THE PSYCHOLOGICAL DETERMINANTS OF PRO-ENVIRONMENTAL BEHAVIOR OF RUSSIAN STUDENTS

AUTHORSHIP

Elena A. Privalova
Department of Psychology, State University of Humanities and Social Studies, Kolomna, Russia.

ORCID: https://orcid.org/0000-0002-7170-5708
E-mail: elenaprivalova71@gmail.com

Regina V. Ershova
Department of Psychology, State University of Humanities and Social Studies, Kolomna, Russia.

ORCID: https://orcid.org/0000-0002-5054-1177
E-mail: ershovareg@mail.ru

Maria A. Erofeeva
Department of Pedagogy, Moscow University of the Ministry of Internal Affairs of Russia named after V.Ya. Kikot, Moscow, Russia. Department of Psychological and Socio-Pedagogical Education, State University of Humanities and Social Studies, Kolomna, Russia.

ORCID: https://orcid.org/0000-0001-7752-0467
E-mail: erofeeva.ma72@yandex.ru

Elena N. Belous
Department of Pedagogy, Moscow University of the Ministry of Internal Affairs of Russia named after V.Ya. Kikot, Moscow, Russia. Department of Psychological and Socio-Pedagogical Education, State University of Humanities and Social Studies, Kolomna, Russia.

ORCID: https://orcid.org/0000-0002-7555-0024
E-mail: belousen@yandex.ru

Olga V. Salomatina
Department of Psychology, State University of Humanities and Social Studies, Kolomna, Russia.

ORCID: https://orcid.org/0000-0003-2371-4834
E-mail: contato@editorialaa.com

INTRODUCTION

At present, specialists in various fields of knowledge are trying to solve environmental problems. Psychological science, possessing a methodology of analysis and a bank of empirical data in the field of human interaction with the environment, can also contribute to solving environmental problems (BAYANOVA et al., 2019B; PIRALOVA et al., 2020). The attention of researchers is increasingly turning to human behavior in relation to the environment.

Ecological psychology has been in our country for more than one decade. However, it cannot be said that known data fully cover the “white spots” in this area. Russian researchers are currently paying relatively low attention to the problem of pro-environmental behavior; thus, it becomes crucial to study the determinants of pro-environmental behavior of Russian students.

The definition of “proenvironmental behavior” is found in A. Kollmuss and J. Agyeman (KOLLMUSS & AGYEMAN, 2002). By pro-environmental behavior, they mean behavior deliberately aimed at reducing the negative consequences of human actions in relation to the natural (living) and the inanimate world (KOLLMUSS & AGYEMAN, 2002). We understand pro-environmental behavior as a set of actions aimed at minimization of the negative impact of an individual or a group of people on the environment and energy conservation activities, and general environmental friendliness.

The following causes are mentioned among the determinants of pro-environmental behavior more often than others: values (SHMELEVA, 2009; DE GROOT & STEG, 2010; EFIMOVA et al., 2018; GIMALIEV et al., 2020; KHAIRULLINA et al., 2020; ENGQVIST JONSSON & NILSSON, 2014; SALAKHOVA et al., 2019), self-identity (VAN DER WERFF et al., 2013; Wu & Yang, 2018; Tezer et al., 2019), motivation (LEYGUE ET AL., 2017; GRAVES ET AL., 2019), time perspective (MILFONT & GOUEI, 2006; CARMI, 2013; MILFONT et al., 2012, MUKAN et al., 2021).

The Norm Activation Model (Schwartz, 1977) has become instrumental for our study. Our questionnaire, which aims to identify the peculiarities of energy-saving behavior in young males and females and their environmental level, uses this methodology. Values are an important variable in the value-belief-norm theory (STERN et al., 1999) and The Value-Identity-Personal norms (RUEPERT ET AL., 2016). Russian researchers list values among the most important environmental awareness development factors (MEDVEDEV & ALDASHEVA, 2001).

The determinants of pro-environmental behavior of Russian students are understudied. Therefore, it is necessary to identify the content of psychological determination of Russian students’ pro-environmental behavior and expand our knowledge of psychological determinants of pro-environmental behavior with regard to energy saving (CHERDYMOVA et al., 2018; BAYANOVA et al., 2019A; LATYSHEVA et al., 2018). The study aims to identify the psychological determinants of pro-environmental behavior in the field of energy conservation of Russian students. We assumed that pro-environmental behavior in the field of energy-saving...
depends on the personality characteristics of an individual and the values and the components of the time perspective.

T.L. Milfont and V.V. Gouveia have shown that time perspective and values are at the heart of environmental relations. A past-positive and a present fatalistic were associated (negative) with environmental preservation. At the same time, the present-hedonistic was associated with environmental utilization. Time perspective is probably a much more important construct for solving environmental problems than values. Later T.L. Milfont, J. Wilson, and P. Diniz concluded that time perspective has a significant impact on environmental attitudes and environmental behavior. The time perspective component “future” is more closely related to environmental engagement (MILFONT et al., 2012; LATIP et al., 2020).

MATERIALS AND METHODS
The study was conducted using the following research methods:

1. Designer’s questionnaire aimed at determining the features of energy-saving behavior in young men and women the level of its “proenvironmentalism”.

The questionnaire can be divided into two parts: the first part gives the respondent’s profile (gender, age, study year, faculty), during the second - the peculiarities of their energy-saving behavior. The questions in the second part contain statements concerning energy-saving behavior. The respondent has to state to which degree do they agree or disagree with each of the 11 statements using the 7-point scale (from 1 - “strongly disagree” to 7 - “strongly agree”). The questionnaire has four scales: “Problem awareness” (knowledge of the adverse effects of energy use), “responsibility attribution” (attribution of responsibility for the harmful effects of energy consumption), “personal norm” (reflects the degree of moral responsibility to perform a specific action or to abstain from it).

2. For the study of personality traits, we used the Big Five Questionnaire-2-R (as adapted by E. Osin).

3. For the study of an individual’s relations to the time continuum, we used Zimbardo Time Perspective Inventory (ZTPI) (as adapted by A. SYRTSOVA, E. SOKOLOVA, AND O. MITINA).

4. We used Portrait ValuesQuestionnaire-Revised-2R S.H. Schwartz to measure the values.

The sample amounted to 197 students (59 males and 138 females) (M = 18,4, SD = 1,3). The majority of the subjects were university students who volunteered to participate in the study as part of their course of psychology. The students got additional points as a reward. The questionnaire was computer-based and conducted in the university lab.

RESULTS AND DISCUSSION
Based on the results obtained, we studied the regressional dependence between personal traits, values, time perspective, and pro-environmental behavior in the field of energy-saving. To identify the psychological determinants of proenvironmental behavior in the field of energy saving we relied on multiple regression analysis (R = 0.557; R2 = 0.311; F = 27,291; p <0.001) (Table 1). This statistical method allowed to study the combined effect of personal traits, values, and time perspective on students’ environmental behavior in the field of energy-saving.

Table 1. Multiple regression analysis results

| Determinants        | B      | Std error | β     | t     | p     |
|---------------------|--------|-----------|-------|-------|-------|
| (Constant)          | 22.200 | 4.584     |       | 4.843 | .000  |
| Universalism: nature| 2.086  | .237      | .487  | 8.819 | .000  |
| Stability of emotions| -.201  | .094      | -.090 | -2.131| .034  |
| Security: societal  | .628   | .184      | .167  | 3.423 | .001  |
| Positive past       | -2.759 | .838      | -.142 | -3.292| .001  |
| Empathy             | .322   | .124      | .121  | 2.597 | .010  |
| Social desirability: subject | -.257 | .110   | -.101 | -2.344| .020  |
| Benevolence: caring | -.561  | .273      | -.111 | -2.053| .041  |

Source: Search data.
The pro-environmental behavior of Russian students in the field of energy-saving is directly influenced by the following variables: “universalism: nature” ($\beta = 0.487$, $p = 0.000$), “security: societal” ($\beta = 0.67$, $p = 0.001$), “empathy” ($\beta = 0.121$, $p = 0.010$) and inversely related by the following variables: “positive past” ($\beta = -0.142$, $p = 0.001$), “benevolence: caring” ($\beta = -0.111$, $p = 0.041$), “social desirability: subject” ($\beta = -0.101$, $p = 0.020$) and “stability of emotions” ($\beta = -0.090$, $p = 0.034$).

Thus, pro-environmental behavior is significantly affected by such values as “universalism: nature”, “security: societal,” and “empathy”. We have also identified the inverse effect of “positive past” on pro-environmental behavior. The negative perception of the past makes the person change their present and future and focus more on achieving the set goals. These results are consistent with the findings of other researchers, who also claim that there is no significant impact of “past” temporal orientation on pro-environmental behavior and attitudes (case example of water-saving) (VALIZADEH et al., 2018; GALCHENKO et al., 2020).

Thus, in order to develop pro-environmental behavior in the field of energy-saving, it is important to teach students to be conscious users of the planet’s resources. They also need to cherish nature, be aware of others’ needs, and strive to maintain social stability. “Proenvironmental” individual is emotional, compassionate, and capable of empathy. This is consistent with the results obtained by J. Berenguer (BERENGUER, 2007).

**CONCLUSION**

Our study focused on the study of psychological determinants of the pro-environmental behavior of Russian students. The retrieved data shows the importance of values, personality traits, and the time perspective components for pro-environmental behavior analysis. We came to the conclusion that the psychological determinants of pro-environmental behavior of Russian students in the field of energy-saving are values “universalism: nature,” “security: societal,” “benevolence: caring” (reverse impact). Essential personality traits here are “empathy,” “social desirability: subject” (reverse impact), “stability of emotions” (reverse impact), the components of the time perspective “positive past” (reverse impact).

The results obtained provide a basis for the development of psychological programs aimed at pro-environmental behavior formation in the field of energy-saving. Such programs can later be used in educational institutions of different levels as well as in public and private companies. It is worth emphasizing that later studies of determinants of pro-environmental behavior should be conducted in populations of varied professional and age groups or within the framework of a longitudinal study, in which we can note the dynamics of pro-environmental behavior formation.

**REFERENCES**

BAYANOVA, A.R.; SABAeva, E.K.; SAKHiPOVA, Z.M.; ZATSEPINA, M.B.; TARARINA, L.I.; VOTINOV, A.A.; & ILKEVICH, K.B. Educational Environment Ecology as Factor of University Teacher Health Saving in Context of Education and Science Reforms in Modern Russia. *Ekoloji*, 2019a, 28(107), 4937-4941.

BAYANOVA, A.R.; VODENKO, K.V.; SIZOVA, ZH.M.; CHISTYAKOV, A.A.; PROKOPIEV, A.I.; & VASBIEVA, D.G. A philosophical view of organizational culture in contemporary universities. *European Journal of Science and Theology*, 2019b, 15(3), 121-131.

BERENGUER, J. The effect of empathy in pro-environmental attitudes and behaviors. *Environment and behavior*, 2007, 39(2), 269-283.

CARMi, N. Caring about tomorrow: Future orientation, environmental attitudes and behaviors. *Environmental Education Research*, 2013, 19(4), 430-444.

CHERDYMOVA, E.I.; VOROBYEVA, K.I.; RPMANCHenko, L.N.; ROMASHKOVA, O.V.; MASHKIN, N.A.; GROGORIEV, S.M.; GROGORIEV, O.V.; BAYANOVA, A.R. Photo exhibition influence on student environmental consciousness formation. *Ekoloji*, 2018, 27(106), 1271-1278.

DE GROOT, J.I. & STEG, L. Relationships between value orientations, self-determined motivational types and pro-environmental behavioral intentions. *Journal of Environmental Psychology*, 2010, 30(4), 368-378.
EFIMOVA, O.I.; SALAKHOVA, V.B.; OSHCHEPKOV, A.A.; KHUDYAKOVE, T.L.; DEBERDEEVA, N.A. Antisuicidal Potential of the Person: Theory and Empirics Research. Modern Journal of Language Teaching Methods, 2018, 8(5), 510-517.

ENGQVIST JONSSON, A.K. & NILSSON, A. Exploring the relationship between values and pro-environmental behaviour: the influence of locus of control. Environmental Values, 2014, 23(3), 297-314.

GALCHENKO, N.A., SHATSKAYA, I.I., MAKAROVA, E.V., KULESH, E.V., NIZAMUTDINOVA, S.M., YUDINA, A.M., & SKUTELNIK, O.A. (Student hood spiritual needs in self-isolation period: Features and ways to meet them. EurAsian Journal of BioSciences, 2020, 14(1), 2229-2234.

GIMALIEV, V.G., PROKOPYEV, A.I., VERSHININ, V.P., IVANOVA, M.E., ERKIBAEVA, G.G., AYTUGANOVA, J.I., & ALEXANDROVA N.S. Public Relations in Organizations in Student View: Accumulator of Management Tools or Formation of Partnership and Friendly Relations. Journal of Environmental Treatment Techniques, 2020, 8(4), 1326-1330.

GRAVES, L.M., SARKIS, J., & GOLD, N. Employee proenvironmental behavior in Russia: The roles of top management commitment, managerial leadership, and employee motives. Resources, Conservation and Recycling, 2019, 140, 54-64.

KHAIRULLINA, E.R.; SHUBOVICH, M.M.; BOGDANOVA, V.I.; SLEPNEVA, E.V.; MASHKIN, N.A.; & RODYUKOVA, T.N. Modern student youth civic identity: Political activity or social responsibility? Opcion, 36, 2020. (Special Edition 27), 1703-1717.

KOLLMUSS, A. & AGYEMAN, J. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. Environmental education research, 2002, 8(3), 239-260.

LATIP, M. S. A.; NEWAZ, F. T. & RAMASAMY, R. Students' Perception of Lecturers' Competency and the Effect on Institution Loyalty: The Mediating Role of Students' Satisfaction. Asian Journal of University Education, 2020, 16(2), 183-195.

LATYSHEVA, V.V.; BULGAKOVA, V.O.; SIDORENKO, G.G.; KORENKO, J.M.; KHAIRULLINA, E.R.; SHAIDULLINA, A.R. & BAYANOVA, A.R. Subjective Environmental Attitude Features to Nature of Specially Protected Areas Employees. Ekoloji, 2018, 27(106), 1801-1808.

LEYGUE, C.; FERGUSON, E. & SPENCE, A. Saving energy in the workplace: why, and for whom? Journal of Environmental Psychology, 2017, 53, 50-62.

MEDVEDEV, V.I. & ALDASHEVA, A.A. Environmental consciousness. Moscow: Logos. 2001.

MILFONT, T.L. & GOUVEIA, V.V. Time perspective and values: An exploratory study of their relations to environmental attitudes. Journal of environmental psychology, 2006, 26(1), 72-82.

MILFONT, T.L.; WILSON, J.; DINIZ, P. Time perspective and environmental engagement: A meta-analysis. International Journal of Psychology, 2012, 47(5), 325-334.

MUKAN, S. M. W.; KULAI, D. & NOR, R. H. C. M. Nursing Students’ Perceived Effective Clinical Teachers’ Behaviors. Asian Journal of University Education, 2021, 16(4), 200-210.

OSIN, E.N.; RASSKAZOVA, E.I. & NEYASKINA, Y.Y. Operationalization of the five-factor model of personality traits in the Russian sample. Psychological Diagnostics, 2015, 3, 80-104.

PIRALOVA, O.F.; GERASIMENKO, S.A.; KUZNETSOV, V.V.; POPOVA, O.V.; SUBBOTIN, G.V.; KOLOMYTS, O.G. & MASHKIN, N.A. Gaming Industry Trends in new Generation Specialist Training in University Environment. Journal of Environmental Treatment Techniques, 2020, 8(3), 1132-1135.

RUEPERT, A.; KEIZER, K.; STEG, L.; MARICCHILO, F.; CARRUS, G.; DUMITRU, A.; GARCÍA MIRA, R.; STANCU, A.; MOZA, D. Environmental considerations in the organizational context: A pathway to pro-environmental behaviour at work. Energy Research & Social Science, 2016, 17, 59-70.

SALAKHOVA, V.B.; SOKOLOVSKAYA, I.E.; ULYANOVA, I.V.; KARINA, O.V.; TEREKHova, A.I. Deviant behavior formation factors among students: aggressive behavior and internet risks. Práxis Educacional, 2019, 15(14), 683-694.
SCHWARTZ, S.H. Normative influences on altruism. Advances in experimental social psychology, 1977, 10(1), 221-279.

SHMELEVA, I.A. Values as a problem of the psychology of environmental consciousness. Vestnik Leningrad State University A.S. Pushkin. Series: Psychology, 2009, 1, 155-167.

STERN, P.C.; DIETZ, T.; ABEL, T.; GUAGNANO, G.A. & KALOF, L. A value-belief-norm theory of support for social movements: The case of environmentalism. Human ecology review, 1999, 1, 81-97.

SYRTSOVA, A.; SOKOLOVA, E.T. & MITINA, O.V. Adaptation of the questionnaire of the temporary perspective of the person F. Zimbardo. Psikhologicheskii zhurnal, 2008, 29(3), 101-109.

TEZER, M.; YILDIZ, E.P.; MASALIMOVA, A.R.; FATKHUTDINOVA, A.M.; ZHELTUKHINA, M.R. & KHAIRULLINA, E.R. Trends of Augmented Reality Applications and Research throughout the World: Meta-Analysis of Theses, Articles and Papers between 2001-2019 Years. International Journal of Emerging Technologies in Learning (iJET), 2019, 14(22), 154-174.

VALIZADEH, N.; BIJANI, M.; ABBASI, E. & GANGULY, S. The role of time perspective in predicting Iranian farmers’ participatory-based water conservation attitude and behavior: The role of time perspective in water conservation behavior. Journal of Human Behavior in the Social Environment, 2018, 28(8), 992-1010.

VAN DER WERFF, E.; STEG, L. & KEIZER, K. The value of environmental self-identity: The relationship between biopsychic values, environmental self-identity and environmental preferences, intentions and behaviour. Journal of Environmental Psychology, 2013, 34, 55-63.

WU, B., & YANG, Z. The impact of moral identity on consumers’ green consumption tendency: The role of perceived responsibility for environmental damage. Journal of Environmental Psychology, 2018, 59, 74-84.
The psychological determinants of pro-environmental behavior of Russian students

Os determinantes psicológicos do comportamento pró-ambiental dos estudantes russos

Los determinantes psicológicos del comportamiento proambiental de los estudiantes rusos

**Abstract**

The present article aims to investigate the results of the study, which was conducted to identify the psychological determinants of pro-environmental behavior of Russian students in the field of energy-saving. The sample amounted to 197 university students (59 males and 138 females). Values, personality traits, and time perspective components were viewed as the critical determinants of pro-environmental behavior. The results show that pro-environmental behavior is directly affected by such variables as "universalism: nature," "security: societal," "empathy," "stability of emotions," "positive past," "social desirability: subject," and "benevolence: caring" have an inverse effect on pro-environmental behavior. The article also shows the research perspectives for the study of pro-environmental behavior.

**Keywords:** Pro-environmental behavior. Energy-saving. Values. Personality traits. Time perspective.

**Resumen**

El presente artículo tiene como objetivo investigar los resultados del estudio, que se realizó para identificar los determinantes psicológicos del comportamiento proambiental de los estudiantes rusos en el campo del ahorro de energía. La muestra fue de 197 estudiantes universitarios (59 hombres y 138 mujeres). Los valores, los rasgos de personalidad y los componentes de la perspectiva temporal se consideraron como los determinantes críticos del comportamiento proambiental. Los resultados muestran que el comportamiento proambiental se ve afectado directamente por variables como "universalismo: naturaleza", "seguridad: social", "empatía", "estabilidad de las emociones", "pasado positivo", "deseabilidad social: sujeto" y "Benevolencia: cuidar" tiene un efecto inverso sobre el comportamiento proambiental. El artículo también muestra las perspectivas de investigación para el estudio del comportamiento proambiental.

**Palabras clave:** Comportamiento proambiental. Ahorro de energía. Valores. Rasgos de personalidad. Perspectiva temporal.