

Public Attitude Towards Ecology of Visitors of Ecological Spaces and The Role of Such Spaces in The Formation of Environmentally Responsible Attitudes

Maya Rusakova¹, Sergey Tkach^{1,*}, and Alina Shaikhieva²

¹Center for Applied Sociology, Saint Petersburg State University, 199034, Saint-Petersburg, Russia

²Sociological Clinic, Saint Petersburg State University, 199034, Saint-Petersburg, Russia

Abstract. The main scope of the study was to identify the public attitudes of visitors of ecology-friendly spaces towards ecology and the role of such public spaces in the formation of these attitudes and environmentally oriented practices. The data collection method used was an offline questionnaire and an online survey, in which 342 people took part. For the analysis, the construction of a least squares regression model was used. The main theoretical model was the theoretical approach of humanistic realism of J.-P. Sartre and the grassroots theory of change as interpreted by Chetkovich C. A., Kunreuther F. The results show that about half of the respondents strive for an environmentally friendly lifestyle, sometimes visit organizations, but rarely support their activities financially. Just over a third have some environmental habits, but do not visit or support organizations financially, and a quarter of respondents are frequent visitors to environmental organizations and support their activities financially. It can also be concluded that respondents visit the eco-center because they try to lead an environmentally friendly lifestyle. The findings allow us to formulate a number of recommendations for city authorities in organizing an environmentally oriented policy that would take into account existing ties in the community.

1 Introduction

Modern ideas about solving environmental problems are based on an understanding of the importance of developing a conscious culture of environmental behavior among city residents. We are talking about developing a responsible approach to citizens' own habits. The active participation of citizens in environmental actions, as well as the implementation of environmental habits, is seen as one of the key elements of building an environmentally sustainable policy [1]. The role of everyday practices in the formation of this kind of culture is presented in the work of Upitis, R. et al. [2] Also worthy of great attention are works describing grassroots practices in studies of the formation of an environmentally friendly culture and social changes in environmental policy [3-5]. However, the question remains about the most effective methods to help create a culture of environmentally responsible behavior. Questionnaires is often used to reveal and quantify the environmental issues [6-9]

To answer this question, we need to articulate the relationship between environmental practices, environmental center space, and environmental consciousness/attitudes. In the framework of the research presented in the article, this connection is demonstrated through appeals to the practices of visitors to the environmental center.

The questionnaire included four blocks of questions: practices of visiting an eco-center, participation in charity and donations, practices of using public space, as well as socio-demographic characteristics. The theoretical model is based on several assumptions that allow us to describe the existing connection between the practices of visitors to the environmental center and the environmental attitudes they develop. First, we need to define an environmental center. An environmental center will be understood as a space (usually a building or several rooms in it) in which various environmentally oriented organizations are located. These could be stores with environmentally friendly products, lecture halls where lectures and seminars are held on the topic of ecology and an economical lifestyle. points for separate waste collection and recycling, etc.

The first assumption of the theoretical model is the relationship between practices and attitudes. In the social sciences, two logics can be distinguished for considering the correlation between these two concepts. The first of them believes that attitudes precede practices. Among the representatives of this direction we can mention, for example, R. Inglehart and his assumption that our everyday practices are based on values and the attitudes formed by them. The values themselves, and with them the attitudes, are primary before practices [10]. Another approach is to think of man as a tabula rasa. Only after performing actions can a person achieve one or another status. The origins of this approach can be found in the

2 Methodology

* Corresponding author: sergey@ngostellit.ru

conceptual models of humanistic existentialism, in particular, in the works of J.-P. Sartre [11]. The philosopher believed that, for example, in order to become a kind person, it is necessary to do good deeds. It is impossible to be kind from birth. Rephrasing this logic into the concepts of values and attitudes, we can believe that the value of kindness and good attitudes stem from the kind practices that a person has engaged in.

The second key element of the theoretical model being built within the framework of the study is the concept of grassroots practices. The concept is taken in the interpretation of Chetkovich, C. A., Kunreuther, F. [12] The concept assumes that social change does not require large controlling structures. Social change can emerge like a patch of grass after rain. The main idea of grassroots practices is that collaborative activist practices unite a community and build a community of values. And this community of values becomes the foundation for social change. In the case of the problem considered here - changes in everyday lifestyle in favor of a more environmentally conscious one.

The sample population included 342 respondents, of which 285 were visitors to the ecocenter, 34 were subscribers to the ecocenter's social networks, and 23 were first-time visitors to the ecocenter. The 95% confidence interval was 5.3%.

Online and offline survey was used for data collection. 308 respondents took part in the survey offline and 34 people took part in the film online.

The main method of data analysis is linear least squares regression. The dependent variable is a four-component ranking variable of environmental attitudes/behaviour, where 1 is "I do not lead an environmentally friendly lifestyle, I do not visit environmental organizations, I have no motivation and interest in the topic of ecology," and 4 is "I adhere to an environmentally friendly lifestyle, a frequent visitor." environmental organizations, often support the activities of environmental organizations financially and/or as a volunteer, keeping abreast of all environmental trends." In the tables it is called "eco-behaviour".

The independent variables are the practices that visitors to the center engage in: financial support via donations to the center; waste sorting at the sorting point in the center; handing over clothes to recycling points; visiting a second-hand store; visit to eco-foodshop; visiting events organized at the center (lectures, seminars, etc.); visiting excursions conducted by the center; talking with community (other visitors to the center), talking with workers of the center. All these variables were binary, where 1 meant that the respondent was engaged in such activity in the center, and 0 - that he was not engaged.

Also in the regression model, level of education, age, gender, and wage level were taken into account as control independent variables.

Education level was a rank scale where 1 was high school education or less and 6 was PhD. Wage level was also a ranking scale, where 1 is "The income level is extremely low, sometimes there is not enough money even for food," and 5 is "At any moment there is an opportunity to buy a new apartment or car."

3 Results

Descriptive statistics for the results are presented in Table 1. Speaking about visitors to the centers, we can notice that their average age is 31 years, their level of education is high ("4" on the scale is incomplete higher education), and their income level is, on the contrary, low . 80% of respondents are women.

As we can see, the most popular forms of activity among visitors to the center are waste sorting - 94% of respondents indicated that they are engaged in this. The least popular were excursions - they were chosen by only 1% of visitors.

Table 1. Descriptive statistics for variables.

variable	mean	std	min	median	max
eco-behavior	2,70	1,02	0,00	3,00	5,00
financial support	0,11	0,32	0,00	0,00	1,00
waste sorting	0,94	0,23	0,00	1,00	1,00
recycling clothes	0,40	0,49	0,00	0,00	1,00
second-hand store	0,15	0,36	0,00	0,00	1,00
eco-foodshop	0,12	0,33	0,00	0,00	1,00
events	0,07	0,26	0,00	0,00	1,00
excursions	0,01	0,09	0,00	0,00	1,00
talking with community	0,08	0,27	0,00	0,00	1,00
talking with workers	0,43	0,50	0,00	0,00	1,00
female gender	0,80	0,40	0,00	1,00	1,00
age	31,08	14,16	0,00	31,00	82,00
wage level	2,85	1,09	0,00	3,00	5,00

education level	4,14	1,49	0,00	5,00	5,00
-----------------	------	------	------	------	------

education level	0,1916	0,041	4,676	0,000
-----------------	--------	-------	-------	-------

4 Analysis

Based on the results of the analysis, a least squares regression model was built. Among the presented variables, we can notice that all the statistically significant variables are positively related to the dependent variable. Among the independent variables that turned out to be statistically significant are financial support via donations to the center; waste sorting at the sorting point in the center; visiting events organized at the center (lectures, seminars, etc.); talking with community (other visitors to the center). Speaking about control variables, we can notice that older, educated, financially prosperous women adhere to more environmentally friendly attitudes/behaviors.

Table 2. Least-square re, R-squared — 0.931, F-statistic — 354,7.

variable	coef	std err	t	p-value
financial support	0,5651	0,132	4,278	0,000
waste sorting	0,3319	0,117	2,835	0,005
recycling clothes	-0,0327	0,091	-0,358	0,721
second-hand store	0,1532	0,124	1,234	0,218
eco-foodshop	0,1890	0,131	1,444	0,150
events	0,4087	0,170	2,404	0,017
excursions	-0,1954	0,489	-0,399	0,690
talking with community	0,3556	0,167	2,131	0,034
talking with workers	0,1318	0,092	1,434	0,152
female gender	0,3212	0,115	2,782	0,006
age	0,0143	0,004	3,871	0,000
wage level	0,2334	0,049	4,759	0,000

Financial support, as an identified statistically significant factor in supporting environmental attitudes, was further analyzed. Spearman's correlation coefficient was used for analysis. A significant relationship was found between occupation and willingness to consider financial support for an eco-center. People who noted “temporarily not working”, “not working or studying” and “studying” (they made up 29% of the total number of respondents) are less inclined to consider the possibility of becoming a donor to the eco-center ($p < 0.05$). Having a job or combining work with study helps to increase the level of readiness to take part in supporting the eco-center financially. Further, a strong connection was found between the readiness to support and financial situation, which indicates a relationship: the better the financial situation, the higher the willingness to start supporting the eco-center financially ($p < 0.05$). People whose income per family member exceeds 150 US Dollars per month are more willing to consider the possibility of financial support for the eco-center.

The results obtained are consistent with earlier studies on this topic. First of all, we are talking about research on the relationship between control variables and environmental attitudes. In particular, in the work of Eisler, A. et al. it has been shown that women are more prone to environmentally friendly behavior and attitudes [13]. This is due to the fact that, as the authors show, ecology is perceived by mucins as a stereotypically feminine topic. Also, the works of Magee, L. et al., Balderjahn, I. show that income and education are also positively related to views about the environment [14, 16]. More educated city dwellers have a better attitude towards the environment. The interpretation of the connection between income and attitude towards the environment is not clear. The regression model shows that more financially prosperous citizens have a better attitude towards the environment. However, the indicators of financial well-being of all visitors to the center are generally lower than the indicators of other citizens. Thus, relative to other city dwellers, poorer city dwellers are more likely to adopt an economical lifestyle. But within the group of those who visit the eco-center, the more financially prosperous city residents are more supportive of the environmental agenda. Athanasiou, T. comes to similar conclusions in his study [16].

Let us now consider the variables selected for analysis. The positive relationship of all statistically significant variables with the dependent variable allows us to confirm the hypothesis that individual environmental practices in the center are capable of organizing grassroots social changes. Those practices whose influence turned out to be statistically insignificant require additional explanation. The variable of communication with center staff can be explained through common sense. The research team's observations during the survey show that conversations with employees are instrumental in nature: visitors ask for some things they need at the moment. For example,

visitors ask whether this or that waste can be sorted. Clothes recycling can also be explained using visitor observation data. The difference with waste sorting here is the time spent by the visitor. The delivery of clothes is carried out very quickly - the visitor does not linger in the center. Garbage sorting assumes that the visitor will stop near each bin with a certain type of waste, find the required type among his garbage and throw it away. At this time, the visitor, for example, can start a conversation with some other visitor. To explain the insignificance of visiting stores, it is necessary to turn to the works of other authors. In particular, Brooks, A. shows that visitors to eco-friendly stores may not always adhere to environmentally friendly attitudes [17]. They may believe that green stores provide them with a range of "healthier" products that are of better quality or appeal. The same conclusions may be true for second-hand stores. Some visitors may enjoy the items on display regardless of how visiting a thrift store relates to an exotic lifestyle.

5 Conclusion

Some limitations of the study should be highlighted and pointed out. First of all, the research team did not have data on the general population of visitors to the center. At the beginning of the study, when calculating the sample population, the research team relied on knowledge about the online audience, but it was impossible to establish an exact or approximate relationship between data on online audience activity and offline practices. Accordingly, the research team could only make probabilistic assumptions about the population. Another limitation concerns the method of information collection. The questionnaire survey method used does not allow us to touch upon deeper layers of the audience's understanding of environmental practices and attitudes. The meaning that the audience attaches to a particular action that is performed in the center can be interpreted after conducting in-depth or narrative interviews. The theoretical model used also has a number of limitations that should be noted. The theoretical model itself excludes macro-sociological factors from the analysis, for example, the existing regulatory framework, ongoing infrastructure projects, etc. Another important limitation is the assumption that practices come first before attitudes. In some situations, the reverse logical scheme may also be valid, where already existing environmental attitudes influence the practices of visitors and their behavior.

Among the directions for further research, in addition to the already mentioned in-depth interviews, one can also note studies of the interaction of public structures formed by grassroots practices and large infrastructure projects, as well as ongoing government policies. Also worthy of attention are studies of the value orientations of visitors to environmental centers and how these orientations relate to specific environmental attitudes.

The findings suggest a significant communicative component in the formation of grassroots structures in relation to communication between visitors. However, this effect is not observed for communication with center

employees. A closer look at the visitor-employee communication frame may shed light on this issue.

The applied and theoretical recommendations that arise from the results and conclusions of this study should also be highlighted. It is possible to note individual stakeholders for whom such recommendations could be significant:

Government. Develop mechanisms of interaction and support for self-organizing civil society communities that have formed sustainable environmental values. Such support mechanisms may consist of organizing platforms for communication between government representatives and grassroots communities.

Non-governmental organizations. Collaboration with grassroots communities can significantly strengthen the sustainability of organizations and make them more value-oriented towards the current environmental agenda.

Business. Data from our study did not show a significant relationship between business interaction practices (shopping in two stores located in the center) and environmental orientations. Hence, it can be recommended to increase the emphasis on the environmental agenda in your own marketing strategy.

The work was carried out with the support of St. Petersburg State University, project code 121062300141-5

References

1. W. Zhang, G. Liu, F. Gonella, L. Xu, Z. Yang, J. of Clean. Prod. **372**, 133735 (2022).
2. R. Uptitis, P.C. Abrami, A. Patteson. J. of the Canad. Ass. for Curric. Stud. **8(1)**, 68-98 (2010)
3. R.S. Ferguson, S.T. Lovell. Ecol. and Soc. **20(4)** (2015)
4. E. Drimili, R. Herrero-Martin, J. Suardiaz-Muro, E. Zervas Waste Manag. & Res. **38(6)**, 614-625 (2020)
5. Z. Gareiou, E. Drimili, E. Zervas *Low carbon energy technologies in sustainable energy systems*, 309-327(Academic Press, Cambridge, Massachusetts, 2021)
6. D. Papoulis, D. Kaika, C. Bampatsou, E. Zervas Climate. **3(3)**, 715-726. (2015)
7. E. Drimili, Z. Gareiou, E. Zervas. Env., Develop. and Sustain., **22(7)**, 6053-6076 (2020)
8. C. Herzog, D. Wiesner, D. Maddox, *The Routledge Handbook of Urban Ecology*, 76-87 (Routledge, London, 2020)
9. A. Kamilla, A.G. Akmalovna, Acad. Sc. Rep. **4(6)**, 624-628 (2023)
10. R. Inglehart, W. E. Baker, Am. soc. rev. **65(1)**, 19-51 (2000)
11. J.-P. Sartre, P. Mairret. *Existentialism and humanism* (Methuen, London, 1965)
12. C.A. Chetkovich, F. Kunreuther, *From the ground up: Grassroots organizations making social change* (Cornell University Press, New York, 2006)

13. A.D. Eisler, H. Eisler, M. Yoshida, Perception of human ecology: cross-cultural and gender comparisons. *J. of Env. Psych.* **23(1)**, 89-101 (2003)
14. L. Magee, A. Scerri, P. James, *Appl. Res. in Qual. of Life*, **7**, 239-261 (2012)
15. I. Balderjahn, *J. of bus. Res.* **17(1)**, 51-56 (1988)
16. T. Athanasiou, *Divided planet: The ecology of rich and poor* (University of Georgia Press, Athens, 1998)
17. A. Brooks, *Clothing poverty: The hidden world of fast fashion and second-hand clothes* (Bloomsbury Publishing, London, 2019).