolution, which is traditionally associated with significant investment efforts. The study is focused on the north-east development region, which has the highest population and registered the fastest economic growth in 2019. The topic was explored through a survey applied to a sample of 649 household respondents. The results suggest strong support for introducing renewable energy sources, serious concerns about climate change, and a preoccupation for energy saving. Concerns regarding climate change or various economic factors, behaviors oriented towards reducing energy waste, as well as perceived knowledge on the matter are the factors with the biggest impact on supporting electricity production based on renewable energy sources. However, TV and online exposure have a negative impact on support. Demographics, along with social and political values remain mostly not significant.

Keywords: renewable energy; energy policy; public opinion; European Union; Romania; north-east development region of Romania



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1. Introduction

Energy policy can be considered the political issue of the decade. It is tied to climate change, energy security, and, more prevalent in recent decades, energy poverty—complex and highly debated issues, involving various actors and conflicting points of view. Indeed, energy policy is a top priority. While the issues of security and sustainability can be addressed through local production of renewable energy, the policy mechanisms that support the development of clean energy production can generate price increases and market volatility, which can have a negative impact on vulnerable consumers, especially during economic downturns. The aim of this paper is to identify the factors that have a significant impact on shaping public opinion on renewable energy. We seek to achieve this through means of a survey applied to a proportional sample of households within the north-east development region—the poorest and most populous region of the country. It has the nineteenth lowest GDP per capita among the EU NUTS-2 regions and was chosen as the target of our survey given that its population is the most likely to prioritize the more immediate threats of poverty and economic underdevelopment over the more intangible issue of climate change.

The main contribution of the paper is its quantitative assessment of public opinions on the development of renewable electricity production. By understanding the factors that

impact public support for clean energy, we provide policymakers and researchers with a better understanding of the gap that exists between Romania and other European nations with regard to viewing climate change as an ardent and significant problem.

The literature review section presents the evolution of the policy framework regarding sustainable development in the energy sector at the European level, as well as the distinct context in which energy policies have been designed and the manner in which they have been implemented in Romania. This is followed by a presentation of the methodological design, as well as the descriptive results of the study. Next, we provide an outline and brief explanation of the main findings related to the hypotheses, with an emphasis on the more unusual results. The Discussion section explores the links that exist between our findings and the existing literature in the field, underlining some instances in which the results diverge from common expectations. Finally, the Conclusion presents a summary of the results, as well as the limitations and future research avenues.

2. Literature Review

In 1951 the “Treaty establishing the European Coal and Steel Community” was signed. Moreover, the integration of Europe was beginning. In 1957, a new energy-based institution—the European Atomic Energy Community—would arise.

In 2006, European Union (EU) member states were wasting at least 20% of their energy. The EU was facing unprecedented energy challenges resulting from increased import dependency, concerns over supplies of fossil fuels worldwide, and a clearly discernable climate change [1]. The direct cost of the inability to use energy efficiently was estimated at more than EUR 100 billion per year by 2020.

Hence, the Action Plan for Energy Efficiency 2007–2012 came with the “20/20/20” targets:

- a reduction in EU greenhouse gas emissions of at least 20% below 1990 levels;
- a minimum target of 20% of EU energy consumption to be covered by renewable resources;
- a 20% reduction in primary energy use (versus ‘business-as-usual’ projections), to be achieved mainly through energy efficiency improvements.

Consequently, the Commission issued a communication to the European Council regarding an Energy Policy for Europe. The new strategy sought to set the European Union on the path of becoming a low-consumption economy with an energy sector defined by security, sustainability, and competitiveness. The Energy Union internal market was not yet coined at this point, but the communication did outline the idea of implementing a common internal energy market in order to improve the security of supply and reduce greenhouse gas emissions. This would allow the EU to become a global actor, speaking with a single voice at the international level and taking a leading role in the development of sustainable energy consumption [2].

National leaders came to the conclusion that a Union-wide energy policy is needed, so the Treaty of Lisbon authorized the European Union to secure the continent’s energy supply to improve the energy market, to connect energy networks throughout Europe, and to increase energy efficiency on all levels. It laid out three major challenges for European energy policy: sustainability, security of supply, and competitiveness, all of them integrated into the “Energy 2020” package [3].

The strategy focused on [4]:

- an efficient use of energy that translates into 20% savings by 2020;
- ensuring the free movement of energy;
- secure, safe, and affordable energy for citizens and businesses;
- making a technological shift;
- strong international partnerships, notably with EU neighbors.

In 2019, the European Commission announced a new European Green Deal for the European Union and its citizens. This strategic plan renews and emphasizes the EU’s commitment to act as a key global player in mitigating climate change and environmental-

related challenges. [5]. The purpose of the Green Deal is to help the EU become “climate-neutral by 2050—an economy with net-zero greenhouse gas emissions” [6].

In order to finance the activities and projects necessary for the proposed ‘green transition’, a specific financing mechanism will be used, called the Sustainable Europe Investment Plan. This is set to provide funding of at least EUR 1 trillion worth of investments, which will help the 27 member states shift from a high-carbon to a low-carbon economy, ensuring a clean and thriving natural environment, without reducing the overall prosperity and quality of life for EU citizens.

In addition to this mechanism, as a result of the aftermath of the COVID-19 pandemic, the EU has also adopted the NextGenerationEU stimulus package, worth over EUR 800 billion, that also seeks, among other goals, to help the EU member states transition towards more green and digital economies [7].

The proposed areas of investment for the two financing mechanisms mentioned above will cover reforms in most economic sectors, including energy generation, transport, manufacturing, construction, and food consumption. Even though all member states will have to contribute towards reaching this outcome, with regard to renewable energy, the starting points differ significantly from country to country. For example, the share of renewable energy strongly differs from as large as 73.1% in Austria to less than 10% in Hungary and Cyprus [8].

Given the specific local socio-economic context, each EU member state’s governmental authorities, as well as the general public, may have different views regarding energy sector reforms compared to other countries. As a result, understanding what European citizens think about the EU energy policy, and the money spent on its implementation is an important concern of some Eurobarometer surveys conducted by the European Commission.

The 2019 barometer concludes that the future of European Citizens should be about securing clean and affordable energy. Ninety percent of the respondents agree with the EU ensuring access to clean energy and moving away from fossil fuels towards energy sources with low greenhouse gas emissions. Almost 90% of the population agree that the EU must ensure access to affordable energy, ensure competitive market prices, in particular, to reduce the number of people unable to pay their energy bills. There is substantial interest in developing coherent and effective renewable energy policies as a way to secure energy and mitigate global climate change [9].

However, the same barometer shows that the population in Romania is not significantly concerned with climate change, but rather believes that the most serious problems that the world is facing are the overall economic situation and issues such as poverty and hunger. The proportion of people considering climate change as being the most serious global issue has increased by only two percentage points over the last two years. Overall, Bulgaria, followed by Romania and Lithuania, has the lowest proportion of citizens concerned with climate change.

In order to reach its ambitious goals, the European Green Deal requires public support and acceptance of its resulting policy and infrastructure reforms. Given the gap that exists between the views expressed by the Romanian public (concerned more by poverty rather than climate change) and the perspective on which the Green Deal is based (which focuses on achieving carbon neutrality), it is necessary to understand the aspects that can contribute to improving awareness and willingness to contribute to climate change mitigation among the Romanian population.

In terms of energy policy commitment, Romania has been able to surpass its Energy 2020 target of 24% share of renewable energy consumption—it reached 24.3% in 2019 [10]. In 2020, the electricity produced and delivered into the grid, which represents 97% of gross internal consumption, could be broken down by source as follows: 29% hydroelectric, 20.8% nuclear, 18.2% natural gas, 16.5% coal, 13.6% wind, 1.5% solar, and 0.4% biomass and oil [11].

The Romanian Energy Strategy for the period 2019–2030 focuses on clean, secure, and affordable energy, as well as much-needed technological upgrades within the infrastructure.

Greenhouse gas emissions, energy efficiency, as well as renewable energy consumption have been set to meet and even surpass the 2020 EU targets, as demonstrated above. At the same time, the strategy also seeks to establish an important role for more conventional fuels, such as natural gas, coal, and nuclear, in the following decades. One of the main pillars of the strategy is to ensure the development of natural gas infrastructure and supply, given that Romania does have significant reserves [12]; the exploitation of which would help offset the increased end-user costs associated with renewable energy development [13].

With regard to the north-east development region of Romania, which is the focus of our study, we also observe a steadfast commitment to develop the energy sector. The Regional Development Strategy of the north-east region mentions renewable energy as one of the key opportunities for the region. The promotion of energy efficiency is one of the objectives of the strategy seeking to increase the energy efficiency of public institutions, households, and companies. This objective is included in the fourth priority of the strategy, Measure 4.1.1. "Optimizing use and protection of natural resources and natural heritage". Clean energy is also referenced in the third priority of the strategy: "Supporting a competitive economy and local development", Objective 3.1: "Support innovation and competitiveness of economic environment, promoting obtained results", Measure 3.1.2. "Support for competitive fields and integrated production systems, including the development of new, high value-added, "green" products, services and technological processes".

However, policies that promote the development of electricity production from renewable sources, even if designed robustly, will not prove to be successful if governmental authorities do not take note of the local or national public opinions and perceptions. The extent to which such policies are supported by citizens depends on factors such as: how the public processes information, how they perceive threats, as well as their level of trust in governmental institutions and the private sector [14]. These are issues that we sought to explore ourselves in the current study. We believe that there is a risk of partial failure of the Romanian energy sector development strategy, given the above-mentioned gap between the Romanian public's lack of concern with climate change and the Government's focus on renewable energy development and other energy sector reforms which are likely to impact the energy bills of consumers.

In addition to the economic concerns related to energy prices, which may be more relevant in the context of Romania, one large-scale survey of German citizens found several determinant factors for protest intentions and acceptance regarding the construction of new power plants in the relative vicinity of residential areas. The type of energy source, attitudes towards climate change, and social norms, as well as other social and psychological factors, were shown to have a significant impact on whether the public is willing to accept or intends to protest against the development of renewable or more conventional power plants [15]. These are examples of elements that need to be taken into consideration by governmental authorities who wish to successfully implement energy sector reforms.

Thus, in order to design, communicate, and implement clean energy policies in a successful manner, a good understanding of the public's perceptions regarding the threats of climate change and environmental degradation is necessary. Well-designed studies can help point out how these factors impact the public's level of support of renewable energy policies [14].

The willingness to support the development of electricity production from renewable sources is often conditional, influenced by other factors, such as costs and taxes, especially considering the focus that the Romanian public places on the economy and poverty as the most significant global risks. The above-mentioned study by Bord et al. [14] provides strong evidence that risk perceptions of climate change threats are related to policy support for renewable energy initiatives. Furthermore, Lucas et al. [16] underline the importance of consumer empowerment and the active involvement of the public in the energy market as purchasers, investors, and even producers of clean energy. Evidence produced across several studies suggests that to which the public is educated on climate change (and the risks that it generates), as well as the benefits of renewable energy, has a direct impact on

popular support for green energy reforms [14–18]. It can be argued that, by establishing a personal connection between the individual and the impact of climate change through well-designed and broadly disseminated communication campaigns, policy support for renewable energy development can be successfully enhanced.

Another study focused on public perceptions regarding climate change on the European continent developed a conceptual framework of the Climate Change and Energy module that includes variables and constructs such as personal norms, efficacy beliefs, social and institutional trust, socio-political values, and engagement, climate change beliefs [19]. Based on the discussions in the above-mentioned studies, as well as the researcher's own experience in the field, a series of hypotheses were formulated. All of them relate to the core issue of pinpointing the factors that influence public opinion regarding green energy policies. As a result, the hypotheses have a common formulation presented below.

The perceived necessity of replacing traditional electricity production with renewable energy sources production is influenced by:

- H1—concerns regarding climate change;
- H2—concerns regarding energy saving;
- H3—concerns regarding energy security;
- H4—concerns regarding environment pollution;
- H5—concerns regarding public health;
- H6—concerns regarding biodiversity;
- H7—concerns regarding economic development of the respondents' region;
- H8—concerns regarding electricity price
- H9—concerns regarding shortages in electricity provision;
- H10—self-perceived knowledge level on the matter;
- H11—social values;
- H12—political values;
- H13—demographic characteristics;
- H14—media exposure;
- H15—efficacy beliefs;
- H16—social and institutional trust.

All of the hypotheses were tested based on an ordinal regression analysis.

3. Methodology and Descriptive Results

The data were collected through a questionnaire-based survey, implemented using the Computer Assisted Web Interview (CAWI) procedure. The data collection was performed using an infrastructure equipped with the Sawtooth Software Lighthouse Studio version 6.6 platform. The data analysis was performed using IBM SPSS version 23 Professional.

The target population of the study is formed by residents of the north-east region of Romania, with ages of 18 years and above, (mean: 44.1, standard deviation: 12.64). The sample size was 649 respondents. A quota sampling procedure was used with respect to residence, gender, and age. Urban sampling was deliberately overweighted given the expected larger heterogeneity. Weighting cases was applied in order to correct age bias.

The opinion about turning to renewable energy sources (RES) was measured, initially on a 6-point scale. The analysis showed thresholds with non-significance, that suggesting "the cutting points are not truly different and therefore some levels of the dependent variable need to be combined" [20]. As a result, the final scale is a 4-point one, illustrated in Table 1.

Table 1. Attitudes towards RES or traditional production of electricity. Q: From your point of view, should Romania give up to traditional electricity production (coal, fossil, etc.) and move towards production out of renewable energy sources (aeolian, photovoltaic, biomass)?

Strongly Agree	Agree	Disagree	Strongly Disagree
70.60%	17.80%	8.00%	3.60%

Perception of efficacy was measured through two multi-item scales (see Table 2). One of them referred to perceived preoccupation at the institutional and public level, the second one referred to the perceived capability of institutions and the general public to support a transition towards renewable electricity sources electricity production (RES-EP). A reliability analysis was performed and Cronbach's alpha scored 0.907 for perceived preoccupation and 0.897 for perceived capability.

Table 2. Perceived preoccupation and perceived capability for turning towards RES-EP at the institution and community level.

	Overall Preoccupation for Change ¹	Overall Capabilities for Change
Mean	2.91	2.89
Std. deviation	1.04	1.04

¹ multi-item scale; each item was measured on a 5-point scale where 1 states "a very small extent", while 5 states "a very large extent".

The question regarding the existence of climate change was measured on a 4-point modified Likert scale, as seen in Table 3.

Table 3. Responses regarding the existence of climate change. Q: Is it true, from your point of view, that we are currently facing climate changes?

Certainly Yes	Rather Yes	Rather Not	Certainly Not
67.60%	26.4%	4.0%	2.1%

A follow-up question (see Table 4) was also addressed for those who responded "certainly yes" or "rather yes" to the question presented in Table 3. This enquired whether the existence of climate change is caused primarily by human actions and the responses were provided on a 5-point Likert scale.

Table 4. Responses on whether climate change is caused by human actions. Q: Is it true, from your point of view, that human activity is the main cause for climate changes?

Totally Agree	Agree	Neither Agree/Nor Disagree	Disagree	Totally Disagree
39.70%	33.8%	20.2%	4.1%	2.1%

The perceived effects of turning towards RES-EP were also measured on a 5-point Likert scale, as demonstrated in Figure 1. The illustration style is inspired by other studies in the area of public acceptance of renewable energy [21].

As seen in Figure 2, we also assessed the main overall concerns that respondents had regarding society, the economy, and the energy sector. These were also measured individually on a modified 5-point Likert scale.

The political orientation and social values of respondents were measured through self-evaluation on a right-left/conservative-liberal political spectrum, as demonstrated in Tables 5 and 6.

The results presented in Table 5 are in line with the results of the three rounds of elections held in 2020 in Romania, where predominantly center-right and right-wing political parties were successful in forming majority coalitions in local and national governmental bodies.

The willingness and pursuit of improving energy efficiency at the household level was measured on the same modified 5-point Likert scale illustrated in Figure 2. The results are illustrated in Table 7.

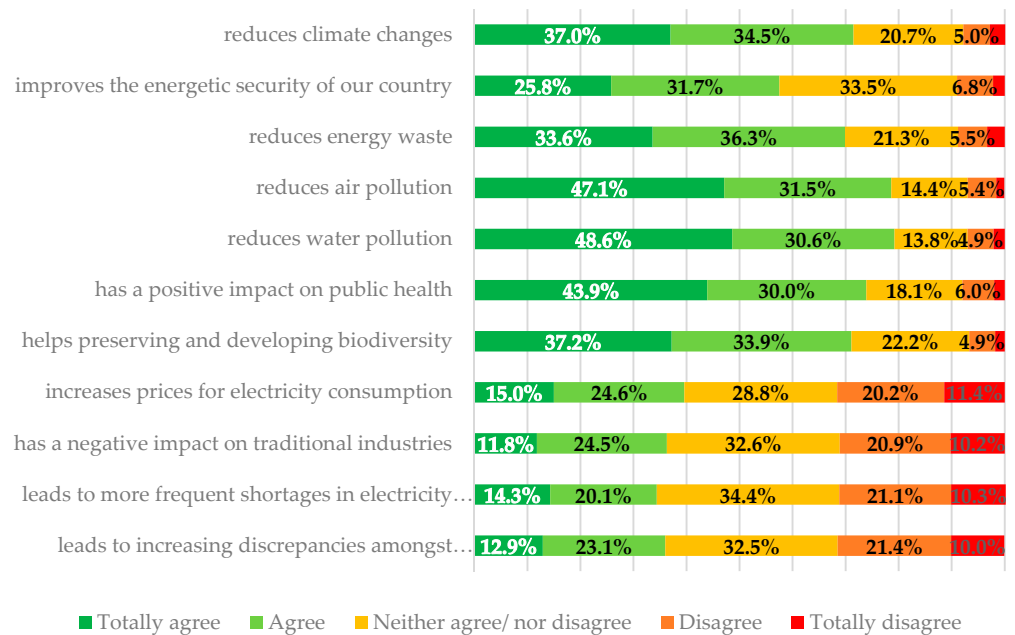


Figure 1. Perceived effects of turning towards RES-EP.

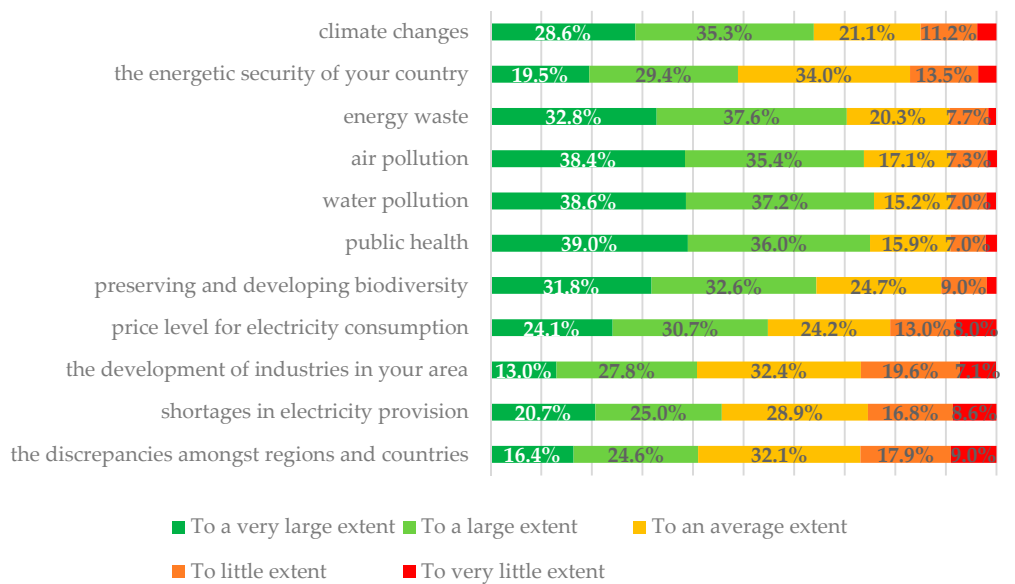


Figure 2. Main concerns regarding society, the economy, and the energy sector.

Table 5. Political orientation.

	Right Wing	Centre-Right	Centre	Centre-Left	Left Wing
Your political preference is rather:	37.00%	34.50%	20.70%	5.00%	2.90%

Table 6. Conservative vs. liberal attitude.

	Definitely Conservative	Rather Conservative	Rather Liberal	Definitely Liberal
You see yourself to be rather:	22.30%	38.30%	23.20%	16.10%

Table 7. Energy consumption behavior.

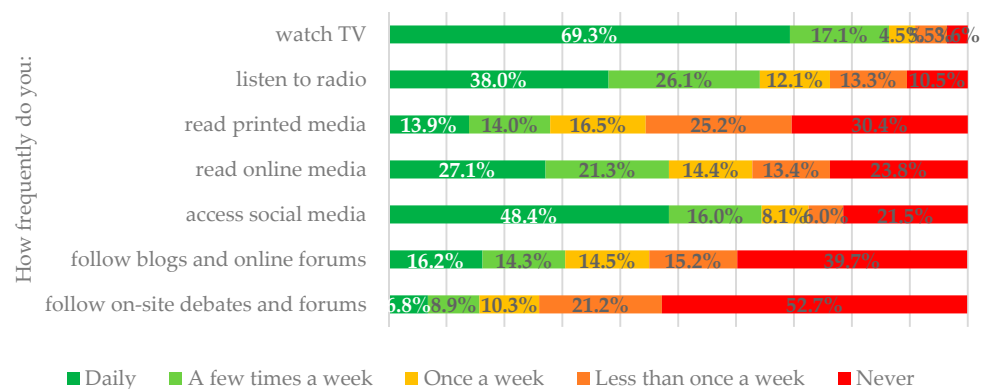
	To a Very large Extent	To a Large Extent	To an Average Extent	To Little Extent	To Very Little Extent
At your household level, are you looking for solutions aimed at energy saving?	30.30%	35.70%	24.60%	6.60%	2.70%

Respondents were asked to assess their level of knowledge regarding the topic of the survey. This self-evaluation is, however, of a subjective nature (see Table 8). The use of objective evaluation scales based on true/false statements proved to be difficult to reliably implement in past studies performed by the research team on similar population samples.

Table 8. Perceived level of knowledge. Q: To what extent do you consider yourself a well-informed person when it comes to environment and renewable energy sources?

To a Very Large Extent	To a Large Extent	To an Average Extent	To Little Extent	To Very Little Extent
10.20%	26.80%	45.40%	14.00%	3.70%

Finally, the respondents were also evaluated from the perspective of media consumption—a factor that has proved to be significantly correlated with environmental attitudes in previous studies. The results are detailed in Figure 3.

**Figure 3.** Media exposure of respondents.

The descriptive results presented in Tables 1–8 and Figures 1–3 were used in order to generate relevant variables and test the hypotheses of the study. The following section illustrates the results of the regression analysis employed for this purpose.

4. Main Findings

An ordinal regression was used in order to test the hypothesis presented in Section 1 of the paper. The chi-square statistics—for intercept only—is statistically significant, thus the model (logit linked) makes sense.

The goodness of fit, measured through both Pearson and deviance scores, is more than 0.05, thus the model can be considered accurate enough. Pseudo R square scores were 0.281 (Cox and Snell), 0.340 (Nagelkerke), 0.189 (McFadden).

However, the presumption of the slope coefficients in the model is the same across response categories and is denied by the test of parallel lines that scores significantly.

Consequently, a generalized linear model, based on multinomial probability distribution, linked to cumulative logit, ordinal logistic type was used thereafter.

In the new model, three variables lose their previous significance; one related to age (dummy variable), one related to political orientation (dummy variable), and one related to media exposure (blogs and online forums).

The omnibus test is significant while the goodness of fit tests are not. Thus, the model presented in Table 9 is the version that was kept and used in the analysis.

Table 9. Results of the ordinal logistic regression. Q: From your point of view, should Romania give up on traditional electricity production (coal, fossil, etc.) and move towards production based on renewable energy sources (wind, photovoltaic, biomass)?

Parameter	B *	Sig. **
Threshold = 1	−1.718	0.036
Threshold = 2	−0.065	0.000
Threshold = 3	1.614	0.015
Right wing	0.407	0.269
Centre-right	0.208	0.616
Centre	0.070	0.856
Centre-left	0.662	0.126
Conservative	−0.334	0.386
Rather conservative	0.398	0.223
Rather liberal	−0.455	0.227
Male	0.093	0.664
25–34 yo	0.091	0.907
35–44 yo	1.096	0.151
45–54 yo	0.950	0.209
55–64 yo	0.886	0.261
65+ yo	1.349	0.085
High School	−0.112	0.725
Secondary school	−0.159	0.704
Up to 1500 RON	−0.895	0.169
1501–2500 RON	−1.493	0.019
2501–4500 RON	−1.850	0.002
4501–6500 RON	−2.186	0.001
Rural	0.058	0.804
Overall institutional preoccupation for change	−0.078	0.613
Overall capabilities for change	0.260	0.093
Concerned about climate changes	0.708	0.000
Concerned about the energetic security of your country	−0.144	0.358
Concerned about energy waste	−0.144	0.358
Concerned about water pollution	−0.212	0.374
Concerned about air pollution	0.539	0.025
Concerned about public health	0.072	0.695
Concerned about preserving and developing biodiversity	0.084	0.635
Concerned about price level for electricity consumption	−0.302	0.021
Concerned about the development of traditional industries in your area	0.644	0.000
Concerned about shortages in electricity provision	−0.240	0.144
Concerned about the discrepancies amongst regions and countries	−0.400	0.019
Are you looking for solutions aiming energy saving	0.277	0.027
Perceived knowledge about the matter at hand	0.351	0.004
TV exposure	−0.424	0.007
Radio exposure	0.036	0.689
Printed media exposure	−0.088	0.347
Online media exposure	−0.365	0.002
Social media exposure	0.184	0.106
Blogs and online forums exposure	0.164	0.168
Onsite debates and forums	0.066	0.603

* B—regression coefficient (Beta); ** Sig.—significance probability (*p*-value).

As expected, concern about climate change proves to be statistically significant and positively related to the perceived need of turning to RES–EP. This variable has the highest impact on the model.

A significant positive relationship is noticed for the variable measuring the concern about air pollution. This makes sense since the main urban communities from the north-east region have been recording a decline in air quality for the last decade. Romania is currently facing an infringement procedure on this topic. The most important city of the region, the second-most populous urban community in the country is, in fact, the main cause for the procedure.

Among those respondents who are concerned about increased energy prices, lower support for turning to RES-EP is observed. This can also be impacted by the continuous growth of the electricity bills paid by Romanian households, which is partly associated with the green certificate RES support mechanism that the government implemented in order to reach its Energy 2020 targets.

The concern for the development of traditional industries in the area, positively related with support for turning to RES-EP, is not surprising. The north-east region of Romania was traditionally a poor one, with a lower economic performance recorded immediately at the beginning of the 1990s. The current, positive trend started in 2012 reaching the highest rhythm in 2019. It seems to have been almost entirely based on new industries and technologies. Thus, the predisposition of the regional public opinion to have positive expectations regarding their economic environment when new and innovative solutions are being brought to the area can be explained.

In conjunction with the explanation above, when a phenomenon is portrayed as generating discrepancies amongst regions (and countries), it has a negative impact on its acceptance.

Those respondents who declare themselves as being more responsible towards energy consumption (looking for solutions to reduce energy waste) demonstrate a higher level of support for turning to RES-EP.

Such is also the case with respect to the perceived level of knowledge on the matter: the more informed people think they are on the topic of environment and renewable energy, the more support they offer to RES-EP.

The most surprising result is, by far, the negative relationship between supporting RES-EP and media exposure to TV and online newspapers. This remains a theme for future investigation.

5. Discussion

The results of the research suggest at least a high level of awareness regarding environmental issues among the public of the north-east region of Romania. The link between human activity and climate change also seems to be clearly assessed. Although our analysis has not been specifically checked, we have good reasons to believe that these aspects are a consequence of general debates and campaigns organized by various European and national institutions. In this context, we have to mention the fact that the region is by far one of the net beneficiaries of international grants, provided by various donors, mainly by the European Commission. Practically, all financial assistance programs are aligned, in a quasi-unanimous manner, to the requirements of the “green agenda” in terms of activity implementation and communication. That is replicated from the level of the contracting authorities, through intermediate institutions, to direct and indirect beneficiaries. When referring to beneficiaries, all the elements of the quadruple helix have to be taken into consideration: government, industry, academia, and, of course, community.

As already mentioned, the potential negative consequences that may arise with regard to price levels and supply shortages are also acknowledged, yet the level of support for renewable energy sources is high. We tend to formulate the hypothesis that this is related to the continuous improvements in household revenues and living standards that the region began experiencing mainly since 2012—the year of complete recovery after the 2008–2009 crisis. A diversification of household expenses was reported, new products and services being added to the basket of goods. This evolution was also associated with an increase in consumers’ confidence index with all its’ attitude consequences.

Does the awareness regarding environmental issues go deeper into a more elaborated understanding of the phenomena? Is that enough to forecast, assuming reasonable risks, that the declarative support for turning to renewable energy sources could overcome the financial difficulties inherent to such a development? This question will receive a nonhomogeneous answer, as our research suggests. Revenue was proven to be a significant variable in our model, which is rarely the case in similar research. Thus, our expectation is that low revenue public categories manifest a decrease in support for renewable energy sources when facing public financial difficulties. The risk of energy poverty is to be taken into consideration. Thus, authorities should pay attention to correctly identify vulnerable categories and design appropriate interventions to mitigate the negative impact.

With respect to appropriate authorities' policies, special attention should be given to how the public opinion perceives the preoccupation and capability for turning towards RES of the above-mentioned authorities. As our research suggests, the two constructs scored below a medium level. In addition, the national barometers' results refer to an unsatisfactory level of trust associated with central authority institutions. This is a potential weakness to be challenged. The relation between trust in policymakers and the success of the policies implemented has been largely supported by previous research.

Another important pillar in the architecture of gaining the support of public opinion is the media. Our research suggests that TV and online exposure currently have a rather negative impact on the matter; further research is needed. We have no evidence that our discovery is related to the global phenomenon of fake news campaigns, which can repeatedly challenge issues related to the environment, climate change, or renewable energy sources policies. However, this is a possible hypothesis that should be explored further.

Although strong support for the introduction of renewable energy sources is currently proven, its resilience will most likely be tested in the near future. Policymakers should design mechanisms to sustain it.

6. Conclusions

Thirteen years after joining the EU, citizens from the north-east development region of Romania seem to be connected to at least one of the EU's top priority issues: turning to Renewable Energy Sources and relating it to environmental improvement and economic development.

It is a somewhat surprising result that the vast majority of respondents (about 90%) declare their support for the use of renewable energy sources and consider it a necessity for their country. About 95% of the respondents consider climate change a reality and about 70% see human activity as its' main cause. These results do not contradict the findings of the 2019 Eurobarometer, but they suggest that the north-east region is somewhat more inclined to support renewable energy compared to the national average.

Reducing pollution that impacts public health, as well as sustaining biodiversity, resulting, in the end, in a reduction in climate change, are seen as the main benefits of green energy development. RES-EP is also seen as an opportunity for the economic growth of the region.

RES-EP is supported despite the moderate negative impact perceived on prices and potential shortages in supply. A special, specific concern for the public in the north-east region remains the increase in disparities (discrepancies) amongst regions and the country—an issue that needs to be addressed by the central authorities.

There is a moderate expectation regarding the preoccupations and capabilities of institutions and communities to move towards RES-EP. As a recurrent observation, EU institutions receive above-average scores, in comparison to national and local ones.

As reported in other research papers, demographics play a small role in shaping the general attitudes towards RES-EP. Although statistical analysis supports some particular differences, the general regression model retains only revenue as a significant predictive variable.

Finally, TV and online media exposure have a negative relationship with the main issue of our research: Public Acceptance and Support of Renewable Energy in the North-East Development Region of Romania.

Some of the limitations of our study result primarily from the sample size. Although we did use the quota method to ensure a diverse set of respondents that accurately represent the structure of the target population (in terms of residence, age, and gender), a bigger sample size would have allowed taking into consideration more diverse respondents, thus achieving a more refined representation of the target population. Currently, the nature of the study remains primarily exploratory.

We seek to develop this research further through a new iteration of the survey, using a refined questionnaire, building on the results of the current study and of other studies currently being finalized by the members of the research team. By extending the sample size and improving the sampling procedure, we can observe the resulting attitudes regarding RES-EP following the price hikes on the Romanian energy market in the final quarter of 2021, which have been anticipated by regulatory authorities and specialists in the field. We also seek to quantify how much households would be willing to pay in addition to their current electricity bill in order to support further development of the RES-EP sector using a choice experiment.

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Data Availability Statement: The complete dataset in SPSS format can be provided on request by sending an email to tudor.jijie@eastmarketing.ro.

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References

1. Communication from the Commission, Action Plan for Energy Efficiency: Realising the Potential. Available online: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0545:FIN:EN:PDF> (accessed on 15 June 2021).
2. An Energy Policy for Europe. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A127067> (accessed on 15 June 2021).
3. Zachmann, G. Elements of Europe's energy union. *Bruegel Policy Brief* **2014**, *5*, 846.
4. European Union. *Energy 2020: A Strategy for Competitive, Sustainable and Secure Energy*; Publications Office of the European Union: Luxembourg, 2011.
5. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. Available online: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf (accessed on 18 June 2021).
6. 2050 Long-Term Strategy. Available online: https://ec.europa.eu/clima/policies/strategies/2050_en (accessed on 21 July 2021).
7. Recovery Plan for Europe. Available online: https://ec.europa.eu/info/strategy/recovery-plan-europe_en (accessed on 21 July 2021).
8. EurObserv'ER. *The State of Renewable Energies in Europe*, 2019th ed.; Imprimerie Graphius: Brussels, Belgium, 2019.
9. European Union. *Special Eurobarometer 490. Climate Change*; Report; Publications Office of the European Union: Luxembourg, 2019. Available online: https://ec.europa.eu/clima/sites/clima/files/support/docs/report_2019_en.pdf (accessed on 21 July 2021).
10. Eurostat—Share of Renewable Energy in Gross Final Energy Consumption. Available online: https://ec.europa.eu/eurostat/web/products-datasets/-/t2020_31&lang=en (accessed on 27 July 2021).

11. ANRE. *Raport Privind Rezultatele Monitorizării Pieței de Energie Electrică În Luna Decembrie 2020*; Report; ANRE: Bucharest, Romania, 2021. Available online: <https://www.anre.ro/ro/energie-electrica/rapoarte/rezultate-monitorizare-piata-energie-electrica/20201586509371> (accessed on 27 July 2021).
12. Ministry of Energy. Romania's Energy Strategy 2019–2030 with Perspectives on 2050. Available online: <http://energie.gov.ro/transparenta-decisionala/strategia-energetica-a-romaniei-2019-2030-cu-perspectiva-anului-2050/> (accessed on 27 July 2021).
13. Marinescu, N. Changes in renewable energy policy and their implications: The case of Romanian producers. *Energies* **2020**, *13*, 6493. [[CrossRef](#)]
14. Bord, R.J.; Fisher, A.; O'Connor, R.E. Public perceptions of global warming: United States and international perspectives. *Clim. Res.* **1998**, *11*, 74–84. [[CrossRef](#)]
15. Liebe, U.; Dobers, G.M. Decomposing public support for energy policy: What drives acceptance of and intentions to protest against renewable energy expansion in Germany? *Energy Res. Soc. Sci.* **2019**, *47*, 247–260. [[CrossRef](#)]
16. Lucas, H.; Carbajo, R.; Machiba, T.; Zhukov, E.; Cabeza, L.F. Improving public attitude towards renewable energy. *Energies* **2021**, *14*, 4521. [[CrossRef](#)]
17. Hagen, B.; Pijawka, D. Public perceptions and support of renewable energy in North America in the context of global climate change. *Int. J. Disaster Risk Sci.* **2015**, *6*, 385–398. [[CrossRef](#)]
18. Drews, S.; van den Bergh, J.C.J.M. What explains public support for climate policies? A review of empirical and experimental studies. *Clim. Policy* **2016**, *16*, 855–876. [[CrossRef](#)]
19. Pohjolainen, P.; Kukkonen, I.; Jokinen, P.; Poortinga, W.; Umit, R. *Public Perceptions on Climate Change and Energy in Europe and Russia: Evidence from Round 8 of the European Social Survey*; European Social Survey: London, UK, 2018.
20. Garson, G.D. *Ordinal Regression (Statistical Associates "Blue Book" Series Book 9)*; Associates Publishers: Asheboro, NC, USA, 2012.
21. Schumacher, K.; Krones, F.; McKenna, R.; Schultmann, F. Public acceptance of renewable energies and energy autonomy: A comparative study in the French, German and Swiss Upper Rhine region. *Energy Policy* **2019**, *126*, 315–332. [[CrossRef](#)]