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Research Article

# Should I be bothered or not? Development of the Environmental Attitudes Scale (EAS)

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ABSTRACT

The aim of this paper was to develop a reliable scale evaluating values, beliefs, and attitudes towards the environment, and to test its basic psychometric properties relative to its employment in Serbia. The final sample included 1020 participants (46.9% male and 53.1% female), aged from 18 to 86 (*M* = 39.29, *SD* = 15.77). All the participants completed the demographic questionnaire (age, sex, region, education, work, and economic status), and the EAS scale. This final scale included 34 items grouped into seven dimensions explaining 51.84% of the common variance: Love of nature 18.72%, Population growth policies 10.24%, Pro-environmental behaviours 8.94%, Preservation measures 4.28%, Environmental concern 3.87%, Instrumentalism 3.12%, and Environmental activism with 2.27% of the variance explained. EAS showed internal consistency ranging from .74 to .82 for the factor scales, and test-retest $r_{tt}$ = .80. Results confirmed three second-order factors (84.17% of variance explained): Pro-environmental factor (explaining 46.11% of the variance), contained the Love of nature, Environment concern, Pro-environmental behaviour, Environmental activism, and Preservation measures factors, the second contained only Population growth policies factor, explaining 25.19% of the variance, while the third contained the Instrumentalism factor, explaining 12.87% of the variance.

*Keywords:* environmental attitudes, environmental behaviour, psychometric properties

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## Introduction

The environment is a dynamic system of natural and human-made domains being in a certain balance (Marković, 2005), to which individuals are connected by their basic needs. Human interactions with the physical environment components, such as weather and climatic conditions, exert a permanent effect on the human species, and the elements of the built environment, like living spaces and workspaces, neighbourhoods, districts, cities, shape our living in addition. However, despite changing the environment, humans remain its integral part, and consequently, by changing the environment, humans permanently change themselves at the same time.

It is evident that psychologists cannot resolve the issue of harmful environmental changes, but they can certainly provide reliable data on understanding and changing human behaviour, which considerably contributes to these negative effects. Aligning human needs, goals, and ways of satisfying these needs with environmental needs (cf. environmental sustainability), is thus becoming the subject matter of psychological research. As human behaviour is the result of their knowledge, beliefs, attitudes, values, motives and needs, the investigation of the said psychological variables in the process of changing human destructive behaviour towards nature is becoming an increasingly topical subject (Hinić, 2019). Stern suggests that the four groups of variables influence environmental behaviour: attitudinal factors (norms, beliefs, and values), contextual forces, personal capacities, and personal habits and routines (Stern, 2000).

### Environmental attitudes

Environmental attitudes (EA) are typically defined as "the collection of beliefs, affect, and behavioural intentions a person holds regarding environmentally related activities or issues" (Schultz et al., 2004, p. 31). EA can be also defined "as a hierarchical attitude system that connects and organizes more specific attitudes about a range of environmental topics" (Cruz & Manata, 2020: 2). EAs are a construct that psychologists predominantly investigate in the field of Environmental Psychology, and there is a large number of diverse EA measures (Cruz & Manata, 2020; Dunlap & Jones, 2003), which may be indicative of the

popularity of the concept, but also of the existence of certain problems within this area of psychology. First, there is difficulty in defining the behavioural indices and the attitude object itself, which are typically present in investigating latent psychological constructs, such as pro-environmental attitudes (Kaiser et al., 2018). One of the biggest methodological issues is the employment of self-reports with possible interference of self-presentation tendencies and social-desirability bias. Despite the data indicating that a great portion of the world population expresses pro-environmental attitudes (a high social desirability), their participation in the activities that implement such ideas rarely illustrates the reported intensity of pro-environmental attitudes and beliefs. This is known as "environmental values-behaviour gap" (Kennedy et al., 2009) or the "environmental concern-behaviour gap" (Rhead et al., 2015). There is a consensus that attitudes bear some positive relationship to environmental behaviour; however, different aspects of attitudes, and behaviour, influence the magnitude of such a relationship (Wallace et al., 2005).

Three different components of EAs are generally distinguished: individual's beliefs, thoughts, and knowledge about the environment; emotions and feelings about the environment, and individual's behavioural intentions towards the environment (Gifford 2014). Similarly, one of the constructs that has frequently been equated with environmental attitudes in this context, is the notion of environmental concern. It is also usually comprised of three components (Franzen & Vogl, 2013): an individual's insight that humans endanger the natural environment (cognitive), an individual's willingness to protect nature (conative), and emotional reaction to environmental problems, pollution, degradation, etc (affective). For this reason, we were governed by the classical idea of the three components when constructing the EAs items.

Pro-environmental behaviour results from the interactions between an individual's attitudes towards the environment, and other variables such as demographic variables, childhood experience, knowledge and education, personality, sense of control, values, and worldviews, etc. (Gifford & Nillson, 2014). In the light of the stated, a growing number of psychologists are accepting the idea behind the Theory of planned behaviour when interpreting and predicting different forms of pro-environmental behaviours. According to this theory (Ajzen, 1991), attitudes are not an immediate antecedent of the behaviour

in question, but rather an array of components, from subjective and social norms, to perceived control over intended behaviour. A meta-analysis (Wallace et al., 2005), showed that the attitude–behaviour correlation was lower when people experienced a higher level of social pressure and greater difficulty to perform specific behaviour. Similarly, in another study (De Groot & Steg 2007), pro-environmental intentions were in strong positive correlation with pro-environmental attitudes, subjective norms, and perceived control over environmental behaviours. Consequently, we attempted to include as many items pertaining to social and individual norms and values, and concrete examples of intentions towards pro-environmental behaviour, in line with the idea that environmental beliefs, intentions, and behaviours are part of a single EA system (Dunlap & Jones, 2002).

The aim of this paper was to develop a reliable scale evaluating values, beliefs, and attitudes towards the environment, and to test its basic psychometric properties relative to its employment in Serbia. In the first part of the study, basic psychometric properties were tested, and a preliminary factorial structure determined, while in the second part the final structure of the instrument was confirmed on another independent sample via confirmatory factor analysis.

## Method

### Procedure and sample

The study was conducted during 2018 in the Serbian municipalities of Kragujevac (24%), Niš (26%), Novi Sad (30%) and Novi Pazar (20% of the participants). Out of total 1310 participants, the final sample included only the participants who fully completed the questionnaire ($n$ = 1020, 46.9% male and 53.1% female), aged from 18 to 86 ($M$ = 39.29 ± 15.77). The sample was voluntary response sample, and anonymity was assured. All procedures performed in the study were in accordance with the ethical standards of the institutional and/or national research committee, and with the Declaration of Helsinki or comparable ethical standards. All the participants provided informed consent. After a month, 250 participants completely filled in the scale anew, with the aim of determining the test-retest correlation.

The majority of the participants had completed secondary education (44.6%), 29.1% were university students, 6.6% had primary education, and 19.8% higher education. There was no difference in educational levels according to the regions ($\chi^2(6) = 1.548$, $p = .956$), but the sample was of somewhat "higher" educational status in comparison with the general population, judging from the State census records (Statistical Office of the Republic of Serbia, 2013). A quarter of the participants (24%) reported that they were in their studies, 50% were employed, 18% unemployed, and 8% retired. Slightly over a quarter of the participants (26.9%) estimated their economic status as poor, 38.2% as middle, upper middle 26.7%, and 8.2 % as a high status.

The sample was divided into two balanced subsamples ($n_1 = 510$, $n_2 = 510$), with an even number of the participants according to sex ($\chi^2(1) = .001$, $p = .98$), age groups ($\chi^2(5) = 1.39$, $p = .74$), education ($\chi^2(3) = 2.33$, $p = .42$), and economic status ($\chi^2(3) = 1.12$, $p = .84$), so as to be able to conduct additional analyses on two balanced samples (explorative factor analysis on the first and confirmatory factor analysis on the second subsample).

## Instruments

All the participants completed the demographic questionnaire (age, sex, region, education, work and economic status), and the EAS scale. The basis for the development of the initial items for the current scale were the Environmental Attitudes Inventory (Milfont & Duckitt, 2010) and the New Environmental Paradigm Scale (Dunlap et al., 2000). According to these frameworks, the structure of EA can be characterised by 10 to 12 first-order factors and two second-order factors (preservation – the general belief that priority should be given to preserving nature and natural species, and utilization – the general belief that it is right, appropriate, and necessary for nature and all species to be used or altered for human objectives). After the comprehensibility of the items was evaluated by two independent psychologists (content validity), the initial scale included 52 items, that can be categorized into seven subscales according to the theory and empirical results: Love of nature (e.g., *I enjoy spending time in nature, watching birds, trees, or water*), Preservation measures or policies (e.g., *The government should impose harsher penalties on those who release contaminated water into rivers and lakes*), Environmental activism (e.g., *I'd like to*

*take an active part in a campaign for nature conservation*), Personal conservation practice or pro-environmental behaviours (e.g., *I always switch the lights off in the room when I don't need them*), Population growth policies (e.g., *If the number of people in the world keeps growing at this pace, we won't have enough food and water for everyone*), Instrumentalism, which subsumes the concept of altering nature to suit human needs (e.g., *Nature conservation is less important than securing employment and a higher living standard*; *When nature is tailored to human needs, we have the right to alter it to better suit our needs*), and Environmental concern (e.g., *Humans' agency in environmental destruction and pollution will lead to the occurrence and spread of diseases and epidemics*). The participants rated their agreement with every item on the scale, within the range from 1 (*not at all*) to 5 (*completely*).

### Statistical analyses

The data were processed by using the SPSS 21. Internal consistency of the EAS subscales was measured by Cronbach's alpha. Differences in frequencies and scores were computed by means of *t*-test and ANOVA, while the Pearson coefficients were calculated to examine correlations. Exploratory factor analysis was employed (Principal axis factoring with Direct Oblimin rotation) to determine the factorial structure, and Confirmatory factor analysis (Maximum likelihood method) in Amos 18 to confirm it.

## Results

### EAS psychometric properties

Since the scale showed satisfactory preliminary results (Bartlett's test of sphericity $\chi^2(780) = 4938.24$, $p < .001$; measure of representativeness $KMO = 0.78$), the items were consequently factor-analysed on the initial subsample, via Principal axis factoring with Direct Oblimin rotation. The items were assigned to subscales if they loaded >.50 on a specific factor. After excluding items due to

comprehension issues,[1] a low loading or high multiple factor loadings,[2] 34 items were retained. These items constituted a seven-factor latent structure, explaining 49.92% of the total variance observed.

Subsequently, we tested this correlated factor model on an independent subsample via Confirmatory factor analysis (Maximum likelihood method) in Amos 18. In order to evaluate model fit, the following indices were used (Schermelleh-Engel et al., 2003): comparative fit index (*CFI*) >.95, goodness-of-fit (*GFI*) >.95, Bentler-Bonett normed fit index (*NFI*) >.95, a root mean-square error of approximation (*RMSEA*) and standardized root mean-square residual (*SRMR*). Cut-off levels for *RMSEA* and *SRMR* were <.06 for "good fit" (Hu & Bentler, 1999). The model with fit indices is shown in Table 1. The final model shown in Table 1 is the model where certain items were intercorrelated within their subscales, which resulted in the reduction of chi-square values as well as the improvement of other model fit indices in comparison to the initial model.

Table 1
Model fit indices

| Model | $\chi^2/df$ | *RMSEA (90% CI)* | *SRMR* | *GFI* | *CFI* | *NFI* |
|---|---|---|---|---|---|---|
| Initial model | 3.18 | .057 (.054 - .060) | .056 | .86 | .85 | .83 |
| Final model | 2.62 | .049 (.046 - .053) | .048 | .89 | .90 | .87 |

This final scale included 34 items explaining 51.84% of the common variance observed (Table 2).

[1] e.g., It was shown that the participants had difficulty with the wording of the item "I believe nature is important and valuable in its own right"

[2] e.g., Item "People uncontrollably abuse and exploit nature" showed moderate loadings, both on the Environmental concern factor and Preservation policies factor; Item "Nature conservation is less important than securing employment and a higher living standard" had moderate loadings on the Instrumentalism factor as well as Environmental concern factor, whereas Item "I'm sad to see people polluting lakes and rivers, and destroying forests" had moderate loadings on the Love of nature as well as Environmental concern factor.

Table 2

Percent variance in the latent space of the EAS

| Factor | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | EV | % of Variance | C % | EV | % of Variance | C % |
| 1 | 6.69 | 20.26 | 20.26 | 6.18 | 18.72 | 18.72 |
| 2 | 3.88 | 11.76 | 31.99 | 3.38 | 10.24 | 28.96 |
| 3 | 3.45 | 10.45 | 42.44 | 2.95 | 8.94 | 37.90 |
| 4 | 1.91 | 5.80 | 48.24 | 1.41 | 4.28 | 42.18 |
| 5 | 1.78 | 5.39 | 53.63 | 1.28 | 3.87 | 46.05 |
| 6 | 1.52 | 4.62 | 58.25 | 1.03 | 3.12 | 49.17 |
| 7 | 1.45 | 4.40 | 62.65 | .87 | 2.67 | 51.84 |

*Note.* EV = Eigenvalues, C % = Cumulative percent of the total variance observed

EAS factor loadings are presented in Table 3. Factor 1 – Love of nature, which accounted for 18.72% of the variance, typifies emotional reactions to cherishing different forms of the environment (e.g., *Being in nature helps me relax and relieve stress*). Factor 2, explaining 10.24% of the variance, includes Population growth policies (e.g., *We should aspire to slower population growth*). Factor 3, explaining 8.94% of the variance, illustrates Pro-environmental behaviours that individuals may perform in everyday life to preserve or protect the environment (e.g., *I avoid using plastic bags and plastic packaging*), while Factor 4, accounted for 4.28% of the variance, represents the measures that the participants believe should be taken by institutions, so as to avoid the said negative effects (e.g., *The government should control the extent to which raw materials are used to prevent the depletion of their reserves*). Factor 5 – Environment concern, with the items typifying fears of harmful consequences of exploiting nature (e.g., *If we continue exploiting natural resources and destroying nature at this pace, we will witness devastating natural disasters*), accounted for 3.87% of the variance. Items exemplifying an anthropocentric worldview and those placing satisfaction of human needs at the forefront (e.g., *People should control nature*), formed Factor 6, Instrumentalism (explaining 3.12% of the variance). Environmental activism (e.g., *I am willing to take part in raising money*

*for environmental charities*) is represented in Factor 7 (explaining 2.67% of the variance).

Table 3

EAS factor loadings

| | Love of nature | Population growth policies | Pro-environment. behaviour | Preservation measures | Environment concern | Instrumentalism | Environment. activism |
|---|---|---|---|---|---|---|---|
| LoN01 | .572 | | | | | | |
| LoN02 | .657 | | | | | | |
| LoN03 | .735 | | | | | | |
| LoN04 | .691 | | | | | | |
| LoN05 | .745 | | | | | | |
| PGP01 | | .530 | | | | | |
| PGP02 | | .572 | | | | | |
| PGP03 | | .682 | | | | | |
| PGP04 | | .669 | | | | | |
| PGP05 | | .604 | | | | | |
| PEB01 | | | .528 | | | | |
| PEB02 | | | .512 | | | | |
| PEB03 | | | .639 | | | | |
| PEB04 | | | .940 | | | | |
| PEB05 | | | .925 | | | | |
| PM01 | | | | -.642 | | | |
| PM02 | | | | -.701 | | | |
| PM03 | | | | -.655 | | | |
| PM04 | | | | -.639 | | | |
| PM05 | | | | -.691 | | | |
| EC01 | | | | | .865 | | |
| EC02 | | | | | .618 | | |
| EC03 | | | | | .575 | | |
| EC04 | | | | | .506 | | |
| EC05 | | | | | .716 | | |
| INS01 | | | | | | .529 | |
| INS02 | | | | | | .546 | |
| INS03 | | | | | | .591 | |
| INS04 | | | | | | .589 | |
| INS05 | | | | | | .510 | |
| EA01 | | | | | | | .573 |
| EA02 | | | | | | | .579 |
| EA03 | | | | | | | .719 |
| EA04 | | | | | | | .518 |

*Note*. Original scale in the Serbian language can be obtained from the author

EAS showed internal consistency of *subscales* ranging from .74 to .82 (Table 4), and test-retest reliability of the total score $r_{tt}$ = .80.

Table 4
Descriptive statistics

| | *m* | *Min* | *Max* | *M* | *SD* | *Skewness* | *Kurtosis* | α |
|---|---|---|---|---|---|---|---|---|
| Love of nature | 5 | 5 | 25 | 20.40 | 4.10 | -.87 | .20 | .81 |
| Population growth policies | 5 | 5 | 25 | 11.74 | 4.57 | .40 | -.38 | .75 |
| Pro-environmental behaviour | 5 | 5 | 25 | 16.93 | 4.49 | -.30 | -.66 | .82 |
| Preservation measures | 5 | 5 | 25 | 18.56 | 4.90 | -.47 | -.55 | .80 |
| Environment concern | 5 | 8 | 25 | 20.90 | 3.27 | -.77 | .14 | .79 |
| Instrumentalism | 5 | 5 | 24 | 13.87 | 3.88 | .24 | -.42 | .74 |
| Environmental activism | 4 | 4 | 20 | 13.95 | 3.52 | -.40 | -.29 | .74 |

*Note*. *m* = number of items, *Sk* = coefficients of skewness, *Ku* = Kurtosis coefficient, α = Cronbach's alpha

As seen from Table 4, all summative scores by a factor were within ±1 boundary for Skewness and Kurtosis. Finally, intercorrelations were calculated for thus obtained factor scores, showing mainly weak correlations (Table 5). The highest, but still only moderate correlations were between Love of nature and Environment concern, and between Love of nature and Environmental activism.

Table 5
Factor scores intercorrelations

| | Environment. activism | Pro-environ. behaviour | Population growth policies | Instrument. | Environment concern | Preservation measures |
|---|---|---|---|---|---|---|
| Love of Nature | .396** | .273** | -.057 | -.277** | .436** | .345** |
| Environmental activism | | .359** | .071 | -.255** | .287** | .247** |
| Pro-environment. behaviour | .359** | | .120** | -.146** | .252** | .285** |
| Population growth policies | .071 | .120** | | -.068 | .048 | .147** |
| Instrumentalism | -.255** | -.146** | -.068 | | -.257** | -.337** |
| Environment concern | .287** | .252** | .048 | -.257** | | .342** |

*Note*. ** $p < .01$

From this factorial structure, three second-order factors have been extracted (using the same FA method as in first-order FA, except that we used the Varimax rotation since we did not expect latent factors to be strongly correlated), explaining 84.17% of the common variance. The first (Pro-environmental factor), explaining 46.11% of the variance (α = .87), contained the Love of nature, Environment concern, Pro-environmental behaviour, Environmental activism, and Preservation measures factors, the second contained only Population growth policies factor (α = .75), explaining 25.19% of the variance, while the third contained only the Instrumentalism factor (α = .74), explaining 12.87% of the variance (Table 6).

Table 6
EAS second-order factor loadings

| | Factor | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Love of Nature | .757 | | |
| Environmental activism | .658 | | |
| Environmental behaviour | .551 | | |
| Population growth policies | | | .935 |
| Instrumentalism | | .556 | |
| Environmental concern | .689 | | |
| Preservation policies | .636 | | |

Pro-environmental factor was in weak correlation with Population growth policies ($r$= .10; $p$ < .01), and moderate with Instrumentalism ($r$= -.38; $p$ < .01). There was no correlation between Instrumentalism and Population growth policies factors ($r$= -.07). Since EAS is not unidimensional, we may herein propose that the three total scores, illustrating the intensity of pro-environmental behaviour, be calculated. The first score would make the sum of scores on all items from the first higher-order factor (Pro-environmental factor). Moreover, our proposal is that the items from the Instrumental factor would make a sum with reverse coded scores, whereby higher scores would relate to a greater tendency towards pro-environmental behaviour, as is the case with the other two scores.

## Attitudes and demographic characteristics

Previous studies frequently reported differences in scores on EA dimensions in relation to demographic variables (Franzen & Vogl, 2013; Hurst et al., 2013), therefore we checked whether the same might be true for this scale. A weak negative correlation was found between age and Pro-environmental behaviour ($r$ = -.11, $p$ < .05), a weak positive correlation between age and Instrumentalism ($r$ = .07, $p$ < .05).

In male participants, Instrumentalism was more dominant ($t$(1018) = 1.98, $p$ < .05, $g$ = 0.02), whereas the scores on Love of Nature and Environment concern subscales were higher in female participants ($t$(1018) = -2.18, $p$ < .05, $g$ = 0.02; and $t$(1018) = -2.03, $p$ < .05, $g$ = 0.02 respectively), however, effect sizes were quite small. A lower level of education was followed by lower scores on Pro-environmental behaviour ($F$(3,1016) = 5.12, $p$ < .01, $\eta^2$ = .023), Preservation measures ($F$ (3,1016) = 16.92, $p$ < .01, $\eta^2$ = .071), and a higher score on Instrumentalism ($F$(3,1016) = 8.57, $p$ <.01, $\eta^2$ = .038), which was lower in university students.

# Discussion

## Scale dimensions

The main goal of the study was to test the psychometric properties of the Environmental Attitudes Scale (EAS). The results show that the scale has satisfactory properties, in terms of reliability and validity. Some of the model fit indices were slightly below the recommended values, as might have been expected due to the complexity of contents that this scale aims to systematize. Similar results were obtained in other studies involving similar scales as well. For example, one of the most commonly employed scales (NEP) frequently displayed problems with reliability, with alpha values around .68 (Hawcroft & Milfont, 2010). The final version of the scale includes 34 items, grouped into seven dimensions. This factor structure is in line with the previous findings.

The love of nature factor, a lifestyle wherein the connection with nature is highlighted, is similar to the connectedness with nature concept, which was extracted in previous studies (Gkargkavouzi et al., 2021; Hedlund-de Witt et al., 2014). The expressions of fears of harmful consequences of exploiting nature

formed another factor, which is similar to the construct of environmental concern found in the mentioned studies. The next two factors extracted in this study (pro-environmental behaviours and environmental activism), were also extracted in previous research, through factors illustrating behaviours that individuals may perform in everyday life to preserve or protect the environment (conservation of resources*)*, and actions typifying ecological activism (Gunduz et al., 2017; Milfont & Duckitt, 2010). Measures that the participants believe should be taken globally (or institutionally), so as to avoid the said negative effects formed the factor similar to the conservation policies factor in the Environmental Attitudes Inventory (Milfont & Duckitt, 2010).

The items exemplifying an anthropocentric worldview and those placing satisfaction of human needs at the forefront (often at the expense of the environment), formed a factor that is similar to the dimension of instrumentalism in other studies (Hedlund-de Witt et al., 2014): belief in the instrumental values of nature, as well as in the fact that environmental requirements should not become obstacles to human needs, such as economic growth.

Finally, a factor pertaining to population growth policies was also extracted, similar to concepts (e.g., limits to growth) in other studies (Cruz & Manata, 2020; Milfont & Duckitt, 2010).

Although three higher-order factors have been obtained, our results may be compared with previous two-factor models: preservation of nature and natural species (pro-environmental factor in our study), and utilization of nature and all species for human needs and objectives (instrumentalism in our study). The third higher-order factor obtained is quite unique because it entails environmental protection at the cost of reproduction, i.e., the parental motive, which is one of the most basic human needs. Despite the fact that some other types of pro-environmental behaviour include refraining from human needs or at least their convergence with the environmental requirements, this factor quite straightforwardly points to the deprivation of fundamental needs, which is most likely the reason why this factor was extracted as an independent factor in our analysis.

The Value-basis theory or the Value-belief-norm theory provides further theoretical explanation of these results, through values and affects that pro-

environmental behaviours are based on. According to this theory (Stern & Dietz, 1994), environmental attitudes are the result of an individual's set of three value orientations: (a) biospheric value orientation (i.e., concern for the inherent value of the natural environment and biosphere); (b) social altruistic value orientation (i.e., concern for the welfare of other human beings); and (c) egoism or self-interest (i.e., concern for the well-being of the self or the inner circles). The preservation measures and protection of nature are grounded in biospheric values, and partly in altruistic values. Population growth policies are grounded in altruistic values, while utilisation behaviours are grounded in egoistic and self-interest values.

## Pro-environmental attitudes and pro-environmental behaviour

The largest number of environmental training courses is focused on the cognitive component of EA (e.g., expanding environmental knowledge). Some studies also showed interest in the effect of the affective component of EA (Gunduz et al., 2017), and certain educational programmes are trying to increase an individual's emotional affinity towards nature, or commitment to nature (Kals et al., 1999). It is the behavioural attitude component that poses the biggest problem for research work and prediction of pro-environmental behaviour.

Our participants reported positive attitudes expressing love of nature, environmental concern, along with moderately positive attitudes towards the measures that a country, its government or an institution should adopt. However, these affective tendencies and suggestions for the actions of others are not always accompanied by corresponding ideas about taking adequate personal actions.

A theoretical grounding providing explanations for our results holds that a personal concern over environmental issues depends largely on the fact whether an individual is personally involved in the problem and whether they have some control over it (García-Mira et al., 2005). Problems are felt like less serious (which at the same time requires fewer personal actions), if they involve more active engagement of an individual, and more serious if they involve a lower level of control, less active engagement, and a greater distance (Uzzell, 2000). When the attitudes in our research entailed legal regulations and

institutional activities, whereby the items implied less active engagement of the participants, they had higher scores. In contrast to this, when the attitudes implied more active engagement of the participants in the protection and preservation of nature, the items had somewhat lower scores because the participants express rather neutral attitudes to personal pro-environmental actions, and environmental activism. Environmental activism (initiating and participating in activities, signing petitions, providing financial support), together with individual's habits concerning natural resources conservation (turning off lights, saving water), as well as using public utilities (recycling, public transport) are frequently the least developed component of environmental attitudes, which is the hardest to influence (Kennedy et al., 2009). Although the participants reported that they were relatively inclined to support pro-environmental behaviour, when such actions jeopardize or aggravate their daily lives and needs (for instance, when one needs to exert an effort to do something or spends too much of their "valuable" time), they seemed to express a lower level of agreement with such items, especially with environmental activism items. This is in line with the Theory of planned behaviour, according to which individuals choose options they perceive as the most beneficial but with fewer costs (Ajzen, 1991).

This may be corroborated with other attitudes, speaking in favour of the fact that people tend to overvalue the importance of gratification of personal needs in comparison to the importance of nature conservation. Namely, neutral attitudes were reported to anthropocentric view on the individual-nature issue, whereby humans are considered as more dominant and more important than other species, and thus may put their own needs before the needs of others or nature conservation.

Likewise, Goal framing theory suggests that three different types of goals or motivations govern environmental behaviour (Lindenberg & Steg, 2007). Acting pro-environmentally is often considered appropriate (normative reasons); however, in many cases it costs money and is less profitable (gain reasons), less pleasurable and more time-consuming (hedonic reasons) than environmentally harmful actions.

Among many demographic characteristics associated with individuals' environmental concern and attitudes, the most frequently underlined are age, education, sex, and income (Franzen & Vogl, 2013; Hurst et al., 2013). Previous research has often found that women are more concerned than men due to different socialization and social roles (Domingues & Gonçalves, 2020). Females are socialized to be more expressive, to care, and to be more compassionate, nurturing, and helpful. Younger persons, individuals with a higher level of education and from middle and upper-middle-classes, display a tendency to care more about the quality of environmental characteristics, have a higher level of environmental concern than older and less educated citizens (Domingues & Gonçalves, 2020). Similar findings were obtained in our study which support the validity of EAS.

## Conclusion

The degree of man-made environmental changes is becoming more and more prominent with technological advancements, resulting in overpopulation, rapid urbanisation, pollution, production of substances that are not available in nature, and so on. This is the reason why it is of paramount importance to organize and plan the development of scientific disciplines which would monitor these changes and propose adequate ways for their amelioration, through rational control and adjustment of human behaviour causing them.

The results of the current study have corroborated the findings of the studies underlining that the conative or behavioural component is the biggest problem in terms of prediction and stimulation of pro-environmental behaviour. Content analysis of the responses also confirmed the importance of the engagement and personal actions in pro-environmental movement. Thus, problems are perceived as less serious if they entail a more active engagement of the individual, and more serious if they involve a lower degree of control and a larger distance. The psychometric testing of the scale showed satisfactory properties. The main limitation of the paper lies in the fact that external validation of the scale has not been performed. Moreover, the influence of volunteer bias may be at work herein. Namely, the participants who volunteered to take part in the study may have already been interested in this topic, and thus had positive attitudes towards pro-environmental behaviours.

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*Conflict of interest*

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*Data availability statement*

For further details on data, contact the corresponding author of the manuscript.

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